AHNS 2018 Annual Meeting

DURING THE COMBINED OTOLARYNGOLOGY SPRING MEETINGS (COSM)

Elevating Head and Neck Cancer Care Through Evidence Based Medicine

April 18 - 19, 2018

Gaylord National Resort and Convention Center, National Harbor, MD

AHNS PRESIDENT:
Jonathan C. Irish, MD, FACS, MSc, FRCSC

PROGRAM CHAIR:
D. Gregory Farwell, MD, FACS

PROGRAM CO-CHAIR:
Danny J. Enepekides, MD, FRCSC, MPH

THE RESEARCH AND EDUCATION FOUNDATION OF THE AMERICAN HEAD AND NECK SOCIETY

HONORING OUR COLLEAGUE EDUARDO MÉNDEZ

Early this year we lost an esteemed colleague, Dr. Eduardo (Eddie) Méndez. Born in San Juan, Puerto Rico on July 30, 1972, Eddie died peacefully with his wife and family at his side on January 5, 2018 after a courageous two and a half year fight against cancer.

As a leader in the AHNS, Eddie served as the Co-Chair of the Diversity Task Force. Upon learning of the Myers' Family generous gift to establish the Myers Family Summer Diversity Fellowship last spring, Eddie initiated a campaign to establish a second fellowship. Upon his passing, the AHNS and Foundation leadership dedicated the second fellowship in Eddie's honor by naming it the Eduardo Méndez Diversity Summer Fellowship.

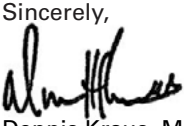
The goal is to establish a fund within the Foundation in the amount of $125,000. The annual proceeds will support a fellowship for a medical student to spend a summer under the mentorship of an AHNS member. The intention of the Fellowship is to encourage medical students from diverse backgrounds to pursue careers as head and neck cancer surgeons.

Please join us in honoring our friend and colleague, Eduardo Méndez with your gift today. We hope you will consider a donation of $200. Each contribution moves us closer to the goal of realizing Eddie's vision.

The Foundation also welcomes partnerships with individuals, industry and foundations who may share a common desire to end head and neck cancer. Please contact Colleen Elkins for more information at colleen@ahns.info.

For more information about the Foundation, or to make your gift today, please visit our webite www.ahnsfoundation.info

Sincerely,



Dennis Kraus, MD
Foundation Chair

American Head and Neck Society
2018 Annual Meeting

During the Combined Otolaryngology Spring Meetings

MEETING PROGRAM

April 18 - 19, 2018
Gaylord National Resort and Convention Center
National Harbor, Maryland

The American Head & Neck Society (AHNS)
11300 W. Olympic Blvd., Suite 600
Los Angeles, CA 90064
Phone: (310) 437-0559
Fax: (310) 437-0585
www.ahns.info

The American Head & Neck Society is managed by
BSC Management, Inc.
Phone: (310) 437-0555
Fax: (310) 437-0585
E-Mail: info@bscmanage.com
www.bscmanage.com

Table of Contents

AHNS 2018 ANNUAL MEETING CORPORATE SUPPORTERS

Thank You!

The American Head & Neck Society gratefully acknowledges generous unrestricted educational grants in support of the AHNS 2018 Annual Meeting by the following companies:

Astra Zeneca · Ethicon · Intuitive Surgical
Karl Storz Endoscopy · Medrobotics
Medtronic · Merck

AHNS 2018 ANNUAL MEETING IN KIND SUPPORTERS

The American Head & Neck Society gratefully acknowledges the following companies for generous in-kind contributions for the educational activities noted below:

Thyroid, Parathyroid and Neck Ultrasound Course – Durable Equipment

Phillips Ultrasound

RGS Healthcare

General Information

The American Head and Neck Society's 2018 Annual Meeting

April 18 - 19, 2018

Gaylord National Resort

201 Waterfront St, National Harbor, MD 20745

COSM Registration Hours

Maryland Ballroom Foyer

Tuesday, April 17	5:00 pm - 7:00 pm*
Wednesday, April 18	6:30 am - 5:00 pm
Thursday, April 19	7:00 am - 5:00 pm
Friday, April 20	7:00 am - 5:00 pm
Saturday, April 21	7:00 am - 3:00 pm
Sunday, April 22	7:00 am - 10:00 am

*subject to change

COSM Exhibit Hall Hours

Prince George's Exhibit Hall A

Thursday, April 19	9:00 am - 4:00 pm
Friday, April 20	9:00 am - 4:00 pm
Saturday, April 21	9:00 am - 4:00 pm

Speaker Ready Room Hours

Chesapeake K

Speakers must check in at the Speaker Ready Room 4 hours before their presentation.

Tuesday, April 17	4:00 pm - 8:00 pm
Wednesday, April 18	6:00 am - 6:00 pm
Thursday, April 19	6:00 am - 6:00 pm
Friday, April 20	6:00 am - 6:00 pm
Saturday, April 21	7:00 am - 6:00 pm
Sunday, April 22	7:00 am - 10:00 am

AHNS Foundation/Centurion Club Lounge

Chesapeake A

Wednesday, April 18	7:30 am - 5:00 pm
Thursday, April 19	7:30 am - 5:00 pm

Official Language

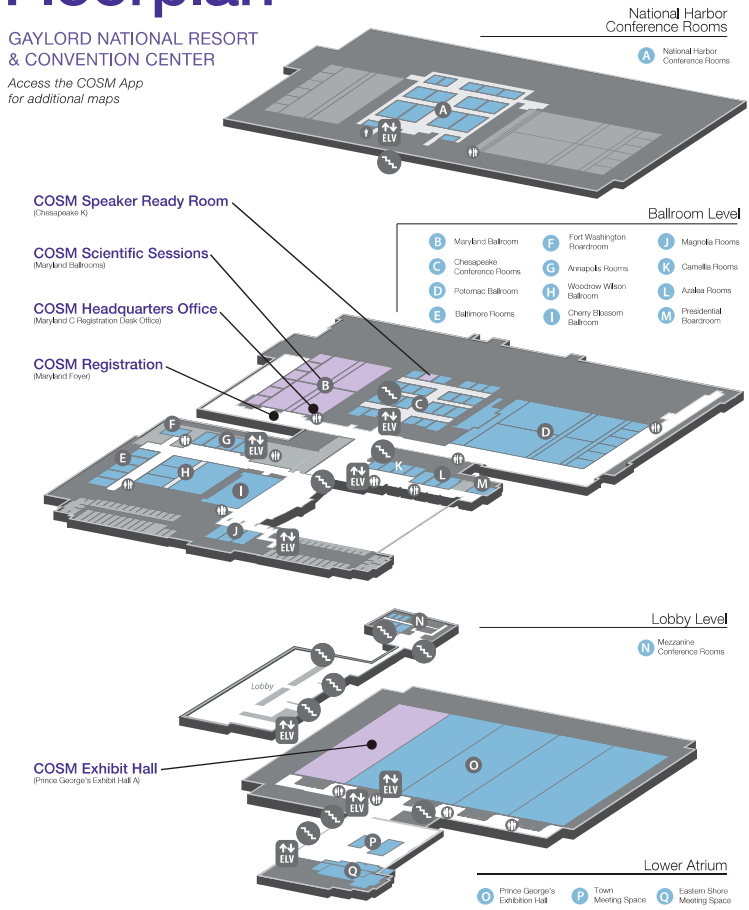
The official language of the conference is English. Simultaneous translation will not be offered.

Gaylord National Harbor Floor Plans

Floorplan

GAYLORD NATIONAL RESORT
& CONVENTION CENTER

Access the COSM App for additional maps



General Information

AHNS 2018 Annual Meeting Educational Objectives

At the conclusion of the activity, participants will be able to:

1. Better evaluate interventions in relation to their value in management of head and neck cancer patients.
2. Apply the new staging system to their patients.
3. Appropriately recommend novel reconstructive technologies and techniques in the most appropriate clinical scenarios.

AHNS 2018 CME Credit Claim Process

Please use the worksheet on page 36 to track the number of CME hours you attend for each activity. After the meeting, an email will be sent to attendees with a link to the on-line survey and claim form.

To Receive Your CME Credit:

AHNS has instituted a process for claiming CME credits and printing certificates. All attendees wishing to receive a CME certificate for activities attended at the AHNS 2018 Annual Meeting must first complete an on-line meeting evaluation form. Complete your meeting evaluation here: https://www.research.net/r/AHNS2018

Attendance Certificates

Certificates of attendance instead of a certificate with your CME numbers will be electronic and emailed to participants upon request. Please email christines@ahns.info with any requests.

SAVE THE DATE!
AHNS FUTURE MEETING SCHEDULE

AHNS 2019 Annual Meeting
Held during the Combined Otolaryngology Spring Meetings (COSM)
May 1 - 5, 2019 • JW Marriott Austin • Austin, Texas

AHNS 10th International Conference on Head and Neck Cancer
July 18 - 22, 2020 • Hyatt Regency Chicago • Chicago, Illinois

AMERICAN HEAD & NECK SOCIETY

Mission

The mission of the AHNS is to advance Education, Research, and Quality of Care for the head and neck oncology patient

Why Join AHNS?

The American Head and Neck Society is an organization of physicians, scientists and allied health professionals dedicated to improving the understanding of Head and Neck Cancer and the care of patients afflicted with that disease. Membership is open to a wide variety of interested individuals in several categories that differ both in terms of responsibility and level of involvement in the society.

Benefits of AHNS membership

- *Member rates on all meeting registration fees*
- *Interaction with our worldwide network of surgeons, physicians and health care professionals dedicated to the prevention and treatment of head and neck cancer*
- *Access to the AHNS member contact information in the "Members Only" section of our web site*
- *Ability to apply for research grant awards*
- *Opportunity to participate on committees*

Membership Categories:

Active	Associate	Candidate	Corresponding
(Physician)	*(RN, PA, Etc...)*	*(Resident, Fellow)*	*(International)*

For more information about AHNS membership, and to apply:
Please visit our website at www.ahns.info/member-central
Questions? Call +1-310-437-0559, ext. 126

American Head & Neck Society Statement of Professionalism and Ethics

The American Head and Neck Society is committed to promulgating and promoting professionalism and ethical behavior in its membership. As members, we value the trust placed in us by our patients, colleagues and society, and therefore willingly pledge to uphold the ethical and professional principles and virtues of medicine as outlined below.

We have a fundamental and sacred duty to our patients. Therefore, we will:

- Recognize that the welfare of our patients is the paramount priority
- Serve as advisors to our patients to help them navigate complex medical decisions
- Discuss the risks, benefits and alternatives of appropriate therapeutic options
- Be respectful of our patients' viewpoints and beliefs
- Support our patients physically, emotionally and spiritually
- Care for and support our patients at the end of life
- Offer support and care to our patients' families
- Strive to enhance and maximize our clinical, surgical and interpersonal competence
- Maintain a caring and respectful demeanor

We have a responsibility to our colleagues and teachers. Therefore, we will:

- Willingly acknowledge our skills and expertise to those wishing to learn
- Honor our teachers for devoting their time and energy on our behalf
- Assist our colleagues, technically, intellectually, emotionally and spiritually
- Respect our colleagues from other disciplines and practice multidisciplinary care
- Provide legal opinions based only on evidenced-based practice and standards of care
- Offer care without regard to gender, age, religion, sexual orientation, socioeconomic status or ethnicity

We also have an obligation to the faith entrusted in us by society. Therefore, we will:

- Perform self regulation by developing and adhering to professional, ethical and evidence-based practice standards
- Disclose and limit conflict of interest
- Practice medicine honestly, compassionately and confidentially
- Educate the public within the bounds of our expertise

AHNS President

Jonathan Irish, MD, MSc, FRCSC

Dr. Irish graduated with his M.D. degree in 1984 from the University of Toronto. He completed residency training at UCLA and at the University of Toronto. He completed his Master's of Science degree in Molecular Biology at the Institute of Medical Science at the University of Toronto in 1991 where he studied the molecular biological characteristics of head and neck cancers. He completed the American Head and Neck Society Fellowship in Head and Neck Surgical Oncology in 1991 under Dr Patrick Gullane and joined the staff of the Toronto General Hospital and Princess Margaret Cancer Centre in 1992. He is currently Professor of Otolaryngology-Head and Neck Surgery and Head of the Division of Head and Neck Oncology and Reconstructive Surgery at the University of Toronto. Dr. Irish was elected as President of the American Head and Neck Society for 2017-2018.

In 2000, Dr. Irish was appointed as the Chief of the Department of Surgical Oncology at the Princess Margaret Cancer Centre and completed his term after 16 years in 2016. Since 2004, Dr. Irish has been a major health policy advisor and responsible for access to care, quality improvement and health care funding for the Surgical Oncology Program at Cancer Care Ontario which oversees the delivery of cancer services for 13.8 million people in the Province of Ontario, Canada. In 2004, Dr. Irish became the Clinical Lead for Access to Care ("Wait Times") and Strategic Funding Initiatives for the Surgical Oncology Program at Cancer Care Ontario and is responsible for the Cancer Surgery Wait Times portfolio. He was the Provincial Clinical Lead for Access to Services and Wait Times for the Province of Ontario from 2008-2012. In 2008, Dr. Irish was appointed Provincial Head of the Surgical Oncology Program at Cancer Care Ontario. As the Provincial Head for Surgical Oncology, Dr Irish has provided provincial leadership and oversight linking volume funding to quality improvement. Many of the performance metrics associated with these initiatives are reported as part of the Cancer System Quality Index (http://www.csqi.on.ca/) and are on the CCO website (https://www.cancercareontario.ca/en/cancer-care-ontario/programs/clinical-services/surgical-oncology-program).

As the Kevin and Sandra Sullivan Chair in Surgical Oncology at the University of Toronto he has led a multidisciplinary program in Guided Therapeutics at UHN and is currently leading the Guided Therapeutics Core and is Director of Clinical Faculty for the TECHNA Institute at the University Health Network. In that capacity Dr Irish leads a multidisciplinary team of surgeons, engineers, physicists and nanoparticle biochemists in the development of novel nanomedicine-based contrast agents which in combination with near real-time navigation and tracking systems can create innovative solutions for minimal access surgical approaches in cancer therapy.

Dr. Irish has over 340 peer review publications and over 30 book chapters and has over $10M in peer-review funding for his research. In 2017 he and his co-PIs were awarded a $6.6M Terry Fox New Frontiers Program Project grant for nanoparticle therapy development and clinical trials.

Jon is married to Professor Rosemary Martino who is a clinical epidemiologist and speech language pathologist and the Canada Research Chair in Dysphagia. Jon and Rosemary are extremely proud of their 3 children Matthew (30), Brendan (28) and Elizabeth (25).

About the American Head and Neck Society

History of the Society

On May 13, 1998, The American Head and Neck Society (AHNS) became the single largest organization in North America for the advancement of research and education in head and neck oncology. The merger of two societies, the American Society for Head and Neck Surgery and the Society of Head and Neck Surgeons, formed the American Head and Neck Society.

The contributions made by the two societies forming the AHNS are significant in the history of surgery in the United States. Dr. Hayes Martin conceived the Society of Head and Neck Surgeons in 1954, a surgeon considered by many to be the "father of modern head and neck tumor surgery." The purpose of the society was to exchange and advance the scientific knowledge relevant to the surgery of head and neck tumors (exclusive of brain surgery) with an emphasis on cancer of the head and neck. Two years later, The American Society for Head and Neck Surgery was organized with the goal to "facilitate and advance knowledge relevant to surgical treatment of diseases of the head and neck, including reconstruction and rehabilitation; promote advancement of the highest professional and ethical standards as they pertain to the practice of major head and neck surgery; and to honor those who have made major contributions in the field of head and neck surgery, or have aided in its advancement".

The new Society remains dedicated to the common goals of its parental organizations.

2018 Program Chair

D. Gregory Farwell, MD, FACS

D. Gregory Farwell, MD FACS is honored to serve as Professor and Chair of the Department of Otolaryngology-Head and Neck Surgery at the University of California, Davis. After graduating from Washington University School of Medicine, he completed his training at the University of Washington and the Fred Hutchinson Cancer Research Center before joining their faculty until 2004. After moving to UC Davis, he continued his passion for multidisciplinary research, resulting in his NIH-funded work looking at non-invasive auto-fluorescent signals to differentiate pathologic states of epithelium. He assumed the Chair in 2017 and maintains his busy clinical practice of endocrine and oncologic cases and a continuation of his microvascular career. Involvement in education and training have been central to his academic career and has included being on the North American and the International Board of the reconstructive surgical society, AO-ASIF. He is grateful for many outstanding mentors and colleagues, including Neal Futran, Danny Enepekides, Quang Luu, Arnaud Bewley, and Mike Moore. They have made his career incredibly rewarding and have collaborated with him in research and innovative clinical care. This culminated in the performance of the world's second documented laryngo-tracheal transplantation in 2010. He is indebted to his wife, Jennifer, and daughters, Sophia and Sarafina, for their love and incredible support.

2018 Program Co-Chair

Danny Enepekides, MD, FRCSC, MPH

Dr. Danny Enepekides completed his Otolaryngology-Head and Neck Surgery residency at McGill University in Montreal, Quebec, Canada. He then completed two and a half years of fellowship training in Head and Neck Oncology and Microvascular Reconstructive Surgery at the University of California-Davis and Hahnemann University in Philadelphia. He then assumed the positions of Associate Director of the Division of Head and Neck Surgery at the University of California – Davis and Chief of Otolaryngology at the Northern California-VA Medical Centre at Mather Field.

After 8 years in the United States, Dr. Enepekides returned to Canada and joined the University of Toronto's department of Otolaryngology-Head and Neck Surgery. He is currently the Chief of the department of Otolaryngology-Head and Neck Surgery at Sunnybrook Health Sciences Centre and the Chief of Surgical Oncology at the Odette Regional Cancer Centre. He also serves as a Regional Surgical Oncology Lead for Cancer Care Ontario.

Dr. Enepekides currently chairs the University of Toronto's Department of Otolaryngology-Head and Neck Surgery Quality and Safety Committee. He was recently appointed chair-elect of the Salivary Gland section for the American Head and Neck Society and is a member of the Advanced Training Council Committee.

He has authored over 65 peer-reviewed publications, multiple book chapters, and served as the reconstructive section editor for Current Opinion in *Otolaryngology-Head and Neck Surgery*.

Dr. Enepekides is eternally grateful for the support of his wife of 24 years, Elena, and their three wonderful children, Jordan, Anna, and Kristina.

Hayes Martin Lecturer

Adalsteinn D. Brown, PhD

Adalsteinn (Steini) Brown is the Director of the Institute for Health Policy, Management and Evaluation at the University of Toronto and the Dalla Lana Chair of Public Health Policy at the University. Past roles include Assistant Deputy Minister for Strategy at the Ontario Ministry of Health and Long-term Care and for Science and Research at the Ontario Ministry of Research and Innovation as well as work in start-ups and Fortune 500 companies in the US, Canada and Europe. On July 1st, he will become the interim Dean of the Dalla Lana School of Public Health.

Past Hayes Martin Lecturers

Mark K. Wax, MD	(2017)	John G. Batsakis, MD	(1994)
Ashok R. Shaha, MD	(2016)	Ronald H. Spiro, MD	(1993)
John A. Ridge, MD, PhD	(2015)	John M. Lore, MD	(1992)
Patrick J. Gullane, MD	(2014)	Ian Thomas Jackson, MD	(1991)
Jonas T. Johnson, MD	(2013)	Alando J. Ballantyne, MD	(1990)
Gregory T. Wolf, MD	(2012)	George A. Sisson, MD	(1989)
Randal S. Weber, MD	(2011)	M.J. Jurkiewicz, MD	(1988)
Adel El-Naggar, MD	(2010)	Elliot W. Strong, MD	(1987)
Charles W. Cummings, MD	(2009)	Donald P. Shedd, MD	(1986)
Waun Ki Hong, MD	(2008)	Alfred S. Ketcham, MD	(1985)
Jesus E. Medina, MD	(2007)	William A. Maddox, MD	(1984)
Keith S. Heller, MD	(2006)	John J. Conley, MD	(1983)
Richard K. Reznick, MD, MEd	(2005)	Milton Edgerton, MD	(1982)
Christopher J. O'Brien, MD	(2004)	Richard H. Jesse, MD	1981)
Michael Johns, MD	(2003)	Condict Moore, MD	(1980)
Eugene Myers, MD	(2002)	Edward F. Scanlon, MD	(1979)
William Wei, MS	(2001)	Harvey W. Baker, MD	(1978)
Robert M. Byers, MD	(2000)	Harry W. Southwick, MD	(1977)
Jean-Louis H. LeFebvre, MD	(1999)	Edgar L. Frazell, MD	(1976)
Jatin P. Shah, MD	(1998)	Charles C. Harrold, MD	(1975)
Blake Cady, MD	(1997)	Arthur G. James, MD	(1974)
Joseph N. Attie, MD	(1996)	Oliver H. Beahrs, MD	(1973)
Helmuth Goepfert, MD	(1995)	William S. MacComb, MD	(1972)

Hayes Martin Biography

Hayes Martin, MD

Hayes Martin was born in Dayton, a small town in north central Iowa. He attended the University of Iowa at Iowa Falls before being accepted to the medical school in 1913 on the same campus, finishing 4 years later in a class of 20.

World War I began in April 1917 while Hayes was in his final year of medical school. Many of his classmates at the medical school were in the Army ROTC units; however, Dr. Martin opted for the Navy, which he joined on the day America entered the war. He traveled to Europe on the USS Arkansas and was assigned to his permanent duty station at the U.S. Navy Air Station, La Trinite Sur Mer, France – a small seaside village on the southern coast of Brittany. The purpose of this base was antisubmarine warfare using blimps and kite balloons. Dr. Martin was made commanding officer of the air station for a brief period of time when the line officer in charge had become ill; it was a unique position for a medical officer in the Navy to take command during wartime.

After the war, Dr. Martin returned to the U.S and sought out an internship at the old Poly Clinic Hospital in New York City, which was temporarily made into a Veteran's Administration hospital. Part of his internship was spent at Bellevue in the fourth surgical division, where he felt he would have the best possible training in general surgery. The chief of the second division was John A. Hartwell, MD, the distinguished surgeon memorialized by the Fellow's Room in the library of the New York Academy of Medicine. Dr. Hartwell suggested that Dr. Martin go to Memorial Hospital to learn about cancer.

Dr. Martin received an internship at Memorial in the summer of 1922 and stayed on as a resident until 1923. He then had two years at the second surgical service at Bellevue, where he operated to his heart's content and got the surgical education he so strongly desired. Once he finished his residency, Dr. Martin returned to Memorial where he joined as clinical assistant surgeon on the staff.

Dr. Martin made the use of aspiration biopsy on all solid tumors popular throughout Memorial. Now, this procedure is done throughout the world. Dr. Martin co-authored the first report on the subject published in the Annals of Surgery. Numerous other articles followed, including Dr. Martin's two most famous publications, "Cancer of the Head and Neck," published in two issues of the Journal of the American Medical Association in 1948, and "Neck Dissection," appearing in Cancer in 1951. These two papers were so extensively requested that the American Cancer Society made reprints by the thousands available to those who requested them as many as 20 years after publication. Dr. Martin's bibliography encompasses more than 160 articles.

In 1934, Dr. Martin was appointed Chief of the Head and Neck Service at Memorial Hospital. It wasn't until 1940 that surgery began to take over as the treatment of choice for the majority of cancers of the head and neck. In that year, the beginnings of improved anesthesia permitted advances in surgery. Later, during World War II, antibiotics became available and surgery began to dominate much of head and neck cancer management. Dr. Martin wrote extensively on many subjects, most within the realm of head and neck surgery. His ideal was to be the complete head and neck surgeon and he treated a wide variety of head and neck abnormalities. His book, Surgery of the Head and Neck Tumors, was published in 1957.

Dr. Martin retired from active practice in 1957 at the age of 65. He performed his last operation at Memorial Hospital, assisted by Dr. Elliot Strong, in October 1959, but continued to see patients in his office until he passed away in 1977.

John J. Conley Lecturer

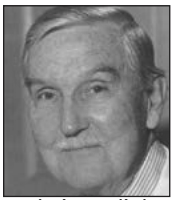
Brian O'Sullivan MD, FRCPC, FRCPI, FFRRCSI (Hon), FASTRO

Brian O'Sullivan is a Professor in the Department of Radiation Oncology and the Department of Otolaryngology / Head and Neck Surgery at the University of Toronto, Toronto, Ontario, Canada. He is Leader of the Princess Margaret Hospital / Hong Kong University-Shenzhen Hospital, China Sanming Radiation Oncology project. He holds the Bartley-Smith/Wharton Distinguished Chair in Radiation Oncology in the Department of Radiation Oncology at the Princess Margaret Hospital, University of Toronto. He received his medical degree from the National University of Ireland at University College in Dublin in 1976, and completed internship and general internal medicine at St. Vincent's Hospital in Dublin. Additional postgraduate training includes a fellowship in medical oncology, and a residency and clinical fellowship in radiation oncology, all at Princess Margaret Hospital in Toronto, Canada.

Professor O'Sullivan is the co-Chair of the US NCI Head and Neck Steering Committee, CTEP. He is the recipient of numerous international awards, and research grants. He has published in excess of 370 peer reviewed papers and 50 book chapters, and has written or edited 6 oncology textbooks. His interests includes sarcoma and head and neck cancer, translational research, IMRT delivery and the principles of image guided radiotherapy, and combinations of radiotherapy with systemic agents. He is a member of the TNM Committee of the Union for International Cancer Control (UICC), Chair of the UICC Prognostic Factors Sub-Committee and represents the UICC as head and neck cancer liaison to the American Joint Committee on Cancer (AJCC). Since 2014 he has been a Commissioner of the ICRU.

John J. Conley Biography

John J. Conley, MD



Although he looked and sounded like an English nobleman, Dr. John Conley was born in Carnegie, Pennsylvania, a small steel mill town just outside of Pittsburgh. He graduated from the University of Pittsburgh and later its school of medicine. He interned at Mercy Hospital in Pittsburgh. During that year, the nuns who ran the hospital suggested that Dr. Conley take a residency in cardiology and come back to Mercy as their cardiologist.

He went to Kings County Hospital in Brooklyn, a very busy city hospital with a huge patient population. Shortly after he began his training, he had an arrhythmia diagnosed as paroxysmal atrial tachycardia. Little was known about this benign condition at that time. Dr. Conley was told that cardiology was too stressful and that he should go into an easier, less-stressful field with better working hours, like ENT. He did an otolaryngology residency at Kings County Hospital. This was followed by four years of military service during World War II, which included experience in otolaryngology and plastic and reconstructive and maxillofacial surgery in the U.S. Army Medical Corps, both in this country and in the South Pacific theater. Exposure to the construction of war

wounds would prove invaluable to him later on in applying these principles to reconstruction following ablative head and neck surgery.

Dr. Conley returned to New York City after the war. He became an assistant and then an associate of Dr. George T. Pack, a technically superb general oncologic surgeon at Memorial Hospital who taught Dr. Conley major ablative surgery of the head and neck. They worked day and night catching up with the backlog of surgery that was neglected during the war years. The combination of his training in otolaryngology, the exposure to ablative surgery, and the World War II experience in reconstructive surgery set the stage for Dr. Conley to evolve his unique approach to head and neck surgery.

Ironically, despite the admonition of the cardiologists about hard work, Dr. Conley did a prodigious amount of major head and neck reconstructive surgery. This proved to be more than ample to provide training to many fellows. His commitment to education is further attested to by the position he held for many years as Clinical Professor of Otolaryngology at the College of Physicians and Surgeons at Columbia University. He loved his appointment at Columbia and particularly his involvement in teaching the residents.

Dr. Conley's vast surgical experience, together with active research interests, led to the authorship of almost 300 contributions to the scientific literature, and eight books. As a result of his productivity and rhetorical eloquence, he was very much in demand as a speaker in this country and abroad. He gave many prestigious eponymous lectures in our field and received many awards for his work, including the Philip H. Hench Award as the Distinguished Alumnus of the University of Pittsburgh School of Medicine, and the DeRoaldes and Newcomb Awards of the American Laryngological Association.

Dr. Conley's contributions to the scientific literature, many technical innovations and surgical experience placed him in the position to receive many honors and important leadership positions, such as President of the American Academy of Otolaryngology and Ophthalmology, member of the Board of Governors of the American College of Surgeons, founding member of the Society of Head and Neck Surgeons, and founding member and first President of the American Society for Head and Neck Surgery. During those years, Dr. Conley used, to the great benefit of us all, his wisdom and diplomacy in carrying out such high-level responsibilities.

Past John J. Conley Lecturers

Johannes Fagan, MBChB, MMed, FCORL	(2017)	Robert L. Comis, MD	(2010)
Robert S. Bell, CM, MSc, MD, FRCSC	(2016)	James D. Smith, MD	(2009)
Jonathan Irish, MD, MSc, FRCSC	(2015)	Carolyn Dresler, MD	(2008)
Antonio Fojo, MD, PhD	(2014)	Kenneth I. Shine, MD	(2007)
Patrick J. Gullane, MB, FRCSC, FRACS	(2013)	John Stone, MD, MACP	(2006)
Julie A. Freischlag, MD	(2012)	James F. Battey Jr., MD	(2005)
Benjamin S. Carson, Sr., MD	(2011)	David C. Leach, MD	(2004)
		Jonathan D. Moreno, MD	(2003)
		Rabbi David Saperstein	(2002)
		Edward Hughes, MD	(2001)

Keynote Lecturer

Michael Burns, President & CEO

Michael Burns brings his diverse background and skills, along with his passion of giving to the community, to his role as President & CEO of The Princess Margaret Cancer Foundation. He joined the organization at the beginning of 2018. Michael has over 20 years of experience in marketing, financial services, technology and entrepreneurship. Most recently, he was the CEO of the Invictus Games Toronto 2017, the largest international adaptive sport competition in the world featuring ill and injured soldiers and veterans. Michael led the execution of the Games in Toronto, building the organization from the ground up, which took more than two years. Under his leadership, the Games secured support from all three levels of government and more than 100 corporate and community partners, recruiting more than 1,800 volunteers and generating a budget surplus of more than $9 million. The Invictus Games in Toronto was completely sold-out and generated the highest national and worldwide viewing audience in the history of the event. Michael is co-founder of the True Patriot Love Foundation, which supports Canada's military, veterans and their families by funding programs for mental health, physical rehabilitation, career transition and family services. He is also Past Chair of the Michael Garron Hospital Foundation Board (formerly the Toronto East General Hospital Board Foundation). He successfully led the team that secured the Garrons' $50-million donation. He is also on the Board of the Canadian Institute for Military & Veteran Health Research and is a member of the Board of Directors of two world-class entertainment venues in Toronto: Roy Thomson Hall and Massey Hall. In February, he received the prestigious David C. Onley Award for Leadership in Accessibility for demonstrating an outstanding commitment to improving accessibility for people with disabilities. In 2017, Michael received an honorary Doctor of Laws from Dalhousie University. In 2016, Canada's Governor-General, on behalf of the Queen, awarded him The Meritorious Service Cross for his work with military families. In 2012, he was awarded the Canadian Forces Medallion for Distinguished Service, the military's highest honour for a civilian. That same year, he was also awarded a Queen Elizabeth II Diamond Jubilee Medal honouring significant contributions and achievements by Canadians. In 2010, he was named one of Canada's Top 40 Under 40.

Jatin P. Shah Symposium: Personalized Medicine - Can We Afford It?

Thursday, April 19, 2018
11:00am - 12:00pm
Maryland A

A panel of experts will discuss the value of genetic and molecular profiling in FLUS.

Jatin P. Shah Biography

Professor Jatin P. Shah graduated from the Medical College of MS University in Baroda, India, and received his training in Surgical Oncology and Head and Neck Surgery at Memorial Sloan Kettering Cancer Center. He is Professor of Surgery, at the Weil Medical College of Cornell University, and Chief of the Head and Neck Service, Leader of the Head and Neck Disease Management Team, and holds The Elliott W. Strong Chair in Head and Neck Oncology at Memorial Sloan-Kettering Cancer Center in New York City.

Dr. Shah is a national and international leader in the field of head and neck surgery, having served as President of The New York Cancer Society, The New York Head and Neck Society, The Society of Head and Neck Surgeons, The North American Skull Base Society and the International Academy of Oral Oncology. He is Founder of The International Federation of Head and Neck Oncologic Societies, in 1986. He currently serves as Chairman of the AJCC task force on Head and Neck. He was Chairman of the Joint Council for advanced training in head and neck oncologic surgery in the USA. He was also Chairman of the 4th International Conference on Head and Neck Cancer in Toronto in 1996. He has served in varying capacities for The American Board of Surgery, and the American College of Surgeons.

Professor Shah has been the recipient of numerous awards from various parts of the world, and is the recipient of honorary fellowships from The Royal College of Surgeons of Edinburgh, London and Australia. He holds Honorary PhD, degrees from the Catholic University of Louvain, in Belgium and the University of Athens, in Greece. He is recipient of the Blokhin Gold medal, the highest Honor in Oncology in Russia. He has been elected as an honorary member of several head and neck societies in Europe, Asia, Australia, Africa and Latin America. He has been continuously listed in the "Best Doctors in America" directories for several years. He serves on the Editorial and Review Boards of 18 scientific journals and has published over 300 peerreviewed articles, 50 book chapters and 7 books. His textbook of Head and Neck Surgery and Oncology won First Prize from The British Medical Association and The Royal Society of Medicine and was awarded the George Davey Howells Prize from the University of London, for the best published book in otolaryngology in the preceding five years.

He is a much sought after speaker who has delivered over 1,000 scientific presentations including, 59 eponymous lectures and keynote addresses, and visiting professorships in the United States, Canada, United Kingdom, Scotland, Sweden, Belgium, Germany, Italy, Spain, Poland, Russia, Croatia, Turkey, Egypt, South Africa, India, China, Korea, Japan, Hong Kong, Taiwan, Singapore, Phillipines, Australia, Argentina, Brazil, Chile, Peru, Equador, Venezula, Panama, and Mexico.

In recognition of his outstanding contributions, and World Leadership in Head and Neck Surgery, Memorial Sloan Kettering Cancer Center, has established The "Jatin Shah Chair in Head and Neck Surgery and Oncology", The International Federation of Head and Neck Oncologic Societies has established "The Jatin Shah Lecture", at its world congresses, and the American Head and Neck Society has established the "Jatin Shah Symposium" at its annual meeting.

Guest of Honor

Brian O'Sullivan MD, FRCPC, FRCPI, FFRRCSI (Hon), FASTRO

Brian O'Sullivan is a Professor in the Department of Radiation Oncology and the Department of Otolaryngology / Head and Neck Surgery at the University of Toronto, Toronto, Ontario, Canada. He is Leader of the Princess Margaret Hospital / Hong Kong University-Shenzhen Hospital, China Sanming Radiation Oncology project. He holds the Bartley-Smith/Wharton Distinguished Chair in Radiation Oncology in the Department of Radiation Oncology at the Princess Margaret Hospital, University of Toronto. He received his medical degree from the National University of Ireland at University College in Dublin in 1976, and completed internship and general internal medicine at St. Vincent's Hospital in Dublin. Additional postgraduate training includes a fellowship in medical oncology, and a residency and clinical fellowship in radiation oncology, all at Princess Margaret Hospital in Toronto, Canada.

Professor O'Sullivan is the co-Chair of the US NCI Head and Neck Steering Committee, CTEP. He is the recipient of numerous international awards, and research grants. He has published in excess of 370 peer reviewed papers and 50 book chapters, and has written or edited 6 oncology textbooks. His interests includes sarcoma and head and neck cancer, translational research, IMRT delivery and the principles of image guided radiotherapy, and combinations of radiotherapy with systemic agents. He is a member of the TNM Committee of the Union for International Cancer Control (UICC), Chair of the UICC Prognostic Factors Sub-Committee and represents the UICC as head and neck cancer liaison to the American Joint Committee on Cancer (AJCC). Since 2014 he has been a Commissioner of the ICRU.

Distinguished Service Award

Brian B. Burkey, MD MEd

Brian B. Burkey MD, MEd, FACS is currently Vice-chairman and Section Head of the Section of Head and Neck Surgery and Oncology at the Cleveland Clinic Head and Neck Institute. He also serves as Medical Director of the Center for Consumer Health Information within the Marketing Institute at the Cleveland Clinic, which is a group of 30 people dedicated to the production of multimedia patient health information for all medical needs of patients and their families. Dr. Burkey came to the Cleveland Clinic after almost twenty years at Vanderbilt University Medical Center, rising to Professor of Otolaryngology and Vice-chairman within that department.

Dr. Burkey finished undergraduate studies at the Johns Hopkins University, before obtaining his medical degree at the University Of Virginia School Of Medicine in 1986. He completed otolaryngology residency training at the University Of Michigan Department Of Otolaryngology and a fellowship in microvascular and facial plastic and reconstructive surgery at the Ohio State University, before launching his career at Vanderbilt. He has been an American Board of Otolaryngology diplomate since 1992, and his practice has an emphasis on head and neck oncologic and microvascular reconstructive surgery. He began co-directing the Vanderbilt fellowship in Head and Neck Oncologic and Microvascular Reconstructive Surgery starting in 1992, one of the early fellowships in microvascular surgery, and has trained over 30 fellows during his career, almost all of whom have positions in academic otolaryngology both nationally and internationally. He has continued this fellowship at the Cleveland Clinic, which is accredited by the American Head and Neck Society.

At Vanderbilt, Dr. Burkey served as residency Program Director for 15 years, which spanned three successful site visits. Dr. Burkey completed a seven-year tenure on the Otolaryngology Residency Review Committee of the ACGME, serving two years as Vice-chairman and two years as Chairman of that body. He then served as a consultant with ACGME-International and helped three programs in Singapore gain initial accreditation. He was on the steering committee which founded the Otolaryngology Program Directors Organization (OPDO), and served on the Executive Council and as President of the Society of University Otolaryngologists (SUO). He has also served as a guest examiner and senior examiner of the American Board of Otolaryngology and has been a member of the Board of Governors and numerous educational committees of the American College of Surgeons.

Dr. Burkey has been an active member of the American Head and Neck Society, serving on many committees and is now Secretary of that organization. He serves on the editorial board of multiple journals in the field of otolaryngology, and has lectured extensively on educational and clinical subjects both nationally and internationally. He has authored over 20 book chapters and 100 peer-reviewed articles on head and neck and reconstructive surgery topics. He has been a leader on several cooperative group studies and been a co-principal investigator of NIH-funded research. He continues to mentor residents and fellows and is hoping to continue innovation within all areas of medical education. He completed his Masters degree in Education with an emphasis on the health professions in the summer of 2014. Dr. Burkey is married to Maureen, his wife of over 35 years, and their daughter Rachel Burkey lives and teaches in Erie, Pennsylvania.

Past Distinguished Service Award Recipients

Jatin P. Shah, MD	1989	Ernest A. Weymuller, Jr., MD	2007
Stephan Ariyan, MD	1990	Helmuth Goepfert, MD	2008
Ashok R. Shaha, MD	1991	Keith S. Heller, MD	2009
Elliot W. Strong, MD	1995	Mark K. Wax, MD	2010
John J. Coleman, III MD	1999	Randal S. Weber	2011
David L. Larson, MD	1999	Ashok R. Shaha, MD	2012
Harold J. Wanebo, MD	1999	Dennis H. Kraus, MD	2013
Jonas T. Johnson, MD	2001	Jesus E. Medina, MD	2014
Helmuth Goepfert, MD	2003	Carol R. Bradford, MD	2015
Marc D. Coltrera, MD	2004	Ehab Hanna, MD	2016
Wayne Koch, MD	2005	Dennis H. Kraus, MD	2017
John A. Ridge, MD, PhD	2006		

Past Special Recognition Award Recipients

Paul B. Chyetien, MD	1984	Edgar L. Fazell, MD	1988
John M. Lore, Jr., MD	1985	Harvey W. Baker, MD	1989
William S. MacComb, MD	1986	Vahram Y. Bakamjian, MD	1991
Calvin T. Klopp, MD	1987	Jean-Louis Lefevbre, MD	1995

Presidential Citations

Ralph William Gilbert, MD, FRCSC

Dr. Gilbert is a Professor in the Department of Otolaryngology-Head and Neck Surgery at the University of Toronto. He is currently the Otolaryngologist-in-Chief at University Health Network and holds the Gullane/O'Neil Chair in Otolaryngology/H&N Surgery

Dr. Gilbert's academic focus is in head and neck oncology and reconstructive microsurgery. His current research is focused in clinical trials in Head and Neck Oncology and outcomes based research in Head and Neck with a particular focus on the outcomes related to reconstruction and function. His current focus is in laryngotracheal and maxillary reconstruction. Dr. Gilbert has extensive clinical experience in oncologic and reconstructive surgery of the head and neck. He has delivered numerous international keynote presentations on head and neck oncology and innovation in head and neck reconstruction.

Amber Hunter, MBA

Amber Hunter has been the Manager of the Surgical Oncology Program at Cancer Care Ontario for over 10 years. In this time Amber has managed the implementation of Multidisciplinary Cancer Conferences (MCCs) across the province where patients who receive a multidisciplinary discussion about their treatment plans increased from 24,000 to over 45,000 annually; and the best practice concordance rate improved 50% over 5 years. She has played a fundamental role in the consolidation of hospitals performing complex cancer surgery. And most recently manages the Ministry's Health System Funding Reform initiative as it relates to cancer surgery – ultimately reforming the payment formula of cancer surgery to each Ontario hospital.

Previously Amber worked as a global IT project manager for Computer Sciences Corporation and a global process manager for Nortel Networks. She holds a green belt in Six Sigma and a black belt in Lean methods. Amber holds a MBA specializing in strategy and health industry management from Schulich School of Business, York University.

Presidential Citations

Rosemary Martino, MSc, PhD

Dr. Rosemary Martino is a Professor in the department of Speech Language Pathology at the University of Toronto, Ontario Canada. Dr. Martino holds a Canada Research Chair in Swallowing Disorders. She completed a PhD in Clinical and Evaluative Sciences/ Health Outcomes at the University of Toronto. Dr. Martino practiced as a Speech-Language Pathologist for over 15 years with a focus in dysphagia. She is active in provincial, national and international dysphagia outcome and evidenced-based standards initiatives. Her current research includes the development of a medical status outcome scale for adults with dysphagia, called the Medical Outcomes of Dysphagia (i.e. MOD). She is also the principal investigator for several multi-site studies developing and assessing the validity and implementation of a dysphagia screening tool her group developed named the TOR-BSST©. This tool, in particular, has already been implemented throughout Canada and beyond as best practice. More recently she was successful in securing as co-principal investigator an award of $8.5 million USD to support a large, international multi-site pragmatic RCT comparing the benefit of swallowing therapies for patients with HNC. In sum, as principal investigator Dr. Martino has been awarded over $15 million in support of her research from CIHR, CCSRI, NCIC and PCORI.

Robin McLeod, MD

Dr. Robin McLeod received a B.Sc. and MD from the University of Alberta. Following this, she completed training in General Surgery at the University of Toronto, Colorectal Surgery at the Cleveland Clinic, as well as training in clinical epidemiology at McMaster University before joining the faculty at the University of Toronto. She is a Fellow of the Royal College of Physicians and Surgeons of Canada and the American College of Surgeons and a Fellow ad hominem of the Royal College of Surgeons of Edinburgh. She is a Diplomate of the American Board of Surgery and the American Board of Colorectal Surgery.

Dr. McLeod is currently a Professor in the Department of Surgery and the Institute of Health Policy Management and Evaluation and Vice Chair, Quality and Best Performance, in the Department of Surgery at the University of Toronto. As well, she is Vice President of Clinical Programs and Quality Initiatives at Cancer Care Ontario, the provincial agency which oversees all cancer services in Ontario.

Dr McLeod's clinical and research interests are colorectal cancer, inflammatory bowel disease, evidence based medicine, quality and knowledge translation. She has led a number of multi-center clinical trials and quality initiatives and has authored over 400 articles and 40 book chapters.

Presidential Citations

Jeffrey N. Myers, MD, PhD

Dr. Jeffrey N. Myers is Professor and Chair of the Department of Head and Neck Surgery at the University of Texas MD Anderson Cancer Center, where he also holds the Alando J. Ballantyne Distinguished Chair of Head and Neck Surgery. He was the President of the American Head and Neck Society in July 2016 and served through 2017. Dr. Myers received his medical (MD) and doctoral (PhD) degrees from the University of Pennsylvania School of Medicine and he then completed his residency training in Otolaryngology-Head and Neck Surgery at the University of Pittsburgh. He subsequently completed fellowship training in Head and Neck Surgical Oncology at the University of Texas MD Anderson Cancer Center in 1997, where he has been on the faculty ever since. Dr. Myers, has been at the forefront in the comprehensive genomic characterization of oral cancers and has made seminal contributions to understanding the mechanisms of p53 gain of function mutations in oral cancer progression and metastasis. His continuous and progressive discoveries are fundamental building blocks in the understanding of human cancer. He first reported the comprehensive genomic characterization of head and neck squamous cell carcinoma (HNSCC) and developed an algorithm, termed evolutionary action (EAp53), to identify gain of function p53 mutations that has both prognostic and predictive value. Dr. Myers research revealed previously unappreciated alterations in Notch, cell cycle and p53 pathways in HNSCC, which provided important biological insights that are helping to define new clinical strategies to treat this disease. Through continued pre-clinical study of Notch and p53 mutant HNSCC, he and his team identified therapeutic vulnerabilities to PI-3 kinase inhibition and DNA damage repair protein inhibition. These strategies show promise as single agents and are likely to have more efficacy in combination with conventional treatments such as radiation, chemotherapy, and/or immunotherapy. Dr. Myers and his team are currently working on translating these preclinical observations to look at the safety and efficacy of these targeted treatments in clinical trials.

Presidential Citations

Ian Witterick, MD, MSc, FRCSC

Dr. Witterick is Professor and Chair of the Department of Otolaryngology-Head & Neck Surgery at the University of Toronto. He is the Chief of Otolaryngology-Head & Neck Surgery and Chair of the Medical Advisory Committee at Sinai Health System in Toronto. He is the immediate Past President of the North American Skull Base Society and is Vice-President of the Canadian Society of Otolaryngology-Head & Neck Surgery. He has been on the organizing committee of the first three World Congresses on Thyroid Cancer (WCTC) and is helping to plan WCTC 3.5 in Rome (2019) and WCTC 4 in Boston (2021). He is appointed as a surgical oncologist at Princess Margaret Cancer Centre with a special interest in neoplasms of the nose/sinuses and anterior skull base.

Congratulations to the AHNS 2018 Manuscript Award Winners!

Presented during the AHNS Awards Ceremony

Thursday, April 19, 2018

9:15 am - 9:30am
Maryland A1-3

Robert Maxwell Byers Award

Caitlin P. McMullen, MD, University of Toronto

OCCULT NODAL DISEASE AND OCCULT EXTRANODAL EXTENSION IN OROPHARYNGEAL SQUAMOUS CELL CARCINOMA PATIENTS UNDERGOING PRIMARY TORS WITH NECK DISSECTION

Best Prevention and Early Detection Paper

Heidi Kletzien, MS,
University of Wisconsin School of Medicine and Public Health

THE POST-THYROIDECTOMY VOICE: THE DISCONNECT BETWEEN PATIENT-PERCEIVED VOICE CHANGES AND QUANTITATIVE VOICE MEASURES IN THE FIRST POSTOPERATIVE YEAR

Best Resident Clinical Paper

Patrick Carpenter, MD,
The University of Utah School of Medicine

CELECOXIB DECREASES ACUTE POSTOPERATIVE OPIOID REQUIREMENTS AFTER HEAD AND NECK RECONSTRUCTION WITH FREE TISSUE TRANSFER: A MATCHED-COHORT STUDY

Best Resident Basic Science Paper

FN Chowdhury, University of Colorado Denver

INVASIVE FRONT OR TUMOR CORE:
CANCER STEM CELL LOCATION AND CORRELATIONS WITH CELLULAR BEHAVIOR AND PATIENT OUTCOME

AHNS Leadership

Officers of the AHNS

President	Jonathan Irish, MD, MSc, FRCSC, FACS
President-Elect	Ehab Hanna, MD
Vice President	Cherie-Ann Nathan, MD
Secretary	Brian B. Burkey, MD, MEd
Treasurer	Bevan Yueh, MD
Past President	Jeffrey Myers, MD, PhD
Past President	Dennis H. Kraus, MD
Past President	Douglas A. Girod, MD
Foundation President	Dennis H. Kraus, MD

Fellows-At-Large

Joseph Califano, MD
Neal D. Futran, MD, DMD
David Goldenberg, MD
Susan Dixon McCammon, MD
Jeremy Richmon, MD
Maie St. John, MD, PhD
Yelizaveta Lisa Shnayder, MD
David J. Terris, MD
Wendell Gray Yarbrough, MD, MMHC

Committees of the AHNS 2017-2018

Ad Hoc Journal Task Force

Daniel G. Deschler, MD, Chair	2014-2017	John Yoo, MD, FRCSC	2016-2019
David J. Adelstein, MD	2016-2019	D. Gregory Farwell, MD, FACS	2014-2017
Carol R. Bradford, MD	2016-2019	Christine G. Gourin, MD	2014-2017
Joseph Anthony Califano, MD	2016-2019	Neil Dwayne Gross, MD	2014-2017
Samir Khariwala, MD	2016-2019	William M. Lydiatt, MD	2014-2017
Brian Nussenbaum, MD	2014-2017	Cherie-Ann O. Nathan, MD	2014-2017
Eben L. Rosenthal, MD	2016-2019		

Ad Hoc Young Members Committee

Vikas Mehta, MD, Co-Chair	2015-2018	Kiran Kakarala, MD	2015-2018
Thomas Julian Ow, MD, Co-Chair	2015-2018	Ted Leem	2015-2018
Mihir Kiran Bhayani, MD	2015-2018	Carol Lewis, MD, MPH	2015-2018
Steve S. Chang, MD	2017-2020	Jeffrey Chang-Jen Liu, MD	2015-2018
Charles Stuart Coffey, MD	2017-2020	Luc G.T. Morris, MD MSc	2015-2018
Carole Fakhry, MD, MPH	2015-2018	Melonie Adia Nance, MD	2015-2018
		Vivian Wu MD, MPH	2016-2018

Advanced Training Council (ATC)

Ara A. Chalian, MD, Chair	2014-2019	Danny Enepekides, MD, FRCS	2015-2020
Donald T. Weed, MD, Secretary	2014-2019	Douglas K. Frank, MD	2015-2020
Amit Agrawal, MD	2014-2019	Babak Givi, MD	2014-2019
William R. Carroll, MD	2013-2018	Amy Hessel, MD	2017-2022
Amy Y. Chen, MD, MPH	2014-2019	Robert Hart Lindau, MD	2015-2020
Marc A. Cohen, MD, MPH	2015-2020	Maisie Shindo, MD	2017-2022

Awards Committee

Neal D. Futran, MD, DMD, Chair	2016-2019	Stephen Y. Lai, MD, PhD	2016-2019
Nadir Ahmad, MD	2016-2019	Miriam Lango, MD	2017-2020
Jaimanti Bakshi, MBBS, MD	2015-2018	Wojciech K. Mydlarz, MD	2017-2020
Ricardo Carrau, MD	2017-2020	Jesse Ryan, MD	2017-2020
Tamer Ghanem, MD, PhD	2017-2020	William Russell Ryan, MD	2016-2019
David H. Hiltzik, MD	2017-2020	Matthew Edward Spector, MD	2016-2019
Daniel Philip Knott	2017-2020	Steven Joseph Wang, MD	2017-2020

AHNS Leadership

CME Compliance & Measurement Committee

Paul L. Friedlander, MD, Chair 2013-2019
Brian B. Burkey, MD, MEd, Ex Officio 2016-2019
Ricardo Carrau, MD 2017-2020
John Rukshan de Almeida, MD, MSc 2015-2018
Jason Anthony Diaz, MD 2015-2018
Robert A. Frankenthaler, MD 2016-2019
Vikas Mehta, MD 2016-2019
Oleg Militsakh, MD 2015-2018
J. Trad Wadsworth, MD 2015-2018
Steven Wang, MD 2017-2020

Constitution & Bylaws

Marilene B. Wang, MD, Chair 2016-2019
Brian B. Burkey, MD, Med, Ex Officio 2016-2020
William R. Carroll, MD 2016-2021
Ivan El-Sayed, MD 2016-2022
Babak Givi, MD 2016-2023
Ellie Maghami, MD 2016-2024
Kristen B. Pytynia, MD, MPH 2016-2025
Michael F. Spafford, MD 2016-2026
Steven Wang, MD 2016-2027
John Yoo, MD, FRCSC 2016-2028

Credentials Committee

Jonathan Irish, MD, MSc, FRCSC, Chair 2017-2018
Brian B. Burkey, MD, MEd 2016-2019
Charles Stuart Coffey, MD 2016-2019
Dennis H. Kraus, MD 2016-2018
Jeffrey N. Myers, MD, PhD 2017-2019
Jeremy Richmon, MD 2015-2018

Development Committee

Bert W. O'Malley, MD, Chair 2016-2019
Ricardo L. Carrau, MD 2016-2019
Umamaheswar Duvvuri, MD, PhD 2016-2019
David W. Eisele, MD 2016-2019
D. Gregory Farwell, MD, FACS 2017-2020
David Goldenberg, MD 2016-2019
Patrick Kyongmin Ha, MD 2016-2019
Alexandra Kejner, MD 2017-2020
Derrick Lin, MD 2016-2019
Scott Magnuson, MD 2017-2020
Vikas Mehta, MD 2017-2020
Eric Jason Moore, MD 2015-2018
Daniel W. Nuss, MD 2016-2019
Urjeet A. Patel, MD 2017-2020
Phil Pirgousis, MD, DMD 2017-2020
Anna Maria Pou, MD 2015-2018
Ralph P. Tufano, MD 2015-2018
John W. Werning, MD, DMD 2015-2018
Wendell Gray Yarbrough, MD, MMHC 2015-2018
Bevan Yueh, MD 2016-2019

Diversity Task Force

Keith M. Wilson MD, Chair 2016-2018
Jimmy James Brown MD 2016-2018
Trinitia Y. Cannon MD 2016-2018
Amy Y. Chen MD, MPH 2016-2018
Gina D. Jefferson MD 2016-2018
Ellie Maghami, MD 2016-2018
Larry L. Myers MD 2016-2018
Melonie Adia Nance MD 2016-2018
Vicente Resto MD, PhD, Co-Chair 2016-2018
Clementino Arturo Solares, MD 2016-2018
Tammara L. Watts MD, PhD 2016-2018
Jose Pedro Zevallos MD, MPH 2016-2018

AHNS Leadership

Education Committee

Babak Givi, MD, Chair	2016-2019
Arnaud Fassett Bewley, MD	2016-2019
J. Kenneth Byrd, MD	2016-2019
Ricardo Carrau, MD	2017-2020
Raymond Chai, MD	2017-2020
Amy Y. Chen, MD, MPH	2016-2019
Vasu Divi, MD	2017-2020
Mark El-Deiry, MD	2017-2020
Ivan El-Sayed, MD	2015-2018
Antoine Eskander, MD, ScM, FRCSC	2017-2020
Tanya Fancy, MD	2017-2020
D. Gregory Farwell, MD, FACS	2017-2020
Ian Ganly, MD, PhD	2016-2019
Tamer Ghanem, MD, PhD	2017-2020
Laureano Giraldez-Rodriguez	2017-2020
Zhen Gooi, MBBS	2016-2019
Christine G. Gourin, MD	2016-2019
Neil Dwayne Gross, MD	2017-2020
Greg Karl Hartig, MD	2017-2020
Chase Heaton	2017-2020
Amy C. Hessel, MD	2016-2019
Mark J. Jameson, MD, PhD	2015-2018
Benjamin Judson, MD	2016-2019
Russel Roy Kahmke, MD	2017-2020
Stephen Kang, MD	2017-2020
Jason Kass, MD, PhD	2017-2020
Luiz P Kowalski, MD, PhD	2015-2018
Levi G. Ledgerwood, MD	2017-2020
William M. Lydiatt, MD	2016-2019
Scott Magnuson, MD	2017-2020
Kelly Michele Malloy, MD	2016-2019
Avinash Mantravadi	2016-2019
Abie Mendelsohn, MD	2017-2020
Michael Geoffrey Moore, MD	2016-2019
Wojciech K. Mydlarz, MD	2017-2020
David Michael Neskey, MD	2017-2020
Elizabeth Anne Nicolli, MD	2016-2019
Daniel A. O'Connell	2017-2020
Aru Panwar, MD	2017-2020
Rusha Patel	2017-2020
Kumar Alok Pathak, MD, FRCSEd, FRCS(Glasg.), FRCSC	2016-2019
Yash Jagdish Patil	2016-2019
Kavita Pattani, MD, MS	2017-2020
A. Daniel Pinheiro, MD, PhD	2016-2019
Phil Pirgousis, MD, DMD	2017-2020
Liana Puscas, MD	2017-2020
Jesse Ryan, MD	2017-2020
Zoukaa B. Sargi, MD, MPH	2016-2019
Cecelia Schmalbach, MD, MS	2015-2018
Merry E. Sebelik, MD	2017-2020
Yelizaveta Lisa Shnayder, MD	2017-2020
Russell B. Smith, MD	2016-2019
Carl H. Snyderman, MD, MBA	2016-2019
Michael F. Spafford, MD	2017-2020
Marita Shan-Shan Teng, MD	2015-2018
Giovana R. Thomas, MD	2017-2020
Anthony P. Tufaro, DDS, MD	2015-2018
Harold J. Wanebo, MD	2016-2019
Steven Wang, MD	2017-2020
Bharat Bhushan Yarlagadda	2016-2019
Chad Zender, MD	2015-2018

Endocrine Section Board

David Terris, MD, FACE, Chair	2016-2019
Gregory Randolph, MD, FACE	2016-2019
Maisie Shindo, MD, Secretary	2016-2019
Dennis H. Kraus, MD	2015-2018
Lisa Orloff, MD	2016-2019
Russell Smith, MD	2015-2018
Brendan C. Stack, Jr. MD	2016-2019
David Steward, MD	2017-2020
Ralph P. Tufano, MD	2017-2020

Ethics and Professionalism Committee

Bruce Campbell, MD, Chair	2016-2019
Nishant Agrawal, MD	2017-2020
Samer Al-khudari, MD	2017-2020
Kevin Emerick, MD	2016-2019
Chad Galer, MD, MA	2016-2019
Trevor G. Hackman, MD	2016-2019
Greg Hartig, MD	2017-2020
Jeffrey B. Jorgensen, MD	2016-2019
Robert M. Kellman, MD	2016-2019
Robert Lindau, MD	2017-2020
Kyle Mannion, MD	2017-2020
Shawn D. Newlands, MD, PhD	2016-2019
Sara Pai, MD, PhD	2015-2018
Aru Panwar, MD	2017-2020
Liana Puscas, MD	2017-2020
Merry E. Sebelik, MD	2017-2020
Andrew G. Shuman, MD	2017-2020
Alfred A. Simental, MD	2017-2020
William Charles Spanos, MD	2017-2020
Shaum S. Sridharan	2017-2020
Kerstin M. Stenson, MD	2017-2020
Marita Shan-Shan Teng, MD	2015-2018
Jeremiah C. Tracy, MD	2017-2020
Mark A.S. Varvares, MD	2016-2019
John W. Werning, MD, DMD	2017-2020

Finance Committee

Eben L. Rosenthal, MD, Chair	2017-2018
Bevan Yueh, MD, Ex Officio	2016-2019
Bill Armstrong, MD	2017-2020
Karen T. Pitman, MD	2016-2019

AHNS Leadership

Global Outreach Committee

Mark Zafereo, MD, Chair	2016-2019
Nadir Ahmad, MD	2016-2019
Samer Al-khudari, MD	2017-2020
Rizwan Aslam, DO	2017-2020
Arnaud Bewley, MD	2017-2020
Bruce H. Campbell, MD	2015-2018
Andrew M. Coughlin	2016-2019
Tamer Ghanem, MD, PhD	2017-2020
Joseph Blake Golden, MD	2015-2018
Gregory Grillone, MD	2017-2020
Kunal Sudhir Jain, MD	2016-2019
Arjun S. Joshi, MD	2015-2018
Dev Prakash Kamdar	2016-2019
Alexandra Kejner, MD	2017-2020
Christopher Klem, MD	2016-2019
Wayne M. Koch, MD	2016-2019
Steve C. Lee, MD, PhD	2016-2019
Walter Lee, MD	2017-2020
Ilya Likhterov	2017-2020
Adam Luginbuhl, MD	2015-2018
Kyle Mannion, MD	2017-2020
James L. Netterville, MD	2016-2019
Enver Ozer, MD	2017-2020
Rusha Patel	2017-2020
Phillip Pirgousis, MD, DMD	2015-2018
Mark E.P. Prince, MD, FRCS	2016-2019
Jason Thomas Rich, MD	2015-2018
Merry E. Sebelik, MD	2016-2019
Yelizaveta Lisa Shnayder, MD	2016-2019
Robert J. Sinard, MD	2017-2020
Shaum S. Sridharan	2017-2020
Kerstin M. Stenson, MD	2016-2019
Jeremiah C. Tracy, MD	2017-2020
Chad Zender, MD	2015-2018

Head & Neck Reconstructive Committee

Urjeet A. Patel, MD, Chair	2016-2019
Samer Al-khudari, MD	2017-2020
Rizwan Aslam, DO	2017-2020
Rodrigo Bayon, MD	2016-2019
Arnaud Bewley, MD	2017-2020
Mark Steven Burke, MD	2016-2019
Steven B. Cannady	2016-2019
Shamir Chandarana, Md, MSc, FRCSC	2017-2020
Douglas B. Chepeha, MD	2016-2019
Peter T. Dziegielewski, MD, FRCSC	2016-2019
Mark El-Deiry, MD	2017-2020
Kevin Emerick, MD	2016-2019
Tanya Fancy, MD	2016-2019
Rui Fernandes, MD, DMD	2016-2019
Michael Fritz	2017-2020
Neal D. Futran, MD, DMD	2016-2019
Edward Gabalski, MD	2017-2020
Tamer Ghanem, MD, PhD	2017-2020
Laureano Giraldez-Rodriguez	2017-2020
Babak Givi, MD	2017-2020
Richard Goldman, MD	2017-2020
Joseph Goodman	2017-2020
Evan Graboyes, MD	2017-2020
Benjamin Greene, MD	2017-2020
Trevor G. Hackman, MD	2016-2019
Matthew M. Hanasono, MD	2016-2019
Chase Heaton	2017-2020
Kevin McLoughlin Patrick Higgins, MD, FRCSC	2015-2018
Andrew Tsao Huang, MD	2016-2019
Brian Hughley	2017-2020
Jason Patrick Hunt, MD	2016-2019
Adam S. Jacobson, MD	2016-2019
Kunal Sudhir Jain, MD	2017-2020
Russel Roy Kahmke, MD	2017-2020
Dev Prakash Kamdar	2016-2019
Stephen Y. Kang, MD	2016-2019
Jason Kass, MD, PhD	2017-2020
Sobia Khaja, MD	2017-2020
Samir Khariwala, MD	2016-2019
Daniel Philip Knott	2017-2020
Levi Ledgerwood, MD	2017-2020
Ryan Li	2017-2020
Ilya Likhterov	2017-2020
Robert Lindau, MD	2017-2020
Joshua E. Lubek, MD, DDS	2016-2019
Kyle Mannion, MD	2017-2020
Avinash Mantravadi	2016-2019
Jonathan Mark, MD	2016-2019
Caitlin McMullen	2017-2020
Matthew Christopher Miller, MD	2017-2020
Michael Geoffrey Moore, MD	2017-2020
Eric Jason Moore, MD	2017-2020
Mauricio Alejandro Moreno, MD	2016-2019
Enver Ozer, MD	2016-2019
Samip Natvarlal Patel	2016-2019
Sameer A. Patel, MD	2016-2019
Rusha Patel	2016-2019
Phil Pirgousis, MD, DMD	2017-2020
Rod Rezaee, MD	2017-2020
Jason Thomas Rich, MD	2015-2018
Jeremy Richmon, MD	2015-2018
Jesse Ryan, MD	2017-2020
Yelizaveta Lisa Shnayder, MD	2017-2020
Shaum S. Sridharan	2017-2020
Jeremiah C. Tracy, MD	2017-2020
Paul C. Walker	2017-2020
Mark K. Wax, MD	2016-2019
John Yoo, MD, FRCSC	2017-2020
Matthew Old, MD	2017-2020
Vasu Divi, MD	2017-2020

AHNS Leadership

History Committee

Jeffrey D. Spiro, MD, Chair	2016-2019
Nadir Ahmad, MD	2016-2019
Antonio E. Alfonso, MD	2017-2020
Bruce H. Campbell, MD	2015-2018
Lanny G. Close, MD	2016-2019
Edward Damrose, MD	2017-2020
Issam Naim Eid, MD	2016-2019
Joseph Goodman	2017-2020
Gregory Grillone, MD	2017-2020
Daniel Philip Knott	2017-2020
Perminder Parmar, MD	2017-2020
Liana Puscas, MD	2016-2019
James Rocco, MD, PhD	2016-2019
Michael F. Spafford, MD	2017-2020
Paul C. Walker	2017-2020
John W. Werning, MD, DMD	2017-2020

International Advisory Committee

Dennis H. Kraus, MD, Chair	2016-2019
Marlinda Adham, MD	2016-2019
Chung-Hwan Baek ,MD	2016-2019
Brian B. Burkey, MD, MEd	2016-2019
Claudio R. Cernea, MD	2016-2019
Jason Ying Kuen Chan	2016-2019
Pankaj Chaturvedi, MBBS, MS	2016-2019
June Corry, MD	2016-2019
Johannes J. Fagan, MD	2016-2019
Dan M. Fliss, MD	2016-2019
Ralph W. Gilbert, MD	2016-2019
Hernan E. Gonzalez, MD	2016-2019
N. Gopalakrishna Iyer, MD, PhD	2016-2019
Mumtaz J Khan, MD	2016-2019
Luiz P Kowalski ,MD, PhD	2016-2019
Innocent Kundiona, MD	2016-2019
René C Leemans, MD, PhD	2016-2019
Hisham Mehanna, PhD, MD	2016-2019
Jeffrey N. Myers, MD, PhD	2016-2019
Piero Nicolai, MD	2016-2019
Alain N. Sabri, MD	2016-2019
Richard Shaw, BDS, FDS, MBChB ,FRCS	2016-2019
Sandro J. Stoeckli, MD	2016-2019
Barbara Wollenberg, MD	2016-2019

Nominating Committee

Jeffrey N. Myers, MD, PhD, Chair	2017-2018
Boyd M. Gillespie, MD, MS	2017-2018
Douglas A. Girod, MD	2016-2018
Christine G. Gourin, MD	2017-2018
Dennis H. Kraus, MD	2017-2019

Prevention and Early Detection Committee

Cherie-Ann O. Nathan, MD, Chair	2016-2019
Nishant Agrawal, MD	2017-2020
Genevieve Ann Andrews, MD	2016-2019
Mihir Bhayani, MD	2017-2020
Todd Brickman, PhD, MD	2016-2019
Lanceford Chong, MD, MPH	2016-2019
David M. Cognetti, MD	2015-2018
Chad Galer, MD, MA	2016-2019
Ann M. Gillenwater, MD	2016-2019
Zhen Gooi, MD	2017-2020
Gregory Grillone, MD	2017-2020
Bradley Tyler Johnson, MD	2017-2020
Deepak Kademani, DMD, MD	2016-2019
Adedoyin Kalejaiye, MD	2017-2020
Wojciech K. Mydlarz, MD	2017-2020
Andrew Nemechek, MD	2017-2020
Kavita Pattani, MD, MS	2017-2020
Vicente Resto, MD, PhD	2016-2019
Ryan H. Sobel, MD	2016-2019
William Charles Spanos, MD	2017-2020
Andrew B. Tassler, MD	2017-2020
Steven Joseph Wang, MD	2017-2020

AHNS Leadership

Program Committee

Gregory Farwell, MD, FACS, Chair 2017-2018
Danny Enepekides, MD, FRCS, Co-Chair 2017-2018
Bruce Davidson, MD, Local Arrangements Co-Chair 2017-2018
Caitlin McMullen, Local Arrangements Co-Chair 2017-2018
Amit Agrawal, MD 2017-2018
Arnaud Bewley, MD 2017-2018
Jimmy Brown, MD 2017-2018
Kevin Brumund, MD 2017-2018
Trinitia Cannon, MD, MD 2017-2018
Amy Chen, MD, MPH 2017-2018
John de Almeida, MD, MSc 2017-2018
Jason Diaz, MD 2017-2018
Kevin Emerick, MD 2017-2018
Antoine Eskander, MD, ScM, FRCSC 2017-2018
Carole Fakhry, MD, MPH 2017-2018
Tanya Fancy, MD 2017-2018
Babak Givi, MD 2017-2018
David Goldstein, MD, FRCSC 2017-2018
Christine Gourin, MD 2017-2018
Irish Jonathan, MD, MSc, FRCSC 2017-2018
Samir Khariwala, MD 2017-2018
Carol Lewis, MD, MPH 2017-2018
Ellie Maghami, MD 2017-2018
Kelly Malloy, MD 2017-2018
Becky Massey, MD 2017-2018
Vikas Mehta, MD 2017-2018
Michael Moore, MD 2017-2018
Larry Myers, MD 2017-2018
Shawn Newlands, MD, PhD 2017-2018
Nitin Pagedar, MD 2017-2018
Liana Puscas, MD 2017-2018
Rahul Seth 2017-2018
Russell Smith, MD 2017-2018
Matthew Spector, MD 2017-2018
Brendan Stack, MD 2017-2018
Marita Teng, MD, FACS 2017-2018
John Yoo, MD, FRCSC 2017-2018
Jose Zevallos, MD, MPH 2017-2018

Publications Committee

Neal D. Futran, MD, DMD, Chair 2015-2018
Rizwan Aslam, DO 2017-2020
Kenneth Byrd, MD 2017-2020
Ricardo Carrau, MD 2017-2020
Raymond Chai, MD 2017-2020
Amy Y. Chen, MD, MPH 2016-2019
Marc Cohen, MD, MPH 2017-2020
Ivan El-Sayed, MD 2016-2019
Thomas Gal, MD, MPH 2016-2019
Ian Ganly, MD, PhD 2016-2019
Eric Genden, MD 2017-2020
Matthew M. Hanasono, MD 2016-2019
Stephen Kang, MD 2017-2020
Amy Anne Donatelli Lassig, MD, BA 2016-2019
Abie Mendelsohn, MD 2017-2020
Wojciech K. Mydlarz, MD 2017-2020
Daniel W. Nuss, MD 2016-2019
Aru Panwar, MD 2016-2019
Snehal G. Patel, MD, FRCS 2016-2019
Eben L. Rosenthal, MD 2016-2019
William Russell Ryan, MD 2016-2019
Arun Sharma, MD, MS 2017-2020
William Charles Spanos, MD 2017-2020
Shirley Y. Su, MBBS 2017-2020
Ozlem Emine Tulunay, MD 2016-2019
Jeffrey S. Wolf, MD 2016-2019
Mark Zafereo, MD 2016-2019

AHNS Leadership

Quality of Care Committee

John A. Ridge, MD, PhD, Chair 2015-2018
Nishant Agrawal, MD 2017-2020
Arnaud Bewley, MD 2017-2020
Mihir Bhayani, MD 2017-2020
Carol Bier-Laning, MD 2017-2020
Robert O. Brown, MD 2015-2018
Steve S Chang, MD 2015-2018
Charles Stuart Coffey, MD 2016-2019
Marc Cohen, MD, MPH 2017-2020
Edward Damrose, MD 2017-2020
Vasu Divi, MD 2016-2019
Joseph Dort, BSc, MD, MSc 2016-2019
Marcia Eustaquio 2017-2020
Douglas K. Frank, MD 2015-2018
Eric Genden, MD 2015-2018
Tamer Ghanem, MD, PhD 2017-2020
Richard Goldman, MD 2017-2020
Zhen Gooi, MD 2017-2020
Christine G. Gourin, MD 2016-2019
Evan Graboyes, MD 2017-2020
Gary Groot, MD, PhD 2015-2018
Amy C. Hessel, MD, Ex Officio 2016-2019
Scharukh Jalisi, MD 2017-2020
Bradley Tyler Johnson, MD 2017-2020
Kiran Kakarala, MD 2015-2018
Jason Kass, MD, PhD 2017-2020
Sobia Khaja, MD 2016-2019
Christopher Klem, MD 2016-2019
Eric D. Lamarre 2015-2018
Miriam Lango, MD 2017-2020
Jason M. Leibowitz, MD 2015-2018
Carol Lewis, MD, MPH 2016-2019
Ryan Li 2017-2020
Eustorgio A. Lopez, DDS, MD 2015-2018
Ellie Maghami, MD 2016-2019
Scott Magnuson, MD 2017-2020
Marcus Matthew Monroe 2016-2019
David Michael Neskey, MD 2017-2020
Daniel A. O'Connell 2017-2020
Nitin A. Pagedar, MD 2015-2018
Aru Panwar, MD 2017-2020
A. Daniel Pinheiro, MD, PhD 2015-2018
Karen T. Pitman, MD 2016-2019
Cecelia Schmalbach, MD, MS 2015-2018
Rahul Seth 2016-2019
Arun Sharma, MD, MS 2017-2020
William Charles Spanos, MD 2017-2020
Baran Devrim Sumer, MD 2016-2019
Andrew B. Tassler, MD 2016-2019
Terry T. Tsue, MD 2017-2020
Victoria Meucci Villaflor, MD 2015-2018
Emre Vural, MD 2016-2019
Ron Walker, MD 2017-2020
Paul C. Walker 2017-2020
Steven Wang, MD 2017-2020
Randal S. Weber, MD 2015-2018
John W. Werning, MD, DMD 2017-2020

REGENT Task Force

Randal Weber, MD, Chair 2016-2019
John A. Ridge, MD, PhD, Co-Chair 2016-2019
Brian Burkey, MD, MEd 2016-2019
Terry Day, MD 2016-2019
Eric Genden, MD 2016-2019
Doug A. Girod, MD 2016-2019
Amy Hessel, MD 2016-2019
Dennis Kraus, MD, FACS 2016-2019
Carol Lewis, MD, MPH 2016-2019
Jeffrey N. Myers, MD, PhD 2016-2019
Brian Nussenbaum, MD 2016-2019
Cecilia Schmalbach, MD, MS 2016-2019
Ralph Tufano, MD 2016-2019

Research Committee

James Rocco, MD, PhD, Chair 2016-2019
Babak Givi, MD, Ex Officio 2016-2019
Bryan Bell, MD, DDS 2017-2020
John Rukshan de Almeida, MD, MSc 2015-2018
Vasu Divi, MD 2017-2020
David Goldenberg, MD 2017-2020
Patrick Kyongmin Ha, MD 2016-2019
Chris Holsinger, MD 2017-2020
Mark J. Jameson, MD, PhD 2015-2018
Deepak Kademani, DMD, MD 2016-2019
Jason Kass, MD, PhD 2017-2020
Seungwon Kim, MD 2015-2018
Young Kim, MD, PhD 2015-2018
Amy Anne Donatelli Lassig, MD, BA 2017-2020
Jeffrey Chang-Jen Liu, MD 2016-2019
Jessica Hooton Maxwell, MD, MPH 2017-2020
Abie Mendelsohn, MD 2017-2020
Marcus Matthew Monroe 2016-2019
David Myssiorek, MD 2015-2018
David Michael Neskey, MD 2016-2019
Thomas Julian Ow, MD 2017-2020
Mihir Patel 2017-2020
Phillip Pirgousis, MD, DMD 2015-2018
Mark E.P. Prince, MD, FRCS 2017-2020
Jesse Ryan, MD 2017-2020
Nader Sadeghi, MD 2015-2018
Nicole C. Schmitt, MD 2017-2020
Arun Sharma, MD, MS 2017-2020
Yelizaveta Lisa Shnayder, MD 2017-2020
Andrew G. Sikora, MD, PhD 2017-2020
William Charles Spanos, MD 2017-2020
Matthew Edward Spector, MD 2015-2018
Paul M. Spring, MD 2015-2018
Baran Devrim Sumer, MD 2016-2019
Giovana R. Thomas, MD 2017-2020
Geoffrey Young, MD, PhD 2017-2020
Jose Pedro Zevallos, MD, MPH 2016-2019

AHNS Leadership

Survivorship Committee

Carole Fakhry, MD, MPH, Chair 2016-2019
Nishant Agrawal, MD 2017-2020
Genevieve Ann Andrews, MD 2016-2019
Mihir Bhayani, MD 2017-2020
Steven B. Cannady 2016-2019
Steve S Chang, MD 2016-2019
David M. Cognetti, MD 2016-2019
Andrew M. Coughlin 2016-2019
Joseph Goodman 2017-2020
Evan Graboyes, MD 2017-2020
Benjamin Greene, MD 2017-2020
Scharukh Jalisi, MD 2017-2020
Bradley Johnson, MD 2017-2020
Russel Roy Kahmke, MD 2017-2020
Carol Lewis, MD, MPH 2016-2019
Ilya Likhterov 2017-2020
Robert Lindau, MD 2017-2020
Matthew Christopher Miller, MD 2016-2019
Marcus Matthew Monroe 2016-2019
Michael Geoffrey Moore, MD 2017-2020
Mauricio Alejandro Moreno, MD 2017-2020
David Michael Neskey, MD 2017-2020
Nitin A. Pagedar, MD 2016-2019
Aru Panwar, MD 2016-2019
Perminder Parmar, MD 2017-2020
Jeremy Richmon, MD 2017-2020
Benjamin R. Roman, MD 2016-2019
William Charles Spanos, MD 2017-2020
Kerstin M. Stenson, MD 2017-2020
Victoria Meucci Villaflor, MD 2016-2018
Joshua Waltonen, MD 2015-2018
John W. Werning, MD, DMD 2015-2018
Mark Zafereo, MD 2015-2018

Fellowship Training, Accreditation & Credentialing Task Force

Terry A. Day, MD, Chair 2016-2018
Ara A. Chalian, MD 2016-2018
Neal D. Futran, MD, DMD 2016-2018
Douglas A. Girod, MD 2016-2018
Cherie-Ann O. Nathan, MD 2016-2018
Randal S. Weber, MD 2016-2018
Donald T. Weed, MD 2016-2018

Website Committee

Snehal G. Patel, MD, FRCS, Chair 2013-2018
Karen T. Pitman, MD, Ex Officio 2016-2019
Rizwan Aslam, DO 2017-2020
Joseph M. Curry, MD 2016-2019
Ivan El-Sayed, MD 2015-2018
Robert A. Frankenthaler, MD 2016-2019
Joseph Blake Golden, MD 2015-2018
David Goldenberg, MD 2017-2020
David Goldstein, MD, FRCSC 2017-2020
Mark J. Jameson, MD, PhD 2015-2018
Arjun Joshi, MD 2016-2019
Wojciech K. Mydlarz, MD 2017-2020
Karen T. Pitman, MD, Ex Officio 2016-2019
Rahul Seth 2016-2019
Mark G. Shrime, MD, MPH, PhD 2016-2019
William Charles Spanos, MD 2017-2020
Paul C. Walker 2017-2020
Jeffrey S. Wolf, MD 2016-2019
Mike Yao, MD 2015-2018

Women in AHNS Committee

Amy Y. Chen, MD, MPH, Chair 2014-2020
Trinitia Y. Cannon, MD 2016-2019
Carole Fakhry, MD, MPH 2015-2018
Tanya Fancy, MD 2017-2020
Pardis Javadi 2017-2020
Alexandra Kejner, MD 2017-2020
Sobia Khaja, MD 2017-2020
Yekaterina A. Koshkareva, 2016-2019
Miriam Lango, MD 2017-2020
Amy Anne Donatelli Lassig, MD, BA 2015-2018
Kelly Michele Malloy, MD 2016-2019
Becky Lynn Massey, MD 2015-2018
Jessica Hooton Maxwell, MD, MPH 2017-2020
Caitlin McMullen 2017-2020
Melonie Adia Nance, MD 2017-2020
Elizabeth Anne Nicolli, MD 2016-2019
Miriam A. O'Leary 2017-2020
Kavita Pattani, MD, MS 2017-2020
Eileen Raynor, MD 2015-2018
Nicole Schmitt, MD 2017-2020
Merry E. Sebelik, MD 2017-2020
Catherine Fiona Sinclair, MD, FRACS 2015-2018
Shirley Y. Su, MBBS 2017-2020
Giovana R. Thomas, MD 2017-2020
Ozlem Emine Tulunay, MD 2015-2018
Victoria Meucci Villaflor, MD 2015-2018

AHNS Leadership

REPRESENTATIVES

AAO-HNSF Board of Governors
Ehab Y. Hanna, MD 2017-2020

AAO-HNSF Legislative Liaison
Jeffery Scott Magnuson, MD 2015-2018

AAO-HNSF BOG Socioeconomic & Grassroots Representative
Scharukh Jalisi, MD 2017-2020

American College of Surgeons Board of Governors
Theodoros N. Teknos, MD 2015-2018

ASC Board of Governors – Advisory Council for Otolaryngology
Ellie Maghami, MD 2015-2018
Theodoros N. Teknos, MD 2015-2018

American College of Surgeons Commission on Cancer
Brian Andrew Moore, MD 2017-2020

AHNS Leadership

Past Presidents

The American Head and Neck Society:

Jeffrey N. Myers, MD, PhD	(2017)	Randal S. Weber, MD	(2007)
Dennis Kraus, MD	(2016)	John J. Coleman, III, MD	(2006)
Douglas A. Girod	(2015)	Patrick J. Gullane, MD	(2005)
Terry A. Day, MD	(2014)	Jonas T. Johnson, MD	(2004)
Mark K. Wax, MD	(2013)	Paul A. Levine, MD	(2003)
Carol R. Bradford, MD	(2012)	Keith S. Heller, MD	(2002)
David W. Eisele, MD	(2011)	Ernest A. Weymuller, Jr., MD	(2001)
John A. Ridge, MD	(2010)	Jesus E. Medina, MD	(2000)
Wayne M. Koch, MD	(2009)	Ashok R. Shaha, MD	(1999)
Gregory T. Wolf, MD	(2008)	K. Thomas Robbins, MD	(1999)

The American Society for Head and Neck Surgery:

Dale H. Rice, MD	(1997-98)	J. Ryan Chandler, MD*	(1980-81)
Nicholas J. Cassisi, MD	(1996-97)	Loring W. Pratt, MD	(1979-80)
Charles W. Cummings, MD	(1995-96)	William M. Trible, MD*	(1978-79)
Gary L. Schechter, MD	(1994-95)	John A. Kirchner, MD	(1977-78)
James Y. Suen, MD	(1993-94)	George F. Reed, MD*	(1976-77)
Bryon J. Bailey, MD	(1992-93)	Emanuel M. Skolnick, MD*	(1975-76)
Michael E. Johns, MD	(1991-92)	Daniel Miller, MD*	(1974-75)
Helmuth Goepfert, MD	(1990-91)	Charles M. Norris, MD*	(1973-74)
Willard N. Fee, Jr., MD	(1989-90)	Edwin W. Cocke, Jr., MD*	(1972-73)
Eugene N. Myers, MD	(1988-89)	Burton J. Soboroff, MD*	(1971-72)
Charles J. Krause, MD	(1987-88)	John S. Lewis, MD*	(1970-71)
John M. Lore, Jr., MD*	(1986-87)	George A. Sisson, MD*	(1969-70)
Robert W. Cantrell, MD	(1985-86)	W. Franklin Keim, MD*	(1967-69)
Hugh F. Biller, MD	(1984-85)	John F. Daly, MD*	(1965-67)
Paul H. Ward, MD	(1983-84)	Joseph H. Ogura, MD*	(1963-65)
Jerome C. Goldstein, MD	(1982-83)	Paul H. Holinger, MD*	(1961-63)
Douglas B. Bryce, MD*	(1981-82)	John J. Conley, MD*	(1959-61)

The Society of Head and Neck Surgeons:

Ronald H. Spiro, MD	(1998)	Donald P. Shedd, MD	(1977)
John R. Saunders, Jr., MD	(1997)	Condict Moore, MD	(1976)
Robert M. Byers, MD	(1996)	Richard H. Jesse, MD*	(1975)
Michael B. Flynn, MD	(1995)	Alfred Ketcham, MD	(1974)
J. Edward M. Young, MD	(1994)	Robin Anderson, MD*	(1973)
Stephen Ariyan, MD	(1993)	Charles C. Harrold, MD*	(1972)
Oscar Guillamondegui, MD	(1992)	Harvey W. Baker, MD*	(1971)
Jatin P. Shah, MD	(1991)	Ralph R. Braund, MD*	(1970)
M.J. Jurkiewicz, MD	(1990)	William S. MacComb, MD*	(1969)
James T. Helsper, MD*	(1989)	Arthur G. James, MD*	(1968)
Robert D. Harwick, MD	(1988)	Oilver H. Beahrs, MD*	(1967)
William R. Nelson, MD*	(1987)	Edgar L. Frazell, MD*	(1966)
Frank C. Marchetta, MD*	(1986)	Harry W. Southwick, MD*	(1965)
Alando J. Ballantyne, MD*	(1985)	Calvin T. Kloop, MD*	(1964)
Darrell A. Jaques, MD	(1984)	H. Mason Morfit, MD*	(1962-63)
Alvin L. Watne, MD	(1983)	Arnold J. Kremen, MD	(1960-61)
John M. Moore, MD	(1982)	Danely P. Slaughter, MD*	(1959)
Elliot W. Strong, MD	(1981)	Grant Ward, MD *	(1958)
Robert G. Chambers, M.D.*	(1980)	Hayes Martin, MD*	(1954-1957)
John C. Gaisford, MD	(1979)		
William A. Maddox, MD	(1978)	*Deceased	

AHNS Education and Research Foundation

The Research and Education Foundation of the American Head and Neck Society extends a special thank you to our 2017 Centurion Club* members for their generous donations of $1,000 or more:

Richard Bell
Elizabeth Blair
Carol Bradford
Robert Byers
Bruce Campbell
David Cognetti
Daniel Deschler
Umamaheswar Duvvuri
Donald Gregory Farwell
Robert Ferris
Neil Futran
Douglas Girod
Babak Givi
Jonathan Irish
John Iyanrick
Gina Jefferson
Luiz Kowalski
Dennis Kraus
Pierre Lavertu
William Lydiatt
Eugene Myers
Jeffrey Myers
Melonie Nance
Raghu Nathan
Andrew Nemecheck
Bert O'Malley
Nitin Pagedar
Chris Rassekh
John Drew Ridge
James Rocco
William Ryan
John Saunders
William Spanos
Kerstin Stenson
David Terris
Marlene Wang
Tamara Watts
Mark Wax
Mark Zafereo

*List as of April 2, 2018

CME Worksheet

This is not your CME credit form. Please use the worksheet below to track the number of CME hours you attend for each activity. Fill in the number of hours you attended each activity in the chart below to track your CME credits.

WEDNESDAY, APRIL 18, 2018			
Time	**Activity**	**Credits Available**	**Hours Attended**
8:15 am - 9:00 am	**John Conley Lecture: "Stages of Head and Neck Cancer over the Passage of Time"**	0.75	
9:05 am - 10:00 am	**Panel 1: Implications of AJCC Staging Changes on Clinical Care: The Unknown Primary and Oropharyngeal Cancer**	1.0	
	Scientific Session 1: Technology		
10:30 am - 11:25 am	**Scientific Session 2: Reconstruction and Rehabilitation**	1.0	
	Panel 2: Implementing a Quality Program that Actually Improves Quality		
11:30 am - 12:25 pm	**Scientific Session 3: Immunotherapy and Adjuvant Therapies**	1.0	
	Rapid Fire Session 1: Choosing Wisely/ Evidence-Based		
1:30 pm - 2:15 pm	**Keynote Lecture: "Transforming Empathy to Empowerment: The 2017 Invictus Games & Lessons for Growing Cancer Awareness and Research"**	.75	
2:20 pm - 3:10 pm	**Scientific Session 4: Thyroid**	.75	
	Scientific Session 5: Larynx/Pharynx		
3:40 pm - 4:40 pm	**Panel 3: Thyroid Nodule Best Practices and Outcome Optimization**	1.0	
	Scientific Session 6: Survivorship		
4:50 pm - 5:50 pm	**Panel 4: Best Practices and Optimizing Outcomes in Parathyroid Disease**	1.0	
	Panel 5: Sinonasal Malignancies		
Total Credits Available for Wednesday, April 18, 2018:		**7.25**	
THURSDAY, APRIL 19, 2018			
7:30 am - 8:25 am	**Panel 6: Reconstruction - Cutting guides vs. Cutting Costs: The value of 3D modeling and Virtual Surgical Planning**	1.0	
	Scientific Session 7: Skin Cancer		
8:30 am - 9:15 am	**Hayes Martin Lecture: Connecting Health Systems Research and Health System Improvement. The Role of Governance and Policy**	0.75	
10:00 am - 11:00 am	**Presidential Address: Reflections**	1.0	
11:00 am - 12:00 pm	**Jatin P. Shah Symposium: Personalized Medicine - Can We Afford It?**	1.0	
1:00 pm - 1:55 pm	**Panel 7: Focus on Function: Maximizing Survivorship and Quality of Life After Treatment**	1.0	
	Scientific Session 8: Best Papers of AHNS 2018		
2:00 pm - 3:00 pm	**Scientific Session 9: Oral Cavity**	1.0	
	Rapid Fire 2: Choosing Wisely and Evidence-based		
3:30 pm - 4:30 pm	**Panel 8: Advances in Skin Cancer Management**	1.0	
	Scientific Session 10: Quality Engineering and Pathways		
4:30 pm - 5:15 pm	**Panel 9: The Importance of Gender Equality in Lifting All Boats**	0.75	
	Panel 10: Head and Neck Cancer Cooperative Group Clinical Trials: Updates and New Trial Concepts		
Total Credits Available for Thursday, April 19, 2018:		**7.5**	
TOTAL CREDITS AVAILABLE:		**14.75**	

AHNS Accreditation

To receive your CME credit:
AHNS has instituted a process for claiming CME credits and printing certificates. All attendees wishing to receive a CME certificate for activities attended at the AHNS 2018 Annual Meeting must first complete an on-line meeting evaluation form. Please complete the evaluation here: https://www.research.net/r/AHNS2018

Accreditation Statement

The American Head & Neck Society (AHNS) is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

Credit Designation Statement

The AHNS designates this live activity for a maximum of **14.75 AMA PRA Category 1 Credit(s)™**. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Questions?

Comments?

Join the conversation behind the scenes ...

Tweet!

#AHNS2018

Follow us @AHNSinfo

Commercial Bias Reporting Form

You are encouraged to …

1) Document (on this form) any concerns about commercially-biased presentations/materials during educational sessions,
2) Make suggestions about how bias might have been avoided/ minimized, and
3) Immediately take your completed form to the AHNS staff at the Registration Desk

Your feedback will be shared with a member of the CME Compliance Committee, who will make the faculty aware of the concerns and/or suggestions.

Commercial Bias

The AHNS CME Compliance Committee has defined "bias" as a*n existing predisposition that may interfere with objectivity in judgment. Bias may be minimized through prior declaration of any source of conflict of interest, reference to evidence-based literature and expert opinions, and/or an independent peer-review process.*

If an educational presentation certified for CME includes bias of any commercial interests*, please provide the following details:

*(*Commercial interest is defined by the ACCME as an entity producing, marketing, re-selling, or distributing health care goods or services consumed by, or used on, patients.)*

Presentation:	**Commercial Bias by:**	**Promotion via:**
(eg session name, etc)	(ie faculty name, company rep)	(eg handouts, slides, what they said, actions)

Commercial Bias about:

(check all that apply)

___ Patient treatment/management recommendations were not based on strongest levels of evidence available.

___ Emphasis was placed on one drug or device versus competing therapies, and no evidence was provided to support its increased safety and/or efficacy.

___ Trade/brand names were used.

___ Trade names versus generics were used for *all* therapies discussed.

___ The activity was funded by industry and I perceived a bias toward the grantors.

___ The faculty member had a disclosure and I perceived a bias toward the companies with which he/she has relationships.

___ Other (please describe): _____

_____

_____

Suggestions for avoiding or minimizing bias:

_____

_____

_____

Extra Copies Are Available at the AHNS Desk

Please return this form to the AHNS Desk, email it to christines@ahns.info, or mail it to:

AHNS CME, 11300 W. Olympic Blvd, Suite 600, Los Angeles, CA 90064

Wednesday, April 18, 2018

7:00 am - 7:55 am **The American Head and Neck Society 2.0: Society Re-Organization and Restructuring** Maryland A1-3

Presented by Brian B. Burkey, MD, MEd; Ehab Y. Hanna, MD; Jonathan Irish, MD, MSc, FRCSC; Dennis Kraus, MD; and Cherie-Ann Nathan, MD

8:00 am - 8:15 am **Welcome and Recognition of Guest of Honor** Maryland A1-3

Opening Remarks and Guest of Honor - Jonathan Irish, MD, MSc, FRCSC

Introduction of the Program - D. Gregory Farwell, MD, FACS and Danny Enepekides, MD, FRCS

8:15 am - 9:00 am **John Conley Lecture: *Stages of Head and Neck Cancer Over the Passage of Time*** Maryland A1-3

Brian O'Sullivan, MD

Introduction by: Jonathan Irish, MD, MSc, FRCSC

9:05 am - 10:00 am **Panel 1: Implications of AJCC Staging Changes on Clinical Care: The Unknown Primary and Oropharyngeal Cancer** Maryland A1-3

Session Chair: William Lydiatt, MD, EMBA

The 8th Editions of the AJCC and the UICC Cancer Staging Manuals introduced significant changes to better assess and describe head and neck cancers associated with the human papilloma virus. This session will provide background on the rationale for the systems and work through examples to highlight key aspects of staging.

Why We Stage Cancers - William Lydiatt, MD, EMBA

Critical Shortcomings of the 7th Edition Staging of HPV Associated Oropharyngeal Cancers - Jose Zevallos MD, MPH

The Case that HPV Associated OPC is a Novel Disease - Carole Fakhry MD, MPH

The Basis for the 8th Edition Clinical Staging - Brian O'Sullivan MD

pTNM Refines Prognosis in Surgically Treated Patients - William Lydiatt MD, EMBA

Why p16 not HPV and Case Presentations with Commentary - Umamaheswar Duvvuri MD, PhD

LEARNING OBJECTIVES:

At the conclusion of this session, participants will be able to:

- Articulate the rationale for the AJCC/UICC HPV associated oropharyngeal and unknown primary cancer staging system.
- Implement the staging of HPV associated oropharyngeal and unknown primary cancers of the head and neck.
- Select the proper AJCC stage for their patient with p16+ oropharyngeal cancer.

Scientific Program — Wednesday, April 18, 2018

9:05 am - 10:00 am Scientific Session 1: Technology — Maryland C

Moderators: Sobia Khaja, MD, Daniel Knott, MD, and Maie St. John, MD, PhD

AHNS001: COMPUTER VISION USING HYPERSPECTRAL IMAGING & MACHINE LEARNING TO CLASSIFY TUMOR, MARGIN, AND SOFT-TISSUES OF THE HEAD AND NECK Shamik Mascharak[1], Alex Hegyi, PhD[2], F. Christopher Holsinger, MD[1]; [1]Stanford University, [2]Electronic Materials and Devices Laboratory, Palo Alto Research Center

AHNS002: EARLY RESULTS OF METHYLATION MARKERS WITH DIGITAL DROPLET PCR FOR THE EARLY DETECTION OF HEAD AND NECK SQUAMOUS CELL CARCINOMA Jason Chan, Sherwood Fung, Cherrie Ng, Eddy Wong, Avis Shiu, Jacky W Lam, Allen K Chan; The Chinese University of Hong Kong

AHNS003: USE OF TRANSCERVICAL ULTRASOUND FOR IDENTIFICATION OF PRIMARY SITE IN PATIENTS WITH OROPHARYNGEAL CANCER C. Burton Wood, MD[1], Sarah L Rohde, MD[1], Robert Sinard, MD[1], Kyle Mannion, MD[1], Alexander Langerman, MD, SM[1], Young J Kim, MD, PhD[1], Joseph Aulino, MD, PhD[1], Derek K Smith, DDS, PhD[1], Arthur Fleischer, MD[1], Carole Fakhry, MD, MPH[2], James L Netterville, MD[1], Krystle L Kuhs, PhD, MPH[1]; [1]Vanderbilt University Medical Center, [2]Johns Hopkins University

Discussion

AHNS066: THE LEARNING CURVE FOR TRANSORAL ENDOSCOPIC THYROID LOBECTOMY. Christopher R Razavi, MD, Jonathon O Russell, MD; Department of Otolaryngology – Head and Neck Surgery, Johns Hopkins University School of Medicine

AHNS004: A NOVEL FLEXIBLE ROBOT FOR THE TREATMENT OF OROPHARYNGEAL CARCINOMA IN TRANSORAL ROBOTIC SURGERY Jason Chan1, Raymon Tsang2, F C Holsinger3, Eddy Wong1; 1The Chinese University of Hong Kong, 2The University of Hong Kong, 3Stanford University

AHNS005: COMBINING FLUORESCENCE IMAGING WITH TRANSORAL ROBOTIC SURGERY TO IMPROVE HEAD AND NECK CANCER DETECTION Larissa Sweeny1, Lindsay S Moore1, Andrew Prince1, Jason M. Warram1, Kirk Withrow1, William Carroll1, Eben L. Rosenthal2; 1University of Alabama at Birmingham, 2Stanford

AHNS006: USING A FLUORESCENT CONTRAST AGENT TO ASSESS SURGICAL MARGINS IN HEAD AND NECK CANCER RESECTIONS Rebecca W Gao, MS[1], Tarn Teraphongphom, PhD[2], Nynke S van den Berg, PhD[2], Steven Hong, MD[2], Brock Martin, MD[3], Michael J Kaplan, MD[2], Vasu Divi, MD[2], Nicholas Oberhelman, BS[2], Robert Ertsey[2], Christina S Kong, MD[3], A. Dimitrios Colevas, MD[4], Eben L Rosenthal, MD[2]; [1]Stanford School of Medicine, [2]Department of Otolaryngology - Head and Neck Surgery, Stanford University, [3]Department of Pathology, Stanford University, [4]Division of Oncology, Department of Medicine, Stanford University

Discussion

10:00 am - 10:30 am Morning Break — Maryland Foyer

10:30 am - 11:25 am **Scientific Session 2: Reconstruction and Rehabilitation** Maryland A1-3

Moderators: Scharukh Jalisi, MD, Rahul Seth, MD, and Marita Teng, MD

AHNS007: NATIONAL VARIATIONS IN FIBULA FREE FLAPS AND THE ROLE OF INSTITUTIONAL VOLUME IN COSTS AND SURGICAL COMPLICATION RATES Rance J Fujiwara, BS, Elliot Morse, BS, Saral Mehra, MD, MBA; Yale University School of Medicine

AHNS008: CELECOXIB DECREASES ACUTE POSTOPERATIVE OPIOID REQUIREMENTS AFTER HEAD AND NECK RECONSTRUCTION WITH FREE TISSUE TRANSFER: A MATCHED-COHORT STUDY Patrick Carpenter, MD, Hilary McCrary, MD, Vanessa Torrecillas, MD, Amanda Kull, MD, Jason P Hunt, MD, Marcus M Monroe, MD, Luke O Buchmann, MD, Richard B Cannon, MD; University of Utah

AHNS009: INFRAHYOID FLAP FOR RECONSTRUCTION OF HEAD AND NECK DEFECTS Marianne Nakai, MD, Juliana Maria de Almeida Vital, MD, Marcelo Benedito Menezes, PhD, William Kikuchi, MD, Antonio Jose Goncalves, PhD; Irmandade da Santa Casa de Misericórdia de São Paulo

Discussion

AHNS010: PATTERNS OF LOSS OF VENOUS FLOW IN HEAD AND NECK MICROVASCULAR SURGERY WITH DOUBLE VENOUS ANASTOMOSES Elliot Morse, BS, Rance Fujiwara, BS, Jacqueline Dibble, APRN, Matthew Pierce, MD, Saral Mehra, MD, MBA; Yale University, Department of Surgery, Division of Otolaryngology

AHNS011: FRAILTY AS A PREDICTOR OF MORBIDITY AND MORTALITY IN MICROVASCULAR RECONSTRUCTIVE HEAD AND NECK PATIENTS Kelly F Moyer, Shaum S Sridharan; Medstar Georgetown University Hospital

AHNS012: MANDIBULAR RECONSTRUCTION WITH THE TIP OF SCAPULA FREE FLAP Jeffrey Blumberg, MD[1], Paul Walker, MD[2], Stephanie Johnson-Obaseki, MD[3], Christopher Yao, MD[4], Eugene Yu, MD[4], Marie-Constance Lacasse, MD[4], Stephanie Johnson-Obaseki, MD[3], David Lam, MD, DDS, PHD[4], Brian Rittenberg, DDS[5], Douglas Chepeha, MD[4], John de Almeida, MD[4], David Goldstein, MD[4], Ralph Gilbert, MD[4]; [1]University of North Carolina at Chapel Hill, [2]Loma Linda University, [3]University of Ottawa, [4]University of Toronto, [5]Mount Sinai Hospital, Toronto, ON

Discussion

10:30 am - 11:25 am **Panel 2: Implementing a Quality Program that Actually Improves Quality** Maryland C

Session Chair: Christine G. Gourin, MD

Examples of quality reporting programs from a diverse groups of institutions will be presented and the strengths and limitations of both addressed by experts in the field.

Introduction - Christine Gourin, MD, MPH

Implementing a NSQIP-based Quality Program - Carol Lewis, MD, MPH

Quality Improvement and Implementation – The Kaiser-Permanente Experience - Charles Meltzer, MD

Implementing High-Value Care Performance Improvement - Lisa Ishii, MD, MHS

Question and Answer – All Speakers

LEARNING OBJECTIVES:

At the conclusion of this session, participants will be able to:

- Describe 3 quality measurement programs currently in use.
- Identify a program that can be used to measure quality in their own practice.
- Recognize how quality measurement can improve patient outcomes.

11:30 am - 12:25 pm **Rapid Fire Session 1: Choosing Wisely and Evidence-Based** Maryland A1-3

Session Chairs: Vikas Mehta, MD & Richard J. Wong, MD

This session will use a series of lectures to address clinical questions with evidenced based answers in a high-yield, rapid format. Each lecture will also be accompanied with a case-based question that will involve a web-based, real-time audience response system in an effort to keep the session more interactive.

Perioperative Antibiotics in Head and Neck Cancer Patients: Who, When, and For How Long? - Jimmy J. Brown, MD

Prophylactic Management of the Neck in Early Oral Cancer - Amy C. Hessel, MD

Imaging After Head and Neck Cancer Treatment: What Modality? When? And for How Long? - Larry L. Myers, MD

What are the Guidelines for Follow-up of Patients After Head and Neck Cancer Treatment - Liana Puscas, MD

Imaging for the Unknown Primary - Eugene Yu, MD

LEARNING OBJECTIVES:

At the conclusion of this session, participants will be able to:

- Identify the level of evidence supporting the speakers position on their assigned topic.
- Evaluate how this evidence can be applied to their own practice.
- Use the knowledge gained through the high-yield, interactive sessions.

11:30 am - 12:25 pm **Scientific Session 3: Immunotherapy and Adjuvant Therapies** Maryland C

Moderators: Ellie Maghami, MD and Jonathan Mark, MD

AHNS013: ADJUVANT RADIATION FOR POSITIVE MARGINS IN ADULT H&N SARCOMAS IS ASSOCIATED WITH IMPROVED SURVIVAL: ANALYSIS OF THE NATIONAL CANCER DATABASE
Richard B Cannon, MD, Patrick Carpenter, MD, Amanda J Kull, MD, Sam Francis, MD, Luke O Buchmann, MD, Jason P Hunt, MD, Shane Lloyd, MD, Ying J Hitchcock, MD, John R Weis, MD, Marcus M Monroe, MD; University of Utah

AHNS014: PD-L1 MAY SERVE AS A PROGNOSTIC BIOMARKER IN HPV-ASSOCIATED HEAD AND NECK CANCER PATIENTS Austin K Mattox[1], Francesco Sabbatino[2], Vincenzo Villani[2], Soldano Ferrone[2], William C Faquin[3], Hang Lee[4], Jill Brooks[5], Armida Lefranc-Torres[6], Derrick T Lin[6], Lori J Wirth[7], Christopher C McConkey[8], Hisham Mehanna[5], Sara I Pai[2]; [1]Department of Oncology, Johns Hopkins University School of Medicine, Baltimore, MD, [2]Department of Surgery, Massachusetts General Hospital, Harvard Medical School,

Boston, MA, [3]Department of Pathology, Massachusetts General Hospital, Harvard Medical School, Boston, MA, [4]Biostatistics Center, Massachusetts General Hospital, Harvard Medical School, Boston, MA, [5]Institute of Head and Neck Studies and Education (InHANSE), University of Birmingham, UK, [6]Department of Otology and Laryngology, Massachusetts Eye and Ear Infirmary, Boston, MA, [7]Department of Medical Oncology, Dana-Farber Cancer Institute, Harvard Medical School, Boston, MA, [8]Warwick Clinical Trials Unit, University of Warwick, UK

AHNS015: THE ADDITION OF CHEMOTHERAPY TO THE ADJUVANT THERAPY OF LATE-STAGE SALIVARY SQUAMOUS CELL CARCINOMA IS ASSOCIATED WITH IMPROVED PATIENT SURVIVAL
Shayan Cheraghlou, BA, Cheryl K Zogg, MSPH, MHS, Michael D Otremba, MD, Henry S Park, MD, MPH, Aarti Bhatia, MD, MPH, Saral Mehra, MD, MBA, Heather A Osborn, MD, Wendell G Yarbrough, MD, Benjamin L Judson, MD; Yale Medical School

Discussion

AHNS016: ADJUVANT RADIATION FOR T1-2N1M0 ORAL CAVITY CANCER IS ASSOCIATED WITH IMPROVED SURVIVAL OUTCOMES: ANALYSIS OF THE SEER DATABASE
Richard B Cannon, MD, Hailey M Shepherd, BS, Vanessa Torrecillas, MD, Patrick Carpenter, MD, Sam Francis, MD, Luke O Buchmann, MD, Marcus M Monroe, MD, Shane Lloyd, MD, Donald Cannon, MD, Ying J Hitchcock, MD, John R Weis, MD, Jason P Hunt, MD; University of Utah

AHNS017: DOES PERIOPERATIVE OXANDROLONE IMPROVE NUTRITIONAL STATUS IN PATIENTS WITH CACHEXIA RELATED TO HEAD AND NECK CARCINOMA?
Angela M Osmolak, MD, Cristine Klatt-Lasso, MD, Amber Price, MD, Jose A Sanclement, MD, Greg A Krempl, MD; University of Oklahoma Health Science Center

AHNS018: LONGITUDINAL IMMUNE COMPLEXITY ANALYSIS USING 29-BIOMARKER MULTIPLEX IMMUNOHISTOCHEMISTRY IN PRIMARY AND RECURRENT HEAD AND NECK SQUAMOUS CELL CARCINOMA
Grace L Banik, MD[1], Rie Kawashima, DDS, PhD[2], Tiziana Cotechini, PhD[2], Sara I Pai, MD, PhD[3], Armida LeFranc-Torres[4], Derrick T Lin, MD[4], Lori J Wirth, MD[5], Daniel R Clayburgh, MD, PhD[6], Lisa M Coussens, PhD[7], Takahiro Tsujikawa, MD, PhD[8]; [1]Department of Otolaryngology-Head and Neck Surgery, Oregon Health and Science University, [2]Department of Cell, Developmental and Cancer Biology, Oregon Health and Science University, [3]Department of Surgery, Massachusetts General Hospital, Harvard University, [4]Department of Otolaryngology, Massachusetts Eye and Ear Infirmary, [5]Department of Medicine, Massachusetts General Hospital, Harvard University, [6]Department of Otolaryngology-Head and Neck Surgery, Oregon Health and Science University; Knight Cancer Institute, Oregon Health and Science University, [7]Department of Cell, Developmental and Cancer Biology, Oregon Health and Science University; Knight Cancer Institute, Oregon Health and Science University, [8]Department of Otolaryngology-Head and Neck Surgery, Oregon Health and Science University; Department of Cell, Developmental and Cancer Biology, Oregon Health and Science University; Knight Cancer Institute, Oregon Health and Science University; Department of Otolaryngology, Head and Neck Surgery, Kyoto Prefectural University of Medicine

Discussion

12:30 pm - 1:30 pm **AHNS Business Meeting – Members Only** Maryland A1-3

OR

Lunch on Own

Scientific Program — Wednesday, April 18, 2018

1:30 pm - 2:15 pm **Keynote Lecture:** Maryland A1-3

Transforming Empathy to Empowerment: The 2017 Invictus Games & Lessons for Growing Cancer Awareness and Research

Michael Burns, President & CEO

Introduction by: Jonathan Irish, MD, MSc, FRCSC

Michael Burns has been in the news a lot lately. As CEO of the Invictus Games Toronto 2017, he spearheaded its recent success. He has recently taken on a new role: as President and CEO of The Princess Margaret Cancer Foundation, one of the largest foundations in Canada. His track record of success includes having been Chair of the Michael Garron Hospital Foundation Board and Co-founder of the True Patriot Love Foundation. Michael's dedication to helping others is personal; his drive to support veterans and military families was prompted by the death of his friend's son, who was killed by a roadside bomb in Afghanistan. He will share with you the story behind the success and lessons of the Invictus Games and how they can translate into growing awareness and support for cancer research.

2:20 pm - 3:10 pm **Scientific Session 4: Thyroid** Maryland A1-3

Moderators: Lisa Orloff, MD and Nitin Pagedar, MD

AHNS019: VOICE OUTCOMES FOLLOWING SURGERY FOR THYROID CANCER Kevin J Kovatch, MD[1], David Reyes-Gastelum, PhD[2], David T Hughes, MD[3], Ann S Hamilton, PhD[4], Kevin Ward, PhD, MPH[5], Megan R Haymart, MD[2]; [1]University of Michigan, Department of Otolaryngology-Head and Neck Surgery, [2]University of Michigan, Department of Metabolism, Endocrinology, and Diabetes, [3]University of Michigan, Department of General Surgery, [4]Keck School of Medicine, University of Southern California, Department of Preventive Medicine, [5]Emory University, Department of Epidemioloy

AHNS020: UTILITY OF INTRAOPERATIVE FROZEN SECTION IN LARGE THYROID NODULES Craig A Bollig, MD, Jeffrey B Jorgensen, MD, Robert P Zitsch, III, MD, Laura M Dooley, MD; University of Missouri Dept. of Otolaryngology Head and Neck Surgery

AHNS021: TRENDS IN OPIOD PRESCRIBING PRACTICES AFTER ENDOCRINE SURGERY Lauren B Moneta, MD, Enrique Leon, BA, Maisie Shindo, MD; Oregon Health & Science University

Discussion

AHNS067: PARATHYROID HORMONE LEVEL ALONE IS MOST ACCURATE PREDICTOR OF INTRAVENOUS CALCIUM ADMINISTRATION AFTER THYROIDECTOMY Catherine Frenkel, MD[1], Anthony Ferrara, MD[2], Jie Yang, PhD[2], Jihye Park[2], Ghassan Samara, MD[2]; [1]University of Pennsylvania, [2]Stony Brook Medicine

AHNS023: A PRACTICAL METHOD TO PREDICT THE SEVERITY OF HYPOCALCEMIA AFTER PARATHYROIDECTOMY FOR PRIMARY HYPERPARATHYROIDISM Changxing Liu, MD, PhD, Liyang Tang, MD, Tamara Chambers, MD, Niels Kokot, MD, Uttam Sinha, Dennis Maceri; USC Tina and Rick Caruso Department of Otolaryngology-Head and Neck Surgery, Keck Medicine of USC, University of Southern California

AHNS024: THE POST-THYROIDECTOMY VOICE: THE DISCONNECT BETWEEN PATIENT-PERCEIVED VOICE CHANGES AND OBJECTIVE VOICE MEASURES IN THE FIRST POSTOPERATIVE YEAR Heidi Kletzien, MS[1], Cameron L Macdonald, PhD[2], Jason Orne, PhD[3], David O Francis, MD, MS[1], Glen Leverson, PhD[1], Elizabeth Wendt, MPH[1], Rebecca S Sippel, MD[1], Nadine P Connor, PhD[1]; [1]University of WIsconsin-Madison, [2]Qualitative Health Research Consultants, [3]Drexel University

Discussion

2:20 pm - 3:10 pm **Scientific Session 5: Larynx/Pharynx** Maryland C

Moderators: Amit Agrawal, MD, Susan McCammon, MD, and Shawn Newlands, MD, PhD

AHNS025: STAGING HPV-RELATED OROPHARYNGEAL CANCER: VALIDATION OF AJCC 8 IN A SURGICAL COHORT Mathew Geltzeiler, MD[1], William G Albergotti[2], John Gleysteen, MD[1], Marnie Bertolet[2], Michael Persky, MD[2], Neil D Gross, MD[3], Ryan Li, MD[1], Peter Andersen, MD[1], Seungwon Kim, MD[2], Robert L Ferris[2], Umamaheswar Duvvuri[2], Daniel Clayburgh, MD[1]; [1]Oregon Health & Science University, [2]University of Pittsburgh Medical Center, [3]MD Anderson Cancer Center

AHNS026: TOWARDS A TUMOR-SPECIFIC DE-INTENSIFICATION STRATEGY IN OROPHARYNGEAL SQUAMOUS CELL CARCINOMAS: USING TUMOR IMMUNOPHENOTYPES TO PREDICT PATIENT OUTCOMES Wesley H Stepp, PhD[1], Douglas Farquhar, MD[1], Angela Mazul, PhD[1], Jose Zevallos, MD[2]; [1]University of North Carolina at Chapel Hill, [2]Washington University in St. Louis

AHNS027: ABNORMAL MICROVASCULATURE IN LARYNGECTOMY MUCOSAL MARGINS IDENTIFIED ON FROZEN SECTION IS ASSOCIATED WITH INCREASED RISK OF FISTULA Marianne Abouyared, MD, Darcy Kerr, MD, Brandon Burroway, Zoukaa Sargi, MD, MPH, Jason Leibowitz, MD; University of Miami Miller School of Medicine

Discussion

AHNS028: OCCULT CONTRALATERAL NODAL DISEASE IN OROPHARYNGEAL SQUAMOUS CELL CARCINOMA PATIENTS UNDERGOING PRIMARY TORS WITH BILATERAL NECK DISSECTION Caitlin McMullen, MD[1], Jonathan Garneau, MD[2], Emilie Weimar, MD[3], Sana Ali, MD[4], Joaquim Farinhas, MD, MBA[5], Eugene Yu, MD, FRCPC[3], Peter Som, MD[2], Cathy Sarta, RN[4], David Goldstein, MD, MSc, FRCSC[3], Susie Su, MSc[3], Wei Xu, PhD[3], Richard V Smith, MD[4], Brett Miles, MD, DDS[2], John de Almeida, MD, MSc, FRCSC[3]; [1]Moffitt Cancer Center, [2]Mount Sinai Hospital, [3]Princess Margaret Cancer Center, [4]Montefiore Medical Center, [5]Florida Hospital - Tampa

AHNS029: THE ROLE OF INTRAVENOUS ACETAMINOPHEN IN POST-OPERATIVE PAIN CONTROL IN HEAD AND NECK CANCER PATIENTS Erin J Smith, MD, MS[1], Jessica Lange, MD[2], Cindy Moore, MD[1], Lana Jackson, MD[1], Isaam Eid, MD[3], Jesus Monico, MPH, MS[1]; [1]University of Mississippi Medical Center, [2]Ear Nose and Throat Specialists, Lexington, Kentucky, [3]University of Kansas Medical Center

AHNS030: EFFECT OF TREATMENT MODALITY ON CHRONIC OPIOID USE IN PATIENTS WITH T1/T2 OROPHARYNGEAL CANCER Craig A Bollig, MD, Jeffrey B Jorgensen, MD; University of Missouri Dept. of Otolaryngology Head and Neck Surgery

Discussion

3:10 pm - 3:40 pm **Afternoon Break** Maryland Foyer

3:40 pm - 4:40 pm

Panel 3: Thyroid Nodule Best Practices and Outcome Optimization

Maryland A1-3

Session Chair: Michael C. Singer, MD

This panel will focus on the most current recommendations for the evaluation and management of patients with thyroid nodules and cancer. Cases will be used to highlight key clinical principles.

Evaluation and Management of Thyroid Nodules and Cancer - Michael C. Singer, MD

Panel Discussion and Case Presentations - William B. Armstrong, MD, Amy Y. Chen, MD, MPH, David Paul Goldstein, MD, FRCSC, Jacquie Jonklass, MD, PhD, MPH, Luc G.T. Morris, MD MSc, and Kevin Brumund, MD

LEARNING OBJECTIVES:

At the conclusion of this session, participants will be able to:

- Identify qualities of thyroid nodules that can stratify their risk for carcinoma.
- Plan the optimal management for thyroid microcarcinoma.
- Describe the appropriate utilization of molecular diagnostic tests in patients with thyroid nodules and cancer.

3:40 pm - 4:40 pm

Scientific Session 6: Survivorship

Maryland C

Moderators: Ehab Hanna, MD, Miriam Lango, MD, and Russell Smith, MD

AHNS031: BASELINE COGNITION ASSESSMENT AMONG OROPHARYNGEAL CANCER PATIENTS USING PROMIS AND NIH TOOLBOX Parul Sinha, MBBS, Alex Wong, PhD, Dorina Kallogjeri, MD, MPH, Jay F Piccirillo, MD, FACS; Washington University School of Medicine in St.Louis

AHNS032: CHRONIC OPIOID USE IN PATIENTS WITH OROPHARYNGEAL SQUAMOUS CELL CARCINOMA TREATED WITH RADIOTHERAPY Justin Dourado, Kathryn Hitchcock, MD, PhD, Peter Dziegielewski, MD, Brian Boyce, MD, Amy Fullerton, SLP, Kristianna Fredenburg, MD, PhD, Priya Gopalan, MD, PhD, Chris Morris, MS, Patrick Tighe, MD, MS, Roger Fillingim, PhD, Natalie Silver, MD, MS; University of Florida

AHNS033: IMPACT OF PATIENT SYMPTOMS ON CAREGIVER TASK BURDEN IN LOCALLY ADVANCED HEAD AND NECK CANCER Emily H Castellanos, MD[1], Mary Dietrich, PhD[2], Stewart M Bond, PhD, RN, AOCN[3], Karen Schumacher, PhD, RN[4], Nancy Wells, DNSc, RN, FAAN[2], Barbara A Murphy, MD[1]; [1]Vanderbilt University Medical Center, [2]Vanderbilt University School of Nursing, [3]Boston College Connell School of Nursing, [4]University of Nebraska Medical Center

AHNS034: RISK OF DEVELOPING NEW HEALTH DISORDERS FOLLOWING HEAD AND NECK CANCER TREATMENT VARIES SIGNIFICANTLY BY HEAD AND NECK CANCER SUBSITE: AN ANALYSIS OF THE UTAH HEAD AND NECK CANCER SURVIVOR'S STUDY Marcus M Monroe, MD[1], Sarah Abdelaziz[1], Jason Hunt[1], Luke Buchmann[1], Richard Cannon[1], Kerry Rowe[2], Shane Lloyd[1], Donald Cannon[1], Ying Hitchcock[1], John Snyder[2], Yuan Wan[1], Vikrant Deshmukh[1], Michael Newman[1], Alison Fraser[1], Ken Smith[1], Kim Herget[1], Mia Hashibe, PhD[1]; [1]University of Utah, [2]Intermountain Healthcare, Salt Lake City

Discussion

AHNS035: RACIAL DISPARITIES AND HPV STATUS IN OROPHARYNGEAL CANCER Nicholas Lenze, BS[1], Douglas R Farquhar, MD, MPH[1], Angela L Mazul, PhD, MPH[2], Maheer M Masood, BA[1], Jose P Zevallos, MD, MPH[3]; [1]Department of Otolaryngology/ Head and Neck Surgery, University of North Carolina at Chapel Hill School of Medicine, [2]Lineberger Comprehensive Cancer Center, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, [3]Department of Otolaryngology-Head and Neck Surgery, Washington University School of Medicine in St. Louis

AHNS036: GEOGRAPHIC DISTANCE TO TREATMENT IS NOT ASSOCIATED WITH OVERALL SURVIVAL Maheer Masood[1], Douglas Farquhar[1], Angela Mazul[1], Philip McDaniel[1], Trevor Hackman[1], Jose Zevallos[2], Andrew Olshan[1]; [1]University of North Carolina, [2]Washington University at St. Louis

AHNS037: NECK DISABILITY AND HEALTH-RELATED QUALITY OF LIFE AMONG HEAD AND NECK CANCER SURVIVORS FOLLOWING SURGICAL AND NON-SURGICAL TREATMENT Marci L Nilsen, PhD, RN[1], Leila J Mady, MD, PhD, MPH[2], Susan E George, PT, DPT, , MS[3], Debra Pickford, BSN, RN[4], Jonas T Johnson, MD, FACS[2]; [1]University of Pittsburgh, School of Nursing, [2]University of Pittsburgh, School of Medicine, [3]UPMC Centers for Rehab Services, [4]UPMC Department of Otolaryngology

AHNS038: SYMPTOM BURDEN ASSOCIATED WITH LATE LOWER CRANIAL NEUROPATHY IN LONG-TERM OROPHARYNGEAL CANCER SURVIVORS Puja Aggarwal, BDS, MPH, Jhankruti S Zaveri, MPH, Ryan P Goepfert, MD, G. Brandon Gunn, MD, Stephen Y Lai, MD, PhD, Clifton D Fuller, MD, PhD, Ehab Y Hanna, MD, David I Rosenthal, MD, Jan S Lewin, PhD, Katherine A Hutcheson, PhD; The University of Texas MD Anderson Cancer Center

Discussion

4:50 pm - 5:50 pm

Panel 4: Best Practices and Optimizing Outcomes in Parathyroid Disease

Maryland A1-3

Session Chair: Alfred A. Simental, MD

This session will use a case based, interactive format to present topics as it relates to the diagnosis, management, and surgical treatment of parathyroid diseases. Audience feedback and dialogue is encouraged to ensure participation and comprehension of the topics.

Diagnosis and Medical Management of Hyperparathyroidsm - Kenneth D. Burman, MD

Localization of Parathyroid Disease - Maisie Shindo, MD

Extent of Surgery for Hyperparathyroidism - Brendan C. Stack, MD

Ectopic Locations and Reoperative Hyperparathyroidism - David J. Terris, MD, FACE

Interactive Audience Session - Alfred A. Simental, MD

LEARNING OBJECTIVES:

At the conclusion of this session, participants will be able to:

- Articulate the common laboratory tests for the diagnosis of Hyperarathyroidism.
- Compare imaging strategies for localization of parathyroid disease.
- Suggest surgical strategies to treat Hyperparathyroidism.

4:50 pm - 5:50 pm **Panel 5: Sinonasal Malignancies** Maryland C

Session Chair: Ian J. Witterick, MD, MSc, FRCSC

This session will use a case based format to discuss treatment option for different sinonasal malignancies, managing the orbit, adjuvant therapies and the indications and contraindications for open and endoscopic surgical approaches. Areas of controversy and practice variation will be presented.

Introduction - Ian J. Witterick, MD, MSc, FRCSC

Treatment Based on Histopathology - Shirley Y. Su, MBBS

Endoscopic vs. Open Approaches: Indications and Contraindications - Michael G. Moore, MD

Managing the Orbit - Adam Zanation, MD

Adjuvant Therapies - Ehab Y. Hanna, MD

Interactive Case Discussion - Ian J. Witterick, MD, MSc, FRCSC

LEARNING OBJECTIVES:

At the conclusion of this session, participants will be able to:

- Distinguish the treatment options including adjuvant therapies for management of sinonasal malignancy based on histopathology.
- Differentiate the types of orbital invasion that may allow preservation of the orbit or necessitate sacrifice.
- Identify the indications and contraindications to endoscopic and open resection of sinonasal malignancies.

6:00 pm - 7:00 pm **Fellowship Information Session** Chesapeake C

Attend the fellowship information session and learn what fellowships are available and network with program directors.

6:00 pm - 7:00 pm **Endocrine Section Business Meeting** Maryland A1-3

7:00 pm - 8:00 pm **International Endocrine Meeting** Maryland A1-3

7:30 pm - 9:30 pm **Past Presidents' Dinner at Charlie Palmer Steakhouse - Invitation Only**

Thursday, April 19, 2018

6:30 am - 7:30 am **AHNS Networking Breakfast** Chesapeake 7-9

Sponsored by the Women in AHNS Committee, Diversity Task Force and Young Members Task Force

This event is a great networking event that will educate both non members and current members on the broad range of activities the AHNS is actively engaged in, including a focus on initiatives that support diversity and young members within the society. Learn how to become more involved in the AHNS and what paths are available for leadership advancement. Have direct access to some of the leaders in the head and neck surgical oncology field, as this informal breakfast will include opportunities to meet with the AHNS leadership.

7:30 am - 8:25 am **Scientific Session 7: Skin Cancer** Maryland A1-3

Moderators: Babak Givi, MD, Kevin McLoughlin Higgins, MD, FRCSC, and Aru Panwar, MD

AHNS039: THE IMPACT OF IMMUNOSUPPRESSION ON HEAD & NECK CUTANEOUS SQUAMOUS CELL CARCINOMA PROGNOSIS: A SYSTEMATIC REVIEW OF THE LITERATURE WITH META-ANALYSIS Alhasan N Elghouche, MD, MS, Zachary E Pflum, MD, Cecelia E Schmalbach, MD, MS, FACS; Indiana University School of Medicine, Department of Otolaryngology - Head & Neck Surgery

AHNS040: OUTCOMES OF BIOPSY TECHNIQUES PRIOR TO SENTINEL LYMPH NODE BIOPSY FOR PRIMARY CUTANEOUS MELANOMA OF THE HEAD AND NECK Matthew May, MD, Jeffrey Janus, MD; Mayo Clinic Rochester MN

AHNS041: ONCOLOGIC OUTCOMES FOLLOWING PRIMARY SURGICAL THERAPY FOR ADVANCED BASAL CELL CARCINOMA OF THE HEAD AND NECK Amarbir S Gill, MD, Vinay R Nittur, BS, Michael Moore, MD, D. Gregory Farwell, MD, Arnaud F Bewley, MD; University of California, Davis

Discussion

AHNS042: AURICULOTEMPORAL NERVE INVOLVEMENT IN PAROTID BED MALIGNANCY James D Thompson, MD, Greg Avey, MD, Tiffany Glazer, MD, Aaron Wieland, MD, Timothy McCulloch, MD, Gregory Hartig, MD; University of Wisconsin

AHNS043: PATIENT-SPECIFIC THREE-DIMENSIONAL PRINTED TISSUE-EQUIVALENT BOLUS FOR RADIOTHERAPY OF HEAD AND NECK MALIGNANCIES INVOLVING SKIN Brandon A Dyer, MD, Julian Perks, PhD, Cari Wright, CMD, David D Campos, PhD, Arnaud Bewley, MD, Tokihiro Yamamoto, PhD, Shyam S Rao, MD, PhD; University of California Davis

AHNS044: INFRATEMPORAL FOSSA RESECTIONS IN PATIENTS WITH ADVANCED CUTANEOUS NON-MELANOMA MALIGNANCIES OF THE HEAD AND NECK: A RETROSPECTIVE ANALYSIS OF SURGICAL CASES AT A SINGLE, TERTIARY REFERRAL CENTER Patrick F Morgan, MD, Anvesh Kompelli, William Harris, Terry A Day, MD, David M Neskey, MD, MSCR; Medical University of South Carolina

Discussion

7:30 am - 8:25 am **Panel 6: Reconstruction - Cutting guides vs. Cutting Costs: The value of 3D modeling and Virtual Surgical Planning** Maryland C

Session Chair: Danny Enepekides, MD, FRCS

This panel will present a brief review of current literature on the value and cost effectiveness of virtual surgical planning and 3D modelling. Using case based discussions, we will illustrate the utility of this technology and discuss the types of mandibular defects that benefit most from its use.

Introduction - Danny Enepekides, MD, FRCS

Review of the Current State of the Art - Urjeet A Patel, MD

Case Based Discussions - Danny Enepekides, MD, FRCS, Urjeet A. Patel, MD, Trinitia Y. Cannon, MD, Douglas B. Chepeha, MD, Brett A. Miles, MD, Matthew E. Spector, MD

Summary - Brett A. Miles, MD

Question and Answer - All panelists

LEARNING OBJECTIVES:

At the conclusion of this session, participants will be able to:

- Recognize the advantages and limitations of virtual surgical planning in complex mandibular reconstruction.
- Select which segmental mandibular defect will benefit most from the use of this technology.
- Recognize the potential cost-effectiveness of this technology in select cases of mandibular reconstruction.

8:30 am - 9:15 am **Hayes Martin Lecture: *Connecting Health Systems Research and Health System Improvement. The Role of Governance and Policy*** Maryland A1-3

Adalsteinn D. Brown, PhD
Introduction by Jonathan Irish, MD, MSc, FRCSC

Health Services Research has grown remarkably over the past two decades and now offers insights into ways to improve the provision, organization and funding of healthcare, let alone ways of increasing health and health system sustainability. But progress on health system improvement has not kept pace with the growth in health services research. The Hayes-Martin Memorial Lecture this year will explore some of the reasons that there is a disconnect between research and improvement, particularly at the health system level. Using the Canadian (Ontario) health system as a case, this lecture will explore some of the common reasons why insights from health services research have trouble crossing the line into health system redesign, and more importantly, what we truly know about optimal health system design. The lecture will conclude with some comments about bridging the gap between health services research and health system redesign and where health services research may most profitably focus.

Scientific Session — Thursday, April 19, 2018

LEARNING OBJECTIVES:

At the conclusion of this session, participants will be able to:

- Classify common barriers to using health services research to shape health system design.
- Assess the relevance of popular themes within health services research to health system reform.
- Suggest important areas for further health services research to inform health system redesign and strategies to support the uptake of resulting insights.

9:15 am - 9:30 am **AHNS Research Awards** — Maryland A1-3

9:30 am - 10:00 am **Morning Break with Exhibitors** — Prince George's Exhibit Hall A

10:00 am - 11:00 am **Presidential Awards and Address: *Reflections*** — Maryland A1-3

Jonathan Irish, MD, MSc, FRCSC
Introduction by Ehab Hanna, MD

11:00 am - 12:00 pm **Jatin P. Shah Symposium: Personalized Medicine - Can We Afford It?** — Maryland A1-3

Session Chair: David W. Eisele, MD

A panel of experts will discuss the value of genetic and molecular profiling in FLUS

Head and Neck Cancer Is Genetic and Molecular Profiling Providing Value for the Money? (CON) - John R. de Almeida, MD, MSc

Head and Neck Cancer Is Genetic and Molecular Profiling Providing Value for the Money? (PRO) - James Rocco, MD, PhD

Whats All the FLUS: The Use of Molecular Profiling in FLUS is the Standard Care (PRO) - Robert L. Ferris, MD, PhD

Whats All the FLUS: The Use of Molecular Profiling in FLUS is the Standard Care (CON) - Ashok R. Shaha, MD

LEARNING OBJECTIVES:

At the conclusion of this session, participants will be able to:

- Understand genetic and profiling in FLUS.
- Understand molecular profiling in FLUS.
- Understand the value of genetic and molecular profiling in FLUS.

12:00 pm - 1:00 pm **Lunch with Exhibitors** — Prince George's Exhibit Hall A

1:00 pm - 1:55 pm

Scientific Session 8: Best Papers of AHNS 2018

Maryland A1-3

Moderators: Peter Dziegielewski, MD, FRCSC, Tanya Fancy, MD, and Benjamin Judson, MD

AHNS045: THE IMPACT OF THE AFFORDABLE CARE ACT ON INSURANCE COVERAGE FOR HEAD AND NECK CANCER: A POPULATION-BASED ANALYSIS Richard B Cannon, MD, Patrick Carpenter, MD, Hilary C McCrary, MD, Hailey M Shepherd, Luke O Buchmann, MD, Jason P Hunt, MD, Marcus M Monroe, MD; University of Utah

AHNS046: OCCULT NODAL DISEASE AND OCCULT EXTRANODAL EXTENSION IN OROPHARYNGEAL SQUAMOUS CELL CARCINOMA PATIENTS UNDERGOING PRIMARY TORS WITH NECK DISSECTION Caitlin McMullen, MD[1], Garneau Jonathan, MD[2], Emilie Weimar, MD[3], Ali Sana, MD[4], Joaquim Farinhas, MD, MBA[5], Eugene Yu[3], Peter Som, MD[2], Cathy Sarta[4], David Goldstein, MD, MSc, FRCSC[3], Su Susie, MSc[3], Wei Xu, PhD[3], Richard Smith, MD[4], Brett Miles, MD, DDS[2], John de Almeida, MD, MSc, FRCSC[3]; [1]Moffitt Cancer Center, [2]Mount Sinai Hospital, [3]Princess Margaret Cancer Center, [4]Montefiore Medical Center, [5]Florida Hospital - Tampa

AHNS047: PERIOPERATIVE GABAPENTIN USE AMONG HEAD AND NECK SURGICAL PATIENTS Melanie E Townsend, MD, Tina Liou, MD, Schoer Morgan, BS, Miranda Lindburg, BS, Nicholas Scott-Whitenborn, BS, Dorina Kallogjeri, MD, Michael Bottros, MD, Ryan Jackson, MD, Brian Nussenbaum, MD, Jay Piccirillo, MD, FACS; Washington University in St Louis

Discussion

AHNS048: DIFFERENCES IN OPIOID UTILIZATION AFTER MAJOR HEAD AND NECK PROCEDURES: A COMPARISON OF INSTITUTIONS IN HONG KONG AND THE UNITED STATES. Ryan J Li, MD[1], Jason YK Chan, MD[2]; [1]Oregon Health and Science University, [2]Chinese University of Hong Kong

AHNS049: DELAYS DURING TREATMENT FOR LARYNGEAL SQUAMOUS CELL CARCINOMA: AN ANALYSIS OF THE NATIONAL CANCER DATABASE Elliot Morse, BS, Benjamin Judson, MD, Saral Mehra, MD, MBA; Department of Surgery, Division of Otolaryngology, Yale University School of Medicine, New Haven, CT, 06520, USA

AHNS050: THE ROLE OF TRAF3/CYLD MUTATIONS IN THE ETIOLOGY OF HUMAN PAPILLOMAVIRUS-DRIVEN CANCERS OF THE HEAD AND NECK Tejas S Sathe, Michael A Hajek, MD, Andrew Sewell, MD, Cassie J Pan, Wendell G Yarbrough, MD, MMHS, Natalia Issaeva, PhD; Yale University Department of Surgery - Division of Otolaryngology

Discussion

1:00 pm - 1:55 pm **Panel 7: Focus on Function: Maximizing Survivorship and Quality of Life After Treatment** Maryland C

Session Chair: Rosemary Martino, MSc, PhD

Using a case-based approach, this session will demonstrate the benefit of a multi-disciplinary team to maximize the function, health and quality of life of patients with head and neck cancer. Discussion will be actively encouraged between panel and audience members.

Introduction - Rosemary Martino, MSc, PhD

Quality Care Pathway and Case Presentation - Liza Blumenfeld, MA, CCC-SLP, BCS-S

Investigative Work-up Using Manometry - Timothy McCulloch, MD

Behavioural Intervention for Swallowing - Barbara Messing, MA, CCC-SLP, BCS-S

Standardized Surveillance of the Patient Perspective - Bevan Yueh, MD

Concluding Comments - Rosemary Martino, MSc, PhD

LEARNING OBJECTIVES:

At the conclusion of this session, participants will be able to:

- Distinguish the multiple needs of HNC survivors, that vary by individual and over time.
- Develop a systematic clinical care pathway that ensures comprehensive surveillance of patient needs and cancer care.
- Discuss the contribution and value of the multi-disciplinary approach to survivorship care.

2:00 pm - 3:00 pm **Rapid Fire Session 2: Choosing Wisely and Evidence-Based** Maryland A1-3

Session Chairs: Vikas Mehta, MD & Richard J. Wong, MD

This session will use a series of lectures to address clinical questions with evidenced based answers in a high-yield, rapid format. Each lecture will also be accompanied with a case-based question that will involve a web-based, real-time audience response system in an effort to keep the session more interactive.

Cost Effective Flap Monitoring - Antoine Eskander, MD, ScM, FRCSC

Adjuvant Therapy for Non Melanoma Skin Cancer - Becky L. Massey, MD

Prophylactic Management of the Neck in Cutaneous Squamous Cell - Cherie-Ann O. Nathan, MD

Sentinel Lymph Node Biopsy in Head and Neck Melanoma - Cecelia Schmalbach, MD, MS

Hypocalcemia in Thyroidectomy - Catherine F. Sinclair, MD, FRACS

Scientific Session — Thursday, April 19, 2018

LEARNING OBJECTIVES:

At the conclusion of this session, participants will be able to:

- Identify the level of evidence supporting the speakers position on their assigned topic.
- Evaluate how this evidence can be applied to their own practice.
- Use the knowledge gained through the high-yield, interactive sessions.

2:00 pm - 3:00 pm Scientific Session 9: Oral Cavity — Maryland C

Moderators: Caitlin McMullen, MD, BS, Jeremy Richmon, MD, and John Yoo, MD, FRCSC

AHNS051: PROGNOSTIC PERFORMANCE OF THE AJCC 8TH EDITION STAGING SYSTEM IN PATIENTS WITH EARLY ORAL TONGUE CANCER Moran Amit, Samantha Tam, Zafereo Mark, Diana Bell, Randal Weber; MD Anderson Cancer Center

AHNS053: IS ORAL CAVITY CANCER IN YOUNG NON-SMOKERS BIOLOGICALLY DISTINCT? Kathryn M Vorwald, DDS, MD, Nicholas T Gimbrone, PhD, Caitlin P McMullen, MD, Laura F Martin, MD, PhD, Janis de la Iglesia, PhD, Robbert J Slebos, PhD, J Trad Wadsworth, MD, Christine H Chung, MD; H. Lee Moffitt Cancer Center & Research Institute

AHNS054: COMPREHENSIVE ANALYSIS OF MINOR SALIVARY GLAND MALIGNANCIES OF THE HEAD AND NECK Jamie Oliver[1], Peter Wu[1], Clifford Chang[1], Binhuan Wang[1], Moses Tam[1], Zujun Li[1], Cheng Liu[1], Mark Persky[1], Kenneth Hu[1], David Schreiber[2], Babak Givi[1]; [1]New York University School Of Medicine, [2]SUNY Downstate Medical Center

Discussion

AHNS055: ANALYSIS OF RISK FACTORS ASSOCIATED WITH UNPLANNED REOPERATION FOLLOWING MAJOR CANCER OPERATIONS OF THE HEAD AND NECK Kalin K Nishimori, MBS, Eric H Zhao, BS, Neel R Sangal, BA, Sana H Siddiqui, BA, Jean A Eloy, MD, Soly Baredes, MD, Richard C Park, MD; Rutgers New Jersey Medical School

AHNS056: TRANSCRIPTOMIC PROFILE OF SQUAMOUS CELL CARCINOMA OF THE TONSIL IS UNIQUE COMPARED TO OTHER HEAD AND NECK NEOPLASMS Shijun Sung, PhD[1], Karam Badran, MD[2], Thomas E Heineman, MD[2], Albert Y Han[2], Nahda Harati, BS[2], Peter Pellionisz, BS[2], Maie St. John, MD, PhD[2]; [1]University of California, Los Angeles, [2]David Geffen School of Medicine at UCLA

AHNS057: DEPTH OF INVASION AS A PREDICTOR OF NODAL DISEASE AND SURVIVAL IN PATIENTS WITH ORAL TONGUE SQUAMOUS CELL CARCINOMA Samantha Tam, MD, Moran Amit, MD, PhD, Mark Zafereo, MD, Diana Bell, MD, Randal S Weber, MD; University of Texas MD Anderson Cancer Center

Discussion

3:00 pm - 3:30 pm Afternoon Break with Exhibitors — Prince George's Exhibit Hall A

3:30 pm - 4:30 pm **Panel 8: Advances in Skin Cancer Management** Maryland A1-3

Session Chair: Kevin Emerick, MD

This session will use clinical vignettes and challenging cases to discuss the key issues in the multidisciplinary management of high risk and advanced skin cancer. This session will focus on the critical aspects of surgical management and discuss the latest updates in non-surgical management.

Case Discussions - Peter H. Ahn, MD, Arnaud F. Bewley, MD, Geoffrey T. Gibney, MD, Samir Khariwala, MD, and Kelly M. Malloy, MD

LEARNING OBJECTIVES:

At the conclusion of this session, participants will be able to:

- Discuss updates in the management for regional lymph nodes for melanoma.
- Stratify patients who need adjuvant radiation and chemoradiation for advanced cutaneous malignancy.
- Consider multiple treatment options for advanced basal cell carcinoma.

3:30 pm - 4:30 pm **Scientific Session 10: Quality Engineering and Pathways** Maryland C

Moderators: Marc Cohen, MD, MPH, Vasu Divi, MD, and Kristen Pytynia, MD, MPH

AHNS058: EFFECTIVENESS OF NON-OPIOID/NON-NARCOTIC POSTOPERATIVE PAIN MANAGEMENT REGIMEN FOR PATIENTS UNDERGOING THYROIDECTOMY AND/OR PARATHYROIDECTOMY James R Biery, PAC, Phillip K Pellitteri, DO, FACS; Guthrie Clinic

AHNS059: UTILITY OF THE LACE INDEX IN PREDICTING 30-DAY READMISSION RATE IN HEAD AND NECK FREE FLAP MICROVASCULAR RECONSTRUCTION PATIENTS Ashley M Bauer, MD[1], Kelly M Malloy, MD[1], Emily Bellile, MS[2], Steven B Chinn[1], Matthew E Spector, MD[1], Chaz L Stucken, MD[1], Mark E Prince, MD[1], Jeff S Moyer, MD[1], Andrew G Shuman, MD[1], Scott A McLean, MD, PHD[1], Carol R Bradford, MD, FACS[2], Keith A Casper, MD[1]; [1]University of Michigan Department of Otolaryngology-Head and Neck Surgery, [2]University of Michigan

AHNS060: VALUE OF INTENSIVE CARE UNIT–BASED MANAGEMENT FOR MICROVASCULAR FREE FLAP RECONSTRUCTION IN HEAD AND NECK SURGERY Pratyusha Yalamanchi[1], William W Thomas, MD[2], Alan Workman[1], Karthik Rajasekaran, MD[1], Rabie M Shanti, DMD, MD[2], Ara C Chalian, MD[2], Jason G Newman, MD, FACS[2], Steven B Cannady[2]; [1]Perelman School of Medicine at the University of Pennsylvania, [2]Department of Otorhinolaryngology–Head and Neck Surgery, Hospital of the University of Pennsylvania

AHNS061: AN ANALYSIS OF PROCESSES OF CARE MEASURES RELATED TO DELAYED POSTOPERATIVE RADIATION THERAPY IN PATIENTS WITH SURGICALLY-TREATED HEAD AND NECK CANCER Tyler A Janz, BS, Anand K Sharma, MBBS, Terry A Day, MD, Evan M Graboyes, MD; Medical University of South Carolina

Discussion

Scientific Session — Thursday, April 19, 2018

AHNS062: IDENTIFYING PREDICTORS OF DEPRESSION DEVELOPMENT IN HEAD AND NECK CANCER PATIENTS Aru Panwar, MD[1], Katherine Rieke, MPH, MA[2], Kendra Schmid, PhD[2], William Burke, MD[3], Harlan Sayles, MS[2], Matthew Dobbertin, DO[4], Diane Bessette, PA[5], William Lydiatt, MD[1]; [1]Estabrook Cancer Center, Nebraska Methodist Hospital, Omaha, Nebraska, [2]College of Public Health, University of Nebraska Medical Center, Omaha, Nebraska, [3]Banner Alzheimer's Institute, Phoenix, Arizona, [4]Boys Town Child and Adolescent Psychiatry Clinic, Boys Town, Nebraska, [5]Department of Psychiatry, University of Nebraska Medical Center, Omaha, Nebraska

AHNS063: TREATMENT DELAYS IN PRIMARILY-RESECTED OROPHARYNGEAL SQUAMOUS CELL CARCINOMA: AN ANALYSIS OF THE NATIONAL CANCER DATABASE Elliot Morse, Shayan Cheraghlou, Benjamin Judson, MD, Saral Mehra, MD, MBA; Yale University Department of Surgery, Division of Otolaryngology

AHNS064: DEVELOPMENT OF MULTIMODAL ANALGESIA PATHWAY IN OUTPATIENT THYROID SURGERY IS ASSOCIATED WITH DRAMATIC REDUCTION IN OPIOID USE Aru Panwar, MD, William Lydiatt, MD, Daniel Lydiatt, MD, DDS, Robert Lindau, MD, Andrew Coughlin, MD, Russell Smith, MD, Oleg Militsakh, MD; Estabrook Cancer Center, Nebraska Methodist Hospital, Omaha, Nebraska

AHNS065: IMPACT OF FACILITY HEAD AND NECK CANCER RESECTION VOLUME ON POSITIVE MARGIN RATE Cheryl C Nocon, MD[1], Gaurav S Ajmani, MHS[2], Mihir K Bhayani, MD[1]; [1]NorthShore University HealthSystem, [2]University of Chicago Pritzker School of Medicine

Discussion

4:30 pm - 5:15 pm — Maryland A1-3

Panel 9: The Importance of Gender Equality in Lifting All Boats

Session Chair: Catherine Sinclair, MD, FRACS

This session will explore the gender trends in otolaryngology over time, present data from a recent survey administered to AHNS members, and examine the role of current surgical leaders in promoting and supporting female surgeons, including the impact of mentorship programs.

From Past to Present: A History of Gender Differences in Otolaryngology - Catherine Sinclair, MD, FRACS

The Role of Surgical Leaders in Supporting Female Surgeons - Eben Rosenthal, MD

Results of the Women in AHNS Survey - Ozlem E. Tulunay-Ugur, MD

Overcoming Obstacles and the Role of Mentorship - Marion E. Couch, MD, PhD

LEARNING OBJECTIVES:

At the conclusion of this session, participants will be able to:

- Recognize that there is ongoing gender disparity in otolaryngology, especially at higher academic levels.
- Understand current issues faced by female surgeons with regards to work-life balance and career satisfaction.
- Discuss strategies to improve female participation and leadership in head and neck surgery.

Scientific Session — Thursday, April 19, 2018

4:30 pm - 5:15 pm **Panel 10: Head and Neck Cancer Cooperative Group Clinical Trials: Updates and New Trial Concepts** — Maryland C

Session Chair: Steve S. Chang, MD

The NCI and the Cooperative Groups: Mission and Organizational Structure - Robert Ferris, MD, PhD

NRG Oncology Clinical Trials - Drew Ridge, MD, PhD

PRO-ACTIVE (Comparing the Effectiveness of Prophylactic Swallow Intervention for Patients Receiving Radiotherapy for Head and Neck Cancer) - Katherine Hutcheson, MD & Rosemary Martino, MSc, PhD

Novel Surgical Clinical Trial Concepts - Steve S. Chang, MD

LEARNING OBJECTIVES:

At the conclusion of this session, participants will be able to:

- Review of Cooperative Groups: Mission and Organizational Structure.
- Update on currently open cooperative group clinical trials.
- Review current trial concepts that are close to activation.
- Discussion of new trial concepts/proposals.

5:30 pm - 7:00 pm **AHNS Poster Session** — Prince George's Exhibit Hall A

7:30 pm - 8:30 pm **President's Reception** — National Harbor 11

Faculty Listing

Amit Agrawal, MD, The Ohio State University, Columbus, OH

Peter H. Ahn, MD, MedStar Health, Washington, DC

William B. Armstrong, MD, University of California, Irvine, Irvine, CA

Arnaud F. Bewley, MD, University of California - Davis, Sacramento, CA

Liza Blumenfeld, MA, CCC-SLP, BCS-S, UCSD Moores Cancer Center, La Jolla, CA

Jimmy J. Brown, MD, DDS, Augusta University, Augusta, GA

Adalsteinn Brown, PhD, Dalla Lana School of Public Health, University of Toronto, Toronto, ON, Canada

Kevin T. Brumund, MD, University of California, San Diego, La Jolla, CA

Brian B. Burkey, MD, Med, Cleveland Clinic Foundation, Cleveland, OH

Kenneth D. Burman, MD, Medstar Washington Hospital Center, Washington, DC

Michael Burns, President & CEO, The Princess Margaret Cancer Foundation, Toronto, ON, Canada

Trinitia Y. Cannon, MD, University of Oklahoma Health Sciences Center, Oklahoma, OK

Steve S. Chang, MD, Henry Ford Health System, Detroit, MI

Amy Y. Chen, MD, MPH, Emory Department of Otolaryngology Head and Neck Surgery, Atlanta, GA

Douglas B. Chepeha, MD, University Health Network, Princess Margaret Hospital, Toronto, ON, Canada

Marc A. Cohen, MD, MPH, Memorial Sloan Kettering Cancer Center, New York, NY

Marion E. Couch, MD, PhD, Indiana University-Purdue University Indianapolis, Indianapolis, IN

John R. de Almeida, MD, MSc, Princess Margaret Cancer Centre and University Health Network, Toronto, ON, Canada

Vasu Divi, MD, Stanford University, Stanford, CA

Umamaheswar Duvvuri, MD, PhD, University of Pittsburgh, Pittsburgh, PA

Peter T. Dziegielewski, MD, FRCSC, University of Florida, Gainesville, FL

David W. Eisele, MD, Johns Hopkins University School of Medicine, Baltimore, MD

Kevin Emerick, MD, Massachusetts Eye and Ear Infirmary, Boston, MA

Danny Enepekides, MD, FRCS, University of Toronto, Toronto, ON, Canada

Antoine Eskander, MD, ScM, FRCSC, Sunnybrook Health Sciences Centre and University of Toronto, Toronto, ON, Canada

Carole Fakhry, MD, MPH, Johns Hopkins Medicine, Baltimore, MD

Tanya Fancy, MD, West Virginia University, Morgantown, WV

D. Gregory Farwell, MD, FACS UC Davis Health System, Sacramento, CA

Robert L. Ferris, MD, PhD, UPMC Hillman Cancer Center, Pittsburgh, PA

Geoffrey T. Gibney, MD, Georgetown Lombardi Comprehensive Cancer Center, Washington, DC

Babak Givi, MD, New York University, New York, NY

David P. Goldstein, MD, FRCSC, Princess Margaret Cancer Centre, Toronto, ON, Canada

Christine G. Gourin, MD, Johns Hopkins University, Baltimore, MD

Ehab Y. Hanna, MD, MD Anderson Cancer Center, Houston, TX

Amy C. Hessel, MD, MD Anderson Cancer Center, Houston, TX

Faculty Listing

Kevin McLoughlin P. Higgins, MD, FRCSC, Sunnybrook Health Sciences Center, Odette Cancer Center, Toronto, ON, Canada

Katherine A. Hutcheson, MD, The University of Texas MD Anderson Cancer Center, Houston, TX

Jonathan Irish, MD, MSc, FRCSC, Princess Margaret Cancer Centre, University of Toronto, Toronto, ON, Canada

Lisa Ishii, MD, MHS, Johns Hopkins Medicine, Baltimore, MD

Scharukh Jalisi, MD, Beth Israel Deaconess Medical Center, Harvard University, Boston, MA

Jacquie Jonklaas, MD, PhD, MPH, Georgetown Univeristy, Washington, DC

Benjamin Judson, MD, Yale School of Medicine, New Haven, CT

Sobia Khaja, MD, University of Minnesota, Minneapolis, MN

Samir Khariwala, MD, University of Minnesota, Minneapolis, MN

Daniel Knott, MD, University of California, San Francisco, San Francisco, CA

Miriam Lango, MD, Fox Chase Cancer Center, Temple University Health System, Philadelphia, PA

Carol Lewis, MD, MPH, UT MD Anderson Cancer Ctr, Houston, TX

William M. Lydiatt, MD, Nebraska Methodist Hospital, Omaha, NE

Ellie Maghami, MD, City of Hope, Duarte, CA

Kelly M. Malloy, MD, University of Michigan, Ann Arbor, MI

Jonathan Mark, MD, University of Cincinnati, Cincinnati, OH

Rosemary Martino, MSc, PhD, University of Toronto, Toronto, ON, Canada

Becky L. Massey, MD, Medical College of Wisconsin, Milwaukee, WI

Susan D. McCammon, MD, UTMB, Galveston, TX

Timothy M. McCulloch, MD, University of Wisconsin, Madison, WI

Caitlin P. McMullen, MD, BS, Moffitt Cancer Center, Tampa, FL

Vikas Mehta, MD, Montefiore Medical Center, Bronx, NY

Charles J. Meltzer, MD, Kaiser Permanente, Santa Rosa, CA

Barbara Messing, MA, CCC-SLP, BCS-S, Greater Baltimore Medical Center, Baltimore, MD

Brett A. Miles, MD, Icahn School of Medicine at Mount Sinai, New York, NY

Michael G. Moore, MD, UC Davis Health System, Sacramento, CA

Luc G.T. Morris, MD MSc, Memorial Sloan Kettering Cancer Center, New York, NY

Larry L. Myers, MD, University of Texas Southwestern Medical Center, Dallas, TX

Cherie-Ann O. Nathan, MD, LSU Health, Shreveport, LA

Shawn D. Newlands, MD, PhD, University of Rochester, Rochester, NY

Lisa A. Orloff, MD, FACS, FACE, Stanford University, Stanford, CA

Brian O'Sullivan, MD, Princess Margaret Hospital, Toronto, ON, Canada

Nitin A. Pagedar, MD, University of Iowa, Iowa City, IA

Aru Panwar, MD, Methodist Estabrook Cancer Center, The Nebraska Methodist Hospital, Omaha, NE

Urjeet A. Patel, MD, Northwestern University, Chicago, IL

Liana Puscas, MD, Duke University, Durham, NC

Kristen B. Pytynia, MD, MPH, MD Anderson Cancer Center, Houston, TX

Jeremy Richmon, MD, Mass Eye and Ear, Boston, MA

John A. Ridge, MD, PhD, Fox Chase Cancer Center, Philadelphia, PA

Faculty Listing

James Rocco, MD, PhD, The Ohio State University Wexner Medical Center, Columbus, OH

Eben L. Rosenthal, MD, Stanford Cancer Center, Stanford, CA

Cecelia Schmalbach, MD, MS, Indiana University, Indianapolis, IN

Rahul Seth, MD, University of California San Francisco, San Francisco, CA

Ashok R. Shaha, MD, Memorial Sloan Kettering Cancer Center, New York, New York, NY

Maisie Shindo, MD, Oregon Health & Science University, Portland, OR

Alfred A. Simental, MD, Loma Linda University School of Medicine, Loma Linda, CA

Catherine F. Sinclair, MD, FRACS, Mount Sinai, New York, NY

Michael C. Singer, MD, Henry Ford Health System, Detroit, MI

Russell B. Smith, MD, Baptist MD Anderson Cancer Center, Jacksonville, FL

Matthew E. Spector, MD, University of Michigan, Ann Arbor, MI

Maie St John, M.D., Ph.D., University of California, Los Angeles, Los Angeles, CA

Brendan C. Stack, MD, University of Arkansas for Medical Sciences, Little Rock, AR

Shirley Y. Su, MBBS, University of Texas MD Anderson Cancer Center, Houston, TX

Marita S. Teng, MD, Mount Sinai School of Medicine, New York, NY

David J. Terris, MD, FACE, Augusta University, Augusta, GA

Ozlem E. Tulunay, MD, University of Arkansas for Medical Sciences, Little Rock, AR

Ian J. Witterick, MD, MSc, FRCSC, University of Toronto, Toronto, ON, Canada

Richard J. Wong, MD, Memorial Sloan Kettering Cancer Center, New York, NY

John Yoo, MD, FRCSC, Western University, London, ON, Canada

Eugene Yu, MD, University of Toronto, Toronto, ON, Canada

Bevan Yueh, MD, University of Minnesota, Minneapolis, MN

Adam Zanation, MD, University of North Carolina, Chapel Hill, NC

Jose P. Zevallos, MD, MPH, Washington University School of Medicine in St. Louis, St. Louis, MO

Faculty, Presenter & Planning Committee Disclosures

The following faculty & presenters provided information indicating they have a financial relationship with a proprietary entity producing health care goods or services, with the exemption of non-profit or government organizations and non-health care related companies. (Financial relationships can include such things as grants or research support, employee, consultant, major stockholder, member of speaker's bureau, etc.)

Name	Commercial Interest	What Was Received	For What Role	Role in Meeting
D. Gregory Farwell, MD, FACS	Intuititve	CO PI	R01 Grant	Program Committee
Robert L. Ferris, MD, PhD	Amgen	Advisory Board	Advisory Committee	Faculty
	Astra-Zeneca/ MedImmune	Advisory Board, Clinical Trial, Research Funding	Board Member	
	Bristol-Myers Squibb	Advisory Board, Clinical Trial, Research Funding	Board Member	
	EMD Serono	Advisory Baord	Board Member	
	Lilly	Advisory Board	Board Member	
	Merck	Advisory Board	Board Member	
	PPD	Advisory Board (Benitec, Immunicum), Research Funding	Board Member	
	Tesaro	Research	Board Member	
	VentiRx Pharmaceuticals	Research	Board Member	
Geoffrey T. Gibney, MD	Genentech	Consulting Fee	Consultant	Faculty
	Genentech	Honoraria	Speaking/Teaching	
	Novartis	Consulting Fee	Consultant	
	Merck	Honoraria	Speaking/Teaching	
	Incyte	Consulting Fee	Consultant	
	Newlink Genetics	Consulting Fee	Consultant	
Dorina Kallogjeri, MD, MPH	PotentiaMed	Consulting Fee	Consultant	Abstract Author
Kelly M. Malloy, MD	UpToDate	Author	Roylaties for 2 Chapters	Program Committee
Vikas Mehta, MD	Intuitive Surgical	Honoraria	Speaking/Teaching	Faculty
Michael G. Moore, MD	AO North America	Honoraria	Speaking/Teaching	Faculty
Michael Moore MD	AO North America	Serve as a members of the teaching faculty for the organization	Honorarium	Program Committee
Brian O'Sullivan, MD	Merck & Co.	Consulting Fee	Advisory Committee	Faculty
Sara I. Pai	Merck	Industry Supported Research	Research Support (Grant)	Abstract Author
	Abbvie	Industry Supported Research	Research Support (Grant)	
	Astrazeneca/ MedImmune	Industry Supported Research	Research Support (Grant)	
	Aperisys	Industry Supported Research	Research Support (Grant)	
	Tesaro	Industry Supported Research	Research Support (Grant)	
	Cue	Industry Supported Research	Research Support (Grant)	
Jay F. Piccirillo, MD	PotentiaMed	Consulting Fee	Consultant	Abstract Author
Eben L. Rosenthal, MD	LICOR	Equipment Loan	Equipment Loan	Abstract Author
	NOVADAQ	Equipment Loan	Equipment Loan	
	Illuminare	Consulting Fee	Consultant	
	Medrobotics	Consulting Fee	Consultant	
	Aspyrion	Consulting Fee	Consultant	
Cecelia Schmalbach, MD, MS	AO North America CMF Non-profit	Honoraria	Speaking/Teaching	Faculty

Faculty, Presenter & Planning Committee Disclosures

Name	Commercial Interest	What Was Received	For What Role	Role in Meeting
Rahul Seth MD	Bard Davol	Research, Primary Investigator	Industry Supported Research	Program Committee
Alfred A. Simental, MD	Intuitive Surgica	RO 1 Greant	Co PI	Faculty
Michael C. Singer, MD	Medtronic	Consulting Fee	Consultant	Faculty
Brendan Stack, MD	Shire	Independent Contracter	Speaking Fee	Program Committee
	Sanofi	Independent Contracter	Speaking Fee	
David J. Terris, MD, FACS, FACE	Genzyme	Honoraria	Speaking/Teaching	Faculty
Lori J. Wirth	Novartis	Honoraria	Advisory Committee	Abstract Author
	Merck	Honoraria	Advisory Committee	
Ian J. Witterick, MD, MSc, FRCSC	Proteocyte Diagnostics Inc.	Ownership Interest	Advisory Committee	Faculty
John Yoo, MD, FRCSC, FACS	COTI Inc.	Ownership Interest	Board Member	Faculty, Program Committee
Adam Zanation, MD	Stryker	Consulting Fee	Consultant	Faculty
	Medtronic	Consulting Fee	Consultant	
	Acclarent - JNJ	Consulting Fee	Consultant	

Unless indicated above, the planners, reviewers, staff or faculty for this CME Activity do not have any financial relationships to disclose.

2018 Annual Meeting Program Committee

Gregory Farwell, MD, FACS
Program Chair

Danny Enepekides, MD, FRCS,
Program Co-Chair

Bruce Davidson, MD, Local
Arrangements Co-Chair

Caitlin McMullen, Local
Arrangements Co-Chair

Amit Agrawal, MD

Arnaud Bewley, MD

Jimmy Brown, MD

Kevin Brumund, MD

Trinitia Cannon, MD, MD

Amy Chen, MD, MPH

John de Almeida, MD, MSc

Jason Diaz, MD

Kevin Emerick, MD

Antoine Eskander, MD, ScM, FRCSC

Carole Fakhry, MD, MPH

Tanya Fancy, MD

Babak Givi, MD

David Goldstein, MD, FRCSC

Christine Gourin, MD

Jonathan Irish, MD, MSc, FRCSC

Samir Khariwala, MD

Carol Lewis, MD, MPH

Ellie Maghami, MD

Kelly Malloy, MD

Becky Massey, MD

Vikas Mehta, MD

Michael Moore, MD

Larry Myers, MD

Shawn Newlands, MD, PhD

Nitin Pagedar, MD

Liana Puscas, MD

Rahul Seth

Russell Smith, MD

Matthew Spector, MD

Brendan Stack, MD

Marita Teng, MD, FACS

John Yoo, MD, FRCSC

Jose Zevallos, MD, MPH

CME Compliance & Measurement Committee Members Involved in COI Review

Paul L. Friedlander, MD, Chair

Oleg Militsakh, MD

J. Trad Wadsworth, MD

Oral Papers

SS01: TECHNOLOGY

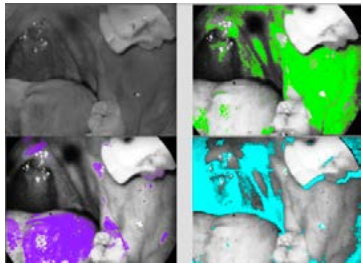
AHNS001: COMPUTER VISION USING HYPERSPECTRAL IMAGING & MACHINE LEARNING TO CLASSIFY TUMOR, MARGIN, AND SOFT-TISSUES OF THE HEAD AND NECK Shamik Mascharak[1], Alex Hegyi, PhD[2], F. Christopher Holsinger, MD[1]; [1]Stanford University, [2]Electronic Materials and Devices Laboratory, Palo Alto Research Center

Importance: The head and neck surgeon faces many visual tissue discrimination tasks that remain challenging even when aided by optical magnification, such as distinguishing tumor from surrounding normal tissues, nerve from vessel, and parathyroid from fat. The human retina relies upon trichromatic (RGB) color discrimination and cannot perceive differences in the wavelengths of light reflected from heterogeneous human tissues if those differences do not vary the trichromatic stimulus.

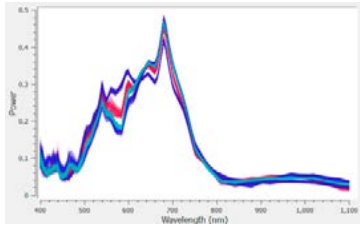
Objective: We hypothesize that there is clinically valuable information that can be discerned using hyperspectral imaging of animal and human tissues. The purpose of this study was to demonstrate tissue discrimination by applying machine-learning and computer vision algorithms to hyperspectral images of tissue acquired with a novel hyperspectral camera.

Materials and Methods: A PARC hyperspectral camera prototype, based on a liquid-crystal polarization interferometer with approx. 500 cm-1 resolution over the visible and near-infrared portion of the electromagnetic spectrum, was used to acquire hyperspectral image datasets of freshly obtained animal and human tissue. The datasets were analyzed with conventional machine-learning methods for clustering and classification.

Results: The hyperspectral camera was used to image the soft-tissues of the head and neck from 25 mice. Distinct spectral patterns were discerned with unsupervised clustering and principal components analysis that could be correlated with differences in tissue type. Such statistical analyses could potentially be used to distinguish thyroid gland from submandibular gland, mucosal oral tongue [HA<1] from cervical muscle, and lung from liver. The camera was also used to acquire hyperspectral data-cubes of freshly resected oral and oropharyngeal cancer tissue to train a classifier for later discrimination of tumor from normal tissue. Finally, hyperspectral imaging of the human oral cavity was performed in vivo on a human subject using a 7 mm rigid endoscope. Based on differences in the wavelengths of reflected light, (Figure 1)



a trained classifier successfully discerned between subsites within the oral cavity that nevertheless had a similar visual presentation. (Figure 2).



Conclusions and Relevance: Our study demonstrates the feasibility of using hyperspectral imaging and computer vision to classify and to distinguish clinically significant differences of murine and human soft-tissues. The speed, convenience, and spectral resolution of the PARC hyperspectral camera suggest that this technology might provide the head and neck surgeon with fundamentally enhanced intra-operative surgical vision. Implementation and future study may be warranted in a prospective clinical trial.

AHNS002: EARLY RESULTS OF METHYLATION MARKERS WITH DIGITAL DROPLET PCR FOR THE EARLY DETECTION OF HEAD AND NECK SQUAMOUS CELL CARCINOMA Jason Chan, Sherwood Fung, Cherrie Ng, Eddy Wong, Avis Shiu, Jacky W Lam, Allen K Chan; The Chinese University of Hong Kong

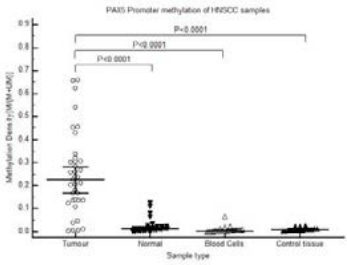
Background: Early detection and diagnosis of head and neck squamous cell carcinoma (HNSCC) will allow

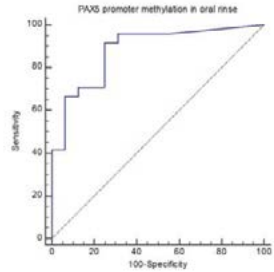
for the identification of patients at an earlier stage of disease. Here we evaluate the use of methylation markers with digital droplet PCR in the diagnosis of HNSCC.

Methods: Methylation of the tumour suppressor genes PAX5, EDNRB, DCC, MGMT, DAPK and P16 in prospectively collected HNSCC patient tumour tissues, HNSCC oral rinses, normal control tissues and normal oral rinses were analyzed using digital droplet PCR. The data was analysed by Mann-Whitney U test, Student's t-test comparison of means and ROC analysis of the samples for sensitivity and specificity with MedCalc Statistical Software version 17.6 (MedCalc Software bvba, Ostend, Belgium; http://www.medcalc.org; 2017)

Results: 36 HNSCC patients and 25 control patients were analysed. Using digital droplet PCR there was significant difference in the methylation density of PAX5 (P<0.001), EDNRB (P<0.001), DCC (P<0.001), MGMT (P<0.007), DAPK (P<0.03) and P16 (P = 0.03) when comparing HNSCC with paired normal tissues (PAX5 methylation is shown in figure 1). PAX5(P<0.001), EDNRB(P<0.001), DCC(P<0.001) showed aberrant methylation when compared with control patient tissues. A further analysis of oral rinses between HNSCC and control patients for PAX5 showed a sensitivity of 91.7% and specificity of 75% as shown in figure 2. EDNRB demonstrated a lower sensitivity of 37.5% and specificity of 93.7% for oral rinses when compared between HNSCC and control patients.

Conclusions: Using digital droplet PCR may improve the sensitivity in utilizing methylation markers, in particular PAX5 for the detection of HNSCC in oral rinses in patients with HNSCC.





Sensitivity:91.7%
Specificity:75%

AHNS003: USE OF TRANSCERVICAL ULTRASOUND FOR IDENTIFICATION OF PRIMARY SITE IN PATIENTS WITH OROPHARYNGEAL CANCER C. Burton Wood, MD[1], Sarah L Rohde, MD[1], Robert Sinard, MD[1], Kyle Mannion, MD[1], Alexander Langerman, MD, SM[1], Young J Kim, MD, PhD[1], Joseph Aulino, MD, PhD[1], Derek K Smith, DDS, PhD[1], Arthur Fleischer, MD[1], Carole Fakhry, MD, MPH[2], James L Netterville, MD[1], Krystle L Kuhs, PhD, MPH[1]; [1]Vanderbilt University Medical Center, [2]Johns Hopkins University

Background: HPV-driven oropharyngeal cancer (HPV-OPC) is increasing in incidence. Early identification of HPV-OPC is difficult, as patients are frequently asymptomatic until later stages of disease. Methods for early detection in asymptomatic patients at risk of developing HPV-OPC would be ideal. HPV16 E6 seropositivity is a promising early marker of HPV-OPC; yet, it is unclear if current imaging modalities are able to visualize early tumors within the oropharynx. Transcervical ultrasound has shown promise for detecting unknown primary lesions not visualized with traditional modalities such as CT or FDG-PET/CT. The combination of HPV16 E6 antibodies and ultrasound therefore represents a potential method for early detection of HPV-OPC.

Objective: This ongoing pilot study was designed to determine the sensitivity of HPV16 E6 antibodies and ultrasound for detecting HPV-OPC.

Methods: Patients with known or suspected OPC without prior treatment or cancer (other than non-melanoma skin cancer) were recruited upon their first visit to Head and Neck Surgery Clinic. Patients underwent ultrasound and biospecimen collection (blood

and oral rinse). Using the Lumify portable ultrasound system and mobile application (Philips Healthcare, Bothwell, WA), 8 standard images (transverse/sagittal views of tonsils, transverse/coronal views of tongue base [BOT], and bilateral lateral BOT) were collected; tumors were measured if identified. Pathologic details, HPV status, final staging, and radiologic findings were recorded. The sensitivity of each imaging modality was compared to the "final clinical diagnosis" (gold-standard), which was determined after each patient completed a full diagnostic work-up as part of standard clinical care. The final clinical diagnosis was determined by a head and neck surgeon and was based on the combined findings from the clinical and radiologic workup (minus ultrasound) and biopsy of the primary site as required. Oral HPV testing and multiplex serology will be performed once all patients are recruited.

Results: To date, 18 eligible patients were identified; 14 (78%) were enrolled (target enrollment=50). Following diagnostic work-up, 8 (57%) BOT and 6 (43%) tonsil primaries were diagnosed. FNAs or primary biopsies from 13 patients were clinically tested for p16 immunohistochemistry; 100% were positive. All patients (N=14) underwent ultrasound, 13 patients had CT imaging, 8 had FDG-PET/CT imaging and 10 had a biopsy of the primary site. Lesions were correctly identified in 13 of 14 patients (93%) using ultrasound and 8 of 8 (100%) patients using FDG-PET/CT. In the one case where ultrasound incorrectly identified the lesion in the right tonsil, FDG-PET/CT correctly identified it in the right BOT. In contrast, 7 out of 13 lesions (54%) were correctly identified using CT; 2 primaries were misidentified and in 4 (31%) cases no tumor was visualized. Ultrasound correctly identified tumors in all 4 cases where CT failed to visualize the primary and identified all 10 tumors with pathologic confirmation of the primary site. The smallest tumor identified was 1cm in greatest dimension; average size was 2.4cm.

Discussion: Our preliminary findings suggest that transcervical ultrasound is sensitive for detecting tumors within the oropharynx and may have greater accuracy than CT, even for tumors larger than 1cm.

AHNS066: THE LEARNING CURVE FOR TRANSORAL ENDOSCOPIC THYROID LOBECTOMY. Christopher R Razavi, MD, Jonathon O Russell, MD; Department of Otolaryngology – Head and Neck Surgery, Johns Hopkins University School of Medicine

Background: Post-thyroidectomy neck scarring can negatively impact patient quality of life.[1] Transoral Endoscopic Thyroidectomy via the Vestibular Approach (TOETVA) can circumvent this.[2-4] This approach has been utilized to safely and successfully perform thyroid lobectomy, total thyroidectomy, parathyroidectomy, and central neck dissections.[2-4] Given the growing interest and emerging literature regarding this approach, we sought to determine the learning curve for TOETVA to help guide safe and appropriate implementation of the procedure.

Methods: After institutional review board approval, cases of thyroid lobectomy via TOETVA performed by a single surgeon at the Johns Hopkins Hospital were reviewed. Primary outcome measures included successful completion of the intended procedure, operative time, permanent (>3 months) mental or recurrent nerve injury, and persistent (>3 months) hypoparathyroidism. Operative times of cases completed via the intended route were plotted as a function of case number and a simple moving average (SMA) of order three was used to identify the learning curve. The case number where the SMA plot plateaued was defined as the learning curve. Differences in means of operative times and demographic data were compared between two periodic groups, the early period (case 1 through the plateau case) and late period (all cases after the plateau case) using a t test.

Results: 18 endoscopic TONS thyroid lobectomies were attempted (11 right, 7 left). Procedural success rate was 17/18 (94%), with no incidence of permanent mental or recurrent nerve injury or hypoparathyroidism. The SMA plot for successfully completed cases plateaued at case 10. (Figure 1) There was a statistically significant difference (p= .006) in mean operative time in early (case 1-10, 210.6 +/- 64.0 minutes) versus late (case 11-17, 134.0 +/- 36.1 minutes) cases. There was no statistically significant difference in means of demographic data between time periods. (Table I)

Conclusion: The learning curve for TOETVA was 10 cases. Operative time decreased significantly after this

case with no change in other primary outcome measures or complications.

References

1.Choi Y, Lee JH, Kim YH, et al. Impact of postthyroidectomy scar on the quality of life of thyroid cancer patients. Annals of Dermatology. 2014;26(6):693-699.

2.Anuwong A. Transoral Endoscopic Thyroidectomy Vestibular Approach: A Series of the First 60 Human Cases. World Journal of Surgery. 2016;40(3):491-497.

3.Kim HY, Chai YJ, Dionigi G, Anuwong A, Richmon JD. Transoral robotic thyroidectomy: lessons learned from an initial consecutive series of 24 patients. Surgical Endoscopy. 2017.

4.Russell JO, Clark J, Noureldine SI, et al. Transoral thyroidectomy and parathyroidectomy – A North American series of robotic and endoscopic transoral approaches to the central neck. Oral Oncology. 2017;71:75-80.

Figure 1. Learning curve for TOETVA. Red line denotes simple moving average of operative times.

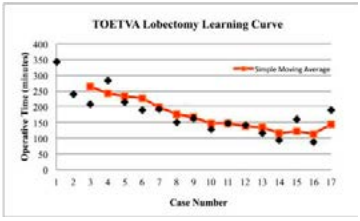


Table I. Patient Demographics

	Early Period	Late Period	All Cases	P Value
Age (mean,years)	41	46	43	0.24
BMI (mean,kg/m^2)	27.3	26.9	27.0	0.41
Specimen size (mean,cm)	4.31	5.05	4.62	0.14

AHNS004: A NOVEL FLEXIBLE ROBOT FOR THE TREATMENT OF OROPHARYNGEAL CARCINOMA IN TRANSORAL ROBOTIC SURGERY Jason Chan[1], Raymon Tsang[2], F C Holsinger[3], Eddy Wong[1]; [1]The Chinese University of Hong Kong, [2]The University of Hong Kong, [3]Stanford University

Introduction: Transoral robotic surgery is advancing at a rapid pace. Recently a next generation novel flexible, single-port robotic surgical system - da Vinci SP (Intuitive Surgical Inc. Sunnyvale), has been described. Here we report on our experience of the system in the world's first clinical use in transoral robotic surgery for squamous cell carcinoma of the oropharynx

Methods: Prospective, single centre study consistent with a stage 1 (Innovation) study described in the Innovation, Development, Exploration, Assessment, Long-term Study (IDEAL) framework. The study was registered on www.ClinicalTrials.gov (NCT03010813).

Results: The da Vinci SP could be successfully used in transoral resection of the oropharynx in 5 patients. One patient had an unknown primary and underwent a tongue base resection (Tx), four patients had tonsillar primary and a lateral oropharyngectomy (two T1 and two T2). The patient-side cart was docked at 90 degrees with the mouth opened with a Boyle-Davis mouth gag in all cases. The single port cannula located 10-15 cm away from the mouth opening to enable deployment of both the wrist and elbow joints. The camera arm and three instrument arms easily fit transorally, the movement was smooth, without restriction and collision. The extra arm significantly aided with traction for tumour resections. There were no conversions from the robotic procedure to an open approach and no adverse events related to the use of the da Vinci SP. All surgical margins were negative.

Conclusions: This first clinical study clearly demonstrate that the da Vinci SP system is safe and feasible to use in surgery of the oropharynx for oropharyngeal squamous cell carcinoma.

AHNS005: COMBINING FLUORESCENCE IMAGING WITH TRANSORAL ROBOTIC SURGERY TO IMPROVE HEAD AND NECK CANCER DETECTION Larissa Sweeny[1], Lindsay S Moore[1], Andrew Prince[1], Jason M. Warram[1], Kirk Withrow[1], William Carroll[1], Eben L. Rosenthal[2]; [1]University of Alabama at Birmingham, [2]Stanford

Background: During transoral robotic surgery (TORS), the surgeon is reliant primarily on visualization for detection of residual tumor, in the absence of traditional tactile feedback. In an effort to improve overall survival and recurrence rates for head and neck squamous cell carcinoma (HNSCC), cetuximab-IRDye800CW is being trialed for the detection of microscopic disease. This is the first report of using the Firefly fluorescence-imaging device in conjunction with the robot for real-time intraoperative detection of HNSCC.

Objective: Evaluate currently available

image guidance technology for detection of cetuximab-IRDye800CW labeled HNSCC intraoperatively during TORS.

Methods: A prospective piolet study of patients with HNSCC undergoing TORS was conducted (n=3; 2 oropharynx, 1 hypopharynx). This series was included as part of a clinical trial (Clinicaltrials.gov Identifier: NCT01987375) evaluating the safety and tumor-specificity of systemically injected cetuximab-IRDye800CW. Five days following systemic infusion with cetuximab-IRDye800CW (50mg), intraoperative fluorescence imaging was performed using the Firefly (Novadaq) during TORS procedures.

Results: Fluorescence contrast was observed at the site of the primary lesion during intraoperative imaging. There was an average tumor-to-background ratio (TBR) of 2.9 using the Firefly fluorescence-imaging device. Following resection, the wound bed was visualized with traditional bright light followed by fluorescence imaging. The fluorescence imaging was able to detect residual disease which was not visualized on bright light imaging alone. When compared to normal tissues, unresected residual tumor within the primary wound bed had an average TBR of 2.6. Post resection imaging of the tumor specimens were compared to control fluorescence imaging using the Luna imaging system (Novadaq) and confirmed high levels of fluorescence intensity within pathology-positive tissue with a TBR range of 3.0-4.6. Areas of increased fluorescence were confirmed to correlate with HNSCC cells on final histopathology.

Conclusion: This series demonstrated a novel approach with the potential for improving HNSCC detection during TORS. It utilizes the Firefly for real-time intraoperative imaging of HNSCC.

AHNS006: USING A FLUORESCENT CONTRAST AGENT TO ASSESS SURGICAL MARGINS IN HEAD AND NECK CANCER RESECTIONS Rebecca W Gao, MS[1], Tarn Teraphongphom, PhD[2], Nynke S van den Berg, PhD[2], Steven Hong, MD[2], Brock Martin, MD[3], Michael J Kaplan, MD[2], Vasu Divi, MD[2], Nicholas Oberhelman, BS[2], Robert Ertsey[2], Christina S Kong, MD[3], A. Dimitrios Colevas, MD[4], Eben L Rosenthal, MD[2]; [1]Stanford School of Medicine, [2]Department of Otolaryngology - Head and Neck Surgery, Stanford University, [3]Department of Pathology, Stanford University, [4]Division of Oncology, Department of Medicine, Stanford University

BACKGROUND: Surgery remains the gold standard in treatment of patients with oral cavity squamous cell carcinoma (HNSCC), and positive surgical margins are associated with local recurrences and poor clinical outcomes. To assess the surgical margin either as separate sections or from the specimen, intraoperative frozen section analysis is required, but this process is both labor and time intensive and waiting for results can prolong anesthesia time.

OBJECTIVE: We hypothesize that using a fluorescently-labeled, epidermal growth factor receptor (EGFR) antibody is a sensitive and specific method for the real-time, intraoperative detection of tumor-involved surgical margins.

METHODS: 20 patients with HNSCC were injected intravenously with increasing doses of panitumumab-IRDye800. All adult patients with biopsy-confirmed primary or recurrent HNSCC scheduled to undergo standard-of-care surgery with were eligible for the study. Cohort 1 (n=3) received an intravenous microdose of 0.06 mg/kg; cohort 2 (n=5) received 0.5/kg; cohort 3 (n=7) received 1mg/kg, and cohort 4 (n=5) received a flat dose of 50 mg. Specimens obtained from the wound bed and sent separately were imaged intraoperatively on the back table with a hand-held, close-field fluorescence imaging device. Fluorescence signal intensity and location were correlated to the final pathology results to determine the sensitivity and specificity. For cohort 4, the resecting surgeon was asked to predict which margins were tumor-involved and the results were compared to predictions by the fluorescence signal.

RESULTS: The average signal-to-background ratio (SBR) of positive margins in cohort 2 was 18.14 and 4.63 for negative margins (p=0.0005) with a sensitivity of 100%, specificity of 90%, area under the curve (AUC) of 0.98 (p=0.007), positive predictive value (PPV) of 80% and negative predictive value (NPV) of 100%. The average SBR for positive margins in cohort 4 was 45.42 and 9.96 for negative margins (p<0.0001) with a sensitivity of 100%, specificity of 76%, AUC of 0.95 (p=0.002), PPV of 50%, and NPV of 100%. Compared to the resecting surgeon, the fluorescence signal had

a much greater sensitivity (33.3% vs. 100%) and NPV (78.6% vs. 100%) and less specificity (100% vs. 76%) and PPV (100% vs. 50%). Cohort 1 and 3 were excluded since only patients in cohort 2 and cohort 4 had tumor-involved margin specimens. Analysis of the deep margin of the primary tumor showed a positive correlation tumor proximity to the specimen edges and fluorescence SBR.

CONCLUSION: Fluorescence imaging using panitumumab-IRDye800CW has the potential to provide real-time, highly sensitive and specific information in selecting which margins should be prioritized for further pathological analysis, leading to savings of time and labor.

SS02: RECONSTRUCTION AND REHABILITATION

AHNS007: NATIONAL VARIATIONS IN FIBULA FREE FLAPS AND THE ROLE OF INSTITUTIONAL VOLUME IN COSTS AND SURGICAL COMPLICATION RATES

Rance J Fujiwara, BS, Elliot Morse, BS, Saral Mehra, MD, MBA; Yale University School of Medicine

Importance: Recognition of cost variations may uncover avenues to decrease health expenditures. While variations in costs and complications have been measured for head and neck cancer patients in general, no studies have been conducted to quantify these differences or the importance of surgical volume in patients undergoing fibula free flap reconstruction.

Objective: To measure variations in costs and surgical complications for fibula free flap reconstruction, and to measure the association of costs and complications with hospital surgical volume

Design: Cross-sectional analysis, 2001-2011

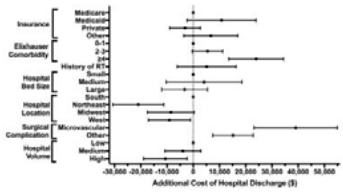
Setting: Healthcare Cost and Utilization Project National Inpatient Sample

Participants: Patients undergoing fibula free flap with primary admission diagnosis of head and neck cancer

Main Outcome(s) and Measure(s): Main outcomes were hospital costs and postoperative surgical complications. Explanatory variables included patient- and hospital-level demographics. This study employed a generalized linear model to quantify the significance of patient- and hospital-level factors with costs, and binary logistic regression to measure associations with surgical complications.

Results: A total of 504 patients with median age 60.5 years (interquartile range, 54-69) met inclusion criteria. Most were treated at academic institutions (95.8%), and 106 (21.0%) were treated at high-volume hospitals, defined as the 95th percentile among hospitals (>5 cases per year). High-volume institutions were associated with a $10,617.04 (95% confidence interval [CI] 2,308.27–18,295.80, p=0.01) decrease in costs compared to low-volume institutions. The Northeast ($20,965,86 [CI 1,1241.58–30,690.14], p<0.001) and West ($9,075.30 [CI 1079.07–17,071.53], p=0.03) had decreased costs relative to the South. Microvascular complications were responsible for a $39,050.25 (CI 23,167.69–54,932.82, p<0.001) cost increase in costs. High-volume hospitals had significantly decreased surgical complication rates (OR 0.43 [CI 0.24-0.76], p=0.004), though no geographic variations in complications were observed.

Conclusions and Relevance: Significant cost variation exists among patients undergoing fibula free flap reconstruction for head and neck cancer. High institutional volume was associated with decreased costs and improved postoperative outcomes. However, geographic cost differences did not correspond with surgical complication rates, suggestive of unmeasured variables or differences in patterns of care. In the context of rising healthcare costs, further efforts should be conducted to identify opportunities to decrease costs and improve value of care.



AHNS008: CELECOXIB DECREASES ACUTE POSTOPERATIVE OPIOID REQUIREMENTS AFTER HEAD AND NECK RECONSTRUCTION WITH FREE TISSUE TRANSFER: A MATCHED-COHORT STUDY

Patrick Carpenter, MD, Hilary McCrary, MD, Vanessa Torrecillas, MD, Amanda Kull, MD, Jason P Hunt, MD, Marcus M Monroe, MD, Luke O Buchmann, MD, Richard B Cannon, MD; University of Utah

Objectives: Head and neck oncology surgery with free tissue reconstruction is associated with significant postoperative pain. Opioids are classically employed for postoperative analgesia but are associated with significant side effects including respiratory depression, nausea, constipation, and high rates of dependence and addiction. Celecoxib is a selective COX-2 non-steroidal anti-inflammatory drug (NSAID) and has been shown to achieve analgesia in acute pain settings; however, it is not widely utilized after head and neck free tissue transfer. The primary aim of this study is to investigate the effect Celecoxib has on opioid requirements in the postoperative setting after head and neck surgery and reconstruction with free tissue transfer.

Methods: A retrospective matched-cohort study was conducted at the University of Utah evaluating patients who had undergone head and neck oncology surgery with free tissue reconstruction between June 2015 and August 2017. Utilization of Celecoxib began in Sept 2016 after consultation with the Acute Pain Service and initiation of a quality improvement project. Since that time it has been administered routinely in a scheduled fashion to all postoperative free flap patients, thus 2 cohorts of consecutive patients were eligible for inclusion. Patients who received celecoxib in the postoperative setting were matched by stage and site with patients who did not receive celecoxib. Primary outcomes were oral, intravenous (IV), and total morphine equivalents used in the postoperative setting per day. Secondary outcomes were complications after surgery.

Results: There were 51 patients in the Celecoxib cohort and 50 patients in the control cohort that met inclusion criteria. Clinicopathologic data comparing the cohorts is illustrated in Table 1. Treatment with Celecoxib in the postoperative setting was significantly associated with decreased mean utilization of oral (29.4mg vs. 39.5mg; p=0.04), IV (1.5mg vs. 5.3mg; p<0.001), and total (31.8mg vs. 45mg; p=0.03) opioid morphine equivalents used per day. Patients who received Celecoxib after head and neck free tissue reconstruction did not have an increased risk of flap dehiscence/surgical site infection (16% vs. 13%; p= 0.44), hematoma (1.9% vs. 4.0%; p= 0.21), or free flap failure rate (4.6% vs. 4.3%; p= 0.51) when compared to controls.

Conclusion: Utilization of Celecoxib for head and neck oncology patients after reconstruction with free tissue transfer results in a significant decrease in oral, IV, and total opioid requirements without increasing surgery and flap related complications. Particularly, inclusion of Celecoxib in our new pain management regimen has resulted in a 3.5 fold decrease in IV opioid usage for breakthrough and uncontrolled pain for our patients.

Table 1. Clinicopathologic factors compared between celecoxib and control cohorts

	Controls	Celecoxib	p value
# Patients	50	51	
Age (mean years)	65	63	0.2
Smoking History	21	23	0.42
Body Mass Index	26.1	28.2	0.73
T4 Lesion	24	25	0.32
Oral Cavity Resection	34	35	0.61

AHNS009: INFRAHYOID FLAP FOR RECONSTRUCTION OF HEAD AND NECK DEFECTS Marianne Nakai, MD, Juliana Maria de Almeida Vital, MD, Marcelo Benedito Menezes, PhD, William Kikuchi, MD, Antonio Jose Goncalves, PhD; Irmandade da Santa Casa de Misericórdia de São Paulo

The infrahyoid flap was first described as a myofascial flap by Clairmont and Conley on 1977. It is mainly used for oral cavity, oropharyngeal defects, but it has also been described for parotid region, pharyngolaryngeal tract and cervical tracheal reconstruction defects and as myofascial transposition preventing fistula after total laryngectomy and for reconstruction of iatrogenic fistulas on cervical spine surgeries. It may also be an alternative for microsurgical free flaps in elderly or patients with clinical comorbidities. The infrahyoid flap is harvested after the neck dissection and it usually is ipsilateral to the defect.

Materials and Methods: A total of 12 patients submitted to reconstruction of head and neck defects from November of 2013 to May of 2017 and followed up until October of 2017 were retrospectively studied.

Results: Twelve patients were included, 3 females and 9 males, with an average age of 62,7 years. From those 12

patients, the flap was used for the reconstruction of oral cavity cancer resection on 8 patients (04 tongue, 03 floor of the mouth and 01 cheek mucosa). The others were single cases of: oropharyngeal cancer, laryngeal cancer, laryngocutaneous fistula and tracheocutaneous fistula. The average hospital stay duration was 5,33 days, with only one patient staying longer than 6 days due to previous clinical comorbidities. There was no severe complication, such as total loss of the flap or death related to the procedure. Regarding the adverse outcomes, there was one case of partial loss of the skin of the donor site, which was covered with skin graft; one case of laringocutaneous fistula, with spontaneous closure on the 30th post-operative day; 2 cases of temporary orocutaneous fistula, with no need of additional interventions; and one had partial loss of the flap's skin paddle. As for the functional outcomes, 10 patients have complete rehabilitation with no feeding tube or thracheotomy. Two patients have partial rehabilitation, one due to dysarthria, but with intelligible voice, and other with mild dyspnea due to reductant tissue but without tracheotomy. This last-mentioned patient is still on clinical evaluation of other causes of dyspnea. From this group, one patient died from a second primary tumor one year after the procedure.

Discussion: Most local flaps used for head and neck reconstruction are bulky, interfering negatively with functional outcomes on some cases, on the other hand, microsurgical free flaps demand a highly specialized team, carry expensive hospital costs and are not suitable for patients with major clinical comorbidities. Conversely, the infrahyoid flap is a thin and flexible myocutaneous local flap, which allows mobility of the preserved structures surrounding the defect, it is easy to harvest with minimal donor site morbidity, and does not require another surgical team.

Conclusions: The infrahyoid flap is a versatile and safe option for head and neck defects reconstruction. Our cases presented low rates of complications, with no total flap loss or major complications related to the procedure. The majority of the patients have complete functional rehabilitations and the remaining have minor functional impairment.

AHNS010: PATTERNS OF LOSS OF VENOUS FLOW IN HEAD AND NECK MICROVASCULAR SURGERY WITH DOUBLE VENOUS ANASTOMOSES

Elliot Morse, BS, Rance Fujiwara, BS, Jacqueline Dibble, APRN, Matthew Pierce, MD, Saral Mehra, MD, MBA; Yale University, Department of Surgery, Division of Otolaryngology

Background: Multiple studies have shown superior outcomes with two- versus one-vein anastomoses in head and neck reconstruction. However, the physiology of these flaps remains unexplored. There is speculation that one vein becomes dominant in two-vein flaps, and that there are higher rates of venous thrombosis in two-vein flaps due to decreased blood flow. In addition, it is unknown if certain donor and recipient veins are more prone to venous thrombosis in two-vein flaps.

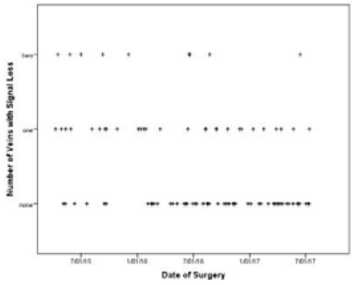
Methods: The venous flow coupler was used in 94 consecutive head and neck free flap cases performed by a single surgeon with double venous anastomoses ("two-vein flaps"). Two anastomoses were performed whenever appropriate donor and recipient vessels were available. We have previously shown high sensitivity and specificity of the flow coupler for loss of venous flow requiring operating room (OR) takeback in one-vein flaps therefore signal loss was considered indicative of venous flow loss. Two-vein flaps were analyzed for patterns of venous flow loss by signal at the end of the case, recipient vein, and donor vein.

Results: Overall rates of permanent signal loss were equivalent in one- versus two-vein flaps (26% versus 23%, p=0.765). The remainder of the analysis was performed in only two-vein flaps. 52 (59%) had good venous signal in both veins, 27 (31%) had permanent signal loss in one vein, and 9 (10%) had permanent signal loss in both veins (figure 1). OR takeback was required in 3 (5%) of flaps with good signal in both veins at the end of the case, and 1 (5%) of flaps with good signal in only one vein at the end of the case. 3 flaps had poor signal in both veins at the end of the case; of these, 1 (33%) was taken back to the OR.

The most common recipient veins used in two-vein flaps were external jugular vein (EJV) and common facial vein (CFV), making up 71 (40%) and 46 (26%) of veins. 23 (32%) of EJV anastomoses, versus 5 (11%) of CFV anastomoses lost venous flow. In flaps in which signal was lost in one vein, 16/23 (57%) lost

signal in the EJV versus 1/9 (11%) in the CFV. In radial forearm flaps, signal loss occurred in 10 (24%) of cephalic veins and 10 (22%) of venae comitantes (VC). In the 12 radial forearm flaps with both VC and cephalic anastomoses in which signal was lost in one vein, 7 (58%) lost signal in the VC and 5 (42%) in the cephalic vein.

Conclusions: Flaps with one- and two-vein anastomoses have similar rates of venous flow loss. Both veins retain flow in most two-vein flaps, however a single vein loses flow in a significant number of flaps. Higher rates of loss of flow were seen in EJV versus CFV anastomoses. In radial forearm flaps, similar rates of venous flow loss were seen in cephalic and VC anastomoses.



AHNS011: FRAILTY AS A PREDICTOR OF MORBIDITY AND MORTALITY IN MICROVASCULAR RECONSTRUCTIVE HEAD AND NECK PATIENTS Kelly F Moyer, Shaum S Sridharan; Medstar Georgetown University Hospital

Background and Objective: Frailty has been previously demonstrated in the literature to have a strong association with poor outcomes in surgical patients. To our knowledge, frailty has not been evaluated in microvascular reconstructive head and neck patients. The objective of this study is to determine frailty as a predictor of morbidity and mortality in microvascular reconstructive head and neck patients by using the modified frailty index (mFI). It is hypothesized that increasing modified frailty index is a positive predictor for poor post-operative outcomes, including mortality, significant complications and increased length of stay.

Methods and Analysis: Retrospective analysis of 106 patients who underwent microvascular free flap reconstructive surgeries in the otolaryngology department between 2013 – 2017. Patients included underwent anterolateral, forearm, fibula or serratus free flaps. All free flaps were performed by surgeons within the otolaryngology department of two major tertiary-care hospitals. Modified Frailty Index was determined for each patient and primary outcomes were recorded including mortality and Clavien-Dindo Grade IV Complications. Secondary outcomes include flap failure, return to OR, length of ICU stay, length of hospital stay, and readmission rate.

Results: 106 patients met inclusion criteria. Average age of patients was 61. The mean mFI was 0.09 and the range was 0 to 0.55. Of those patients, 12 patients had an mFI greater than or equal to 0.28. The remaining 94 patients had mFI < 0.28. Patients with greater mFI were more likely to have post-operative Grade IV complications (30% vs 10%), longer ICU stay (6.3 days vs. 5.4) and total length of hospital stay (15.9 days vs. 12.9). As a secondary measure, patients with mFI greater than 0.28 were also more likely to return to the OR (30% vs 20%). Mortality was not associated with increased modified frailty index.

Conclusion: Modified frailty index is associated with increased morbidity in this retrospective analysis of microvascular reconstructive head and neck patients. The mFI in head and neck reconstructive patients can be a useful tool in preoperative planning and risk stratification.

AHNS012: MANDIBULAR RECONSTRUCTION WITH THE TIP OF SCAPULA FREE FLAP Jeffrey Blumberg, MD[1], Paul Walker, MD[2], Stephanie Johnson-Obaseki, MD[3], Christopher Yao, MD[4], Eugene Yu, MD[4], Marie-Constance Lacasse, MD[4], Stephanie Johnson-Obaseki, MD[3], David Lam, MD, DDS, PHD[4], Brian Rittenberg, DDS[5], Douglas Chepeha, MD[4], John de Almeida, MD[4], David Goldstein, MD[4], Ralph Gilbert, MD[4]; [1]University of North Carolina at Chapel Hill, [2]Loma Linda University, [3]University of Ottawa, [4]University of Toronto, [5]Mount Sinai Hospital, Toronto, ON

Objective: Free tissue transfer with a bony flap after segmental mandibulectomy to restore mandibular continuity has become the reconstructive option of choice. This approach optimizes function and anesthetics often in a single operation. Traditionally, options for reconstruction included free fibula, iliac crest, lateral border of the scapula and, now,

scapular tip based on the angular artery. The aim of this study was to describe the utility and versatility of the scapular tip osteomyogenous flap (with or without a chimeric skin paddle from the subscapular system) in a series of mandibulectomy patients, analyze the potential for dental rehabilitation, and examine donor site morbidity.

Methods: Retrospective case series of consecutive patients (2005-2016) undergoing mandibulectomy and microvascular reconstruction with the scapular tip osteomyogenous flap. Patient demographics, indication of surgery and characteristics of the bone harvested and inset were investigated. Outcome measures included flap survival, bony union, perioperative complications, and potential for dental rehabilitation. Donor site morbidity was evaluated using the validated Disabilities of the Arm, Shoulder and Hand (DASH) questionnaire. Suitability for dental rehabilitation was independently evaluated by two oral surgeons based on post-operative CT scans.

Results: 121 patients were identified (42 females with a mean age of 64y) with the majority undergoing reconstruction after mandibulectomy for malignant disease (75%) followed by osteoradionecrosis of the mandible (18%). The majority of the defects were lateral (body) and often included a portion of the symphysis or ramus. 55% underwent at least one osteotomy and 84% had a chimeric flap with an additional soft tissue component. 90 patients had postoperative imaging available for review at a minimum of six weeks after surgery. Radiographically, the average inset bone length was 7.1cm (5 – 13cm). Complete or partial bony union was observed at the proximal and distal osteotomy in 77.9% and 82.6% of patients, respectively. Of the 82 post-operative CT scans available to our oral surgeons, 97.5% met criteria for dental rehabilitation with implants. Mean/median shoulder disability as measured by the Disabilities of the Arm, Shoulder, and Hand questionnaire and time elapsed since surgery was 20.7/15.8 and 24.3/12.5mo, respectively.

Conclusions: To our knowledge, this is largest series of patients undergoing tip of scapula free tissue transfer for mandibular reconstruction reported in the literature. Here, we demonstrated the scapular tip is an excellent option for reconstruction of most segmental mandibular defects with the option of osteotomy, excellent bony union rates, low donor site morbidity and potential for dental rehabilitation. Furthermore, it provides an excellent alternative to a fibular free flap in patients with peripheral vascular disease, need for early ambulation post-operatively (such as the elderly), active patients reliant on their lower extremities or those who need extensive soft tissue reconstruction in addition to bone.

SS03: IMMUNOTHERAPY AND ADJUVENT THERAPIES

AHNS013: ADJUVANT RADIATION FOR POSITIVE MARGINS IN ADULT H&N SARCOMAS IS ASSOCIATED WITH IMPROVED SURVIVAL: ANALYSIS OF THE NATIONAL CANCER DATABASE

Richard B Cannon, MD, Patrick Carpenter, MD, Amanda J Kull, MD, Sam Francis, MD, Luke O Buchmann, MD, Jason P Hunt, MD, Shane Lloyd, MD, Ying J Hitchcock, MD, John R Weis, MD, Marcus M Monroe, MD; University of Utah

Objectives: There are no randomized trials to support the use of adjuvant radiation for adult head and neck sarcomas, therefore treatment trends vary between institutions. Positive surgical margins are a known risk factor for recurrence and poor survival outcomes in sarcoma treatment. This study uses the National Cancer Database (NCDB) and aims to investigate whether treatment with adjuvant radiation is associated with improved survival outcomes in adult head and neck sarcoma patients with a positive surgical margin.

Methods: There were 5,950 adult patients treated surgically for a head and neck sarcoma in the NCDB from 2004 to 2013 and 1,142 of these patients had a positive margin after surgical resection. There were 839 microscopic positive margins and 303 macroscopic positive margins. For patients with a positive margin, 969 patients were treated at academic/research cancer programs and 356 were treated at community-based cancer programs. 5-year overall survival (OS) was the primary outcome.

Results: Treatment with adjuvant radiation therapy was significantly associated with improved 5-year OS for all patients with a positive surgical margins (57% versus 48%; p=0.002), those with a microscopic positive margins (57% versus 49%; p=0.010), and those with a macroscopic positive

margins (57% versus 41%; p=0.036) (**Figures 1, 2, and 3**, respectively). Improved OS was significant after controlling for other known covariates on multivariate analysis (HR 0.76; 95% CI 0.64 – 0.90, p=0.001). Patients treated at academic/research cancer programs were more likely to received adjuvant radiation for a positive surgical margin (60%) than those patients treated at community-based cancer programs (34%; p<0.001).

Conclusion: Adjuvant radiation therapy is associated with a significant survival benefit for adult head and neck sarcoma patients with both a microscopic and macroscopic positive surgical margin. Treatment at an academic/research cancer program was associated with increased utilization of adjuvant radiation for these patients.

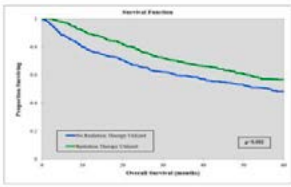


Figure 1. Overall survival comparing patients that received adjuvant radiation therapy and those that did not in all patients with positive margins (p=0.002).

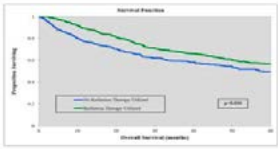


Figure 2. Overall survival comparing patients that received adjuvant radiation therapy and those that did not in patients with microscopically positive margins (p=0.010).

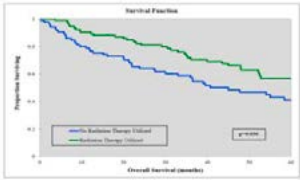


Figure 3. Overall survival comparing patients that received adjuvant radiation therapy and those that did not in patients with macroscopically positive margins (p=0.036).

AHNS014: PD-L1 MAY SERVE AS A PROGNOSTIC BIOMARKER IN HPV-ASSOCIATED HEAD AND NECK CANCER PATIENTS Austin K Mattox[1], Francesco Sabbatino[2], Vincenzo Villani[2], Soldano Ferrone[2], William C Faquin[3], Hang Lee[4], Jill Brooks[5], Armida Lefranc-Torres[6], Derrick T Lin[6], Lori J Wirth[7], Christopher C McConkey[8], Hisham Mehanna[5], Sara I Pai[2]; [1]Department of Oncology, Johns Hopkins University School of Medicine, Baltimore, MD, [2]Department of Surgery, Massachusetts General Hospital, Harvard Medical School, Boston, MA, [3]Department of Pathology, Massachusetts General Hospital, Harvard Medical School, Boston, MA, [4]Biostatistics Center, Massachusetts General Hospital, Harvard Medical School, Boston, MA, [5]Institute of Head and Neck Studies and Education (InHANSE), University of Birmingham, UK, [6]Department of Otology and Laryngology, Massachusetts Eye and Ear Infirmary, Boston, MA, [7]Department of Medical Oncology, Dana-Farber Cancer Institute, Harvard Medical School, Boston, MA, [8]Warwick Clinical Trials Unit, University of Warwick, UK

Several mechanisms of immune evasion have been reported in head and neck squamous cell carcinomas (HNSCCs), including the down-regulation of the HLA Class I antigen processing machinery (APM) components and activation of the PD-1:PD-L1 axis. Programmed death-ligand 1 (PD-L1) expression can be induced by interferon-gamma secretion by T cells and may serve as a marker for the activation of tumor antigen-specific immune responses. Since defects in HLA Class I/II expression can impact tumor antigen-specific immune responses, we explored PD-L1 expression in the setting of HLA Class I/II mutations in HNSCCs and correlated the expression of these markers with clinical outcome to standard of care treatment.

We analyzed the combined published and provisional dataset for HNSCC for genomic alterations in HLA Class I heavy chains (HLA-A/B/C), β_2 microglobulin (β_2M), and HLA Class II β and βchain (HLA-DR/DQ/DP) genes in 406 HNSCCs and report that mutation frequencies in APM components are infrequent. When alterations in APM were present, non-HPV-HNSCC tended to have more mutations in HLA Class I alleles, while HPV-HNSCC tended to have more mutations in β_2M,

which were truncating mutations or homozygous deletions **(Figure 1)**. We found that HLA Class I mutations were associated with decreased OS in both HPV-HNSCCs (specifically HLA-A, log rank p = 0.00252) and non-HPV-HNSCCs (specifically HLA-C, log rank p = 0.0328), as shown in **Figure 2**.

We then evaluated whether the APM gene mutation frequency correlated with the frequency of cell surface protein expression of HLA Class I and II in HNSCCs. HLA Class I protein expression was present in 85.7% (66 of 77) of HNSCCs, whereas HLA Class II protein expression was present in 41.3% (31 of 75) of HNSCCs. PD-L1 was expressed within the tumor microenvironment of 84.4% (54 of 64) of HNSCCs and was associated with HLA Class I protein expression (Fisher's exact p = 0.035), which was most significant in HPV-HNSCCs (Fisher's Exact p = 0.008). PD-L1 expression did not correlate with prognosis to standard of care treatment in HNSCC. However, in HPV-HNSCC patients, PD-L1 positivity demonstrated a trend towards improved overall survival (Log rank p = 0.0674). Furthermore, a trend emerged where the combination of HPV status and HLA Class II expression can predict PD-L1 status within the tumor microenvironment (p = 0.08).

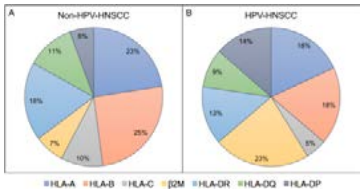


Figure 1 Spectrum of mutations in antigen presenting machinery observed in non-HPV-HNSCC (A) and HPV-HNSCC (B). The mutation frequency of β_2M was markedly higher in HPV-HNSCC.

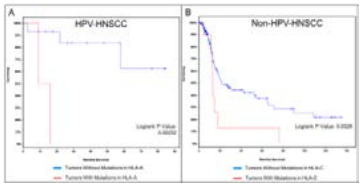


Figure 2 Kaplan-Meier curves of overall survival by presence of mutations in HLA-A in HPV-HNSCC (A) and in HLA-C in non-HPV-HNSCC (B). Mutations in HLA-A in HPV-HNSCC and mutations in HLA-C in non-HPV-HNSCC are associated with decreased OS. The red line indicates tumors with mutations present, while the blue line indicates tumors with no mutations present.

AHNS015: THE ADDITION OF CHEMOTHERAPY TO THE ADJUVANT THERAPY OF LATE-STAGE SALIVARY SQUAMOUS CELL CARCINOMA IS ASSOCIATED WITH IMPROVED PATIENT SURVIVAL Shayan Cheraghlou, BA, Cheryl K Zogg, MSPH, MHS, Michael D Otremba, MD, Henry S Park, MD, MPH, Aarti Bhatia, MD, MPH, Saral Mehra, MD, MBA, Heather A Osborn, MD, Wendell G Yarbrough, MD, Benjamin L Judson, MD; Yale Medical School

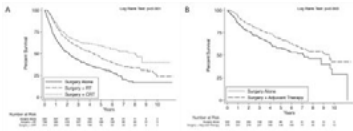
Background: Salivary squamous cell carcinomas (SCC) represent a unique disease entity, as many are thought to represent metastases from primary cutaneous malignancies. Nevertheless, they represent a significant proportion of parotid gland cancers and have a notably poor prognosis. Recently, there has been much debate in the literature as to the utility of adjuvant chemotherapy in the treatment of these malignancies, with most studies concluding that there is no survival benefit. We aim to investigate the outcomes associated with the use of adjuvant radiotherapy and chemoradiotherapy in the treatment of early- and late-stage salivary SCC.

Methods: A retrospective study of 2285 adult salivary SCC diagnosed from 2004-2014 in the NCDB was conducted. Patients were divided into early- (I/II) and late-stage (III/IV) groups. Demographic, facility, tumor, and survival variables were included in the analyses. Multivariate Cox survival regressions as well as univariate Kaplan-Meier analyses were conducted.

Results: The use of adjuvant chemoradiotherapy for late-stage patients was associated with improved survival compared to the use of adjuvant radiotherapy alone (HR 0.774, p=0.026). 5-year survival for late-stage patients treated with surgery alone, surgery with adjuvant radiotherapy, and surgery with adjuvant chemoradiotherapy was 31.1% (SE: 2.5), 45.6% (SE: 2.2), and 58.9% (SE: 3.4) (A). Use of adjuvant therapy (either chemoradiotherapy or radiotherapy alone) was associated with improved survival for early-stage patients (HR 0.746, p=0.037) (B).

Conclusion: The addition of chemotherapy to the adjuvant therapy

of late-stage patients with salivary SCC may result in improved long-term survival. Expanded use of adjuvant therapy for early-stage disease may also improve patient outcomes.



AHNS016: ADJUVANT RADIATION FOR T1-2N1M0 ORAL CAVITY CANCER IS ASSOCIATED WITH IMPROVED SURVIVAL OUTCOMES: ANALYSIS OF THE SEER DATABASE Richard B Cannon, MD, Hailey M Shepherd, BS, Vanessa Torrecillas, MD, Patrick Carpenter, MD, Sam Francis, MD, Luke O Buchmann, MD, Marcus M Monroe, MD, Shane Lloyd, MD, Donald Cannon, MD, Ying J Hitchcock, MD, John R Weis, MD, Jason P Hunt, MD; University of Utah

Objectives: There is limited high-quality data that has compared treatment strategies for oral cavity cancer, and recent evidence has demonstrated the survival benefit of elective neck dissection for patients with cT1-2N0 tumors. Due to the high rate of regional positivity, numerous patients are up-staged to pT1-2N1 with limited neck disease and it is currently unknown how important adjuvant radiation is for these patients. Due to the lack of evidence, treatment trends vary between institutions. The primary purposes of this study were to use the Surveillance, Epidemiology, and End Results (SEER) database to evaluate current practice patterns in the use of adjuvant radiation for T1-2N1 oral cavity cancer patients and to investigate its efficacy in the population-based setting.

Methods: There were 835 adult patients treated surgically for T1-2N1 oral cavity cancers from 1988 to 2008 identified in the SEER database. Forty-three percent of patient had T1N1 tumors and 57% patients had T2N1 tumors. The breakdown of patients treated with adjuvant radiation is summarized in Table 1. 5-year disease-specific survival (DSS) and overall survival (OS) were the primary outcomes.

Results: Treatment with adjuvant radiation therapy was significantly associated with improved 5-year DSS (65% versus 51%; p<0.001) and OS (54% versus 44%; p=0.007) for patients with T1N1 tumors (Figures 1 and 2, respectively). Treatment with adjuvant radiation therapy was also significantly associated with improved 5-year DSS (58% versus 38%; p=0.009) and OS (48% versus 28%; p=0.004) for patients with T2N1 tumors (Figures 3 and 4, respectively). Improved DSS and OS were significant after controlling for other known covariates on multivariate analysis (HR 0.62, 95% CI 0.47 – 0.81, p=0.001; HR 0.63, 95% CI 0.50 – 0.80, p<0.001). The percent utilization of adjuvant radiation has significantly increased through the study time period from 63% to 74% (p<0.001).

Conclusion: Adjuvant radiation is associated with a significant survival benefit for patients with T1-2N1 oral cavity cancer, with an absolute DSS improvement of 16 percentage points and OS improvement of 14 percentage points in this population-based study. Utilization of adjuvant radiation is increasing over time for these patients.

Table 1. Utilization of adjuvant radiation therapy in patients with T1-2N1 oral cavity cancers.

	Adjuvant Radiation (%)	No Radiation (%)	Total	p value
# of Pts.	608 (73%)	227 (27%)	835	-
T1N1	245 (68%)	117 (32%)	362	0.004
T2N1	363 (77%)	110 (23%)	473	

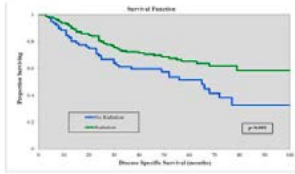


Figure 1. DSS comparing patients that received adjuvant radiation therapy and those that did not for T1N1 oral cavity cancer (p<0.001).

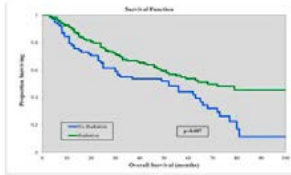


Figure 2. OS comparing patients that received adjuvant radiation therapy and those that did not for T1N1 oral cavity cancer (p=0.007).

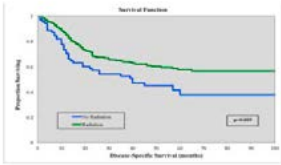


Figure 3. DSS comparing patients that received adjuvant radiation therapy and those that did not for T2N1 oral cavity cancer (p=0.009).

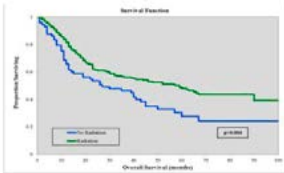


Figure 4. OS comparing patients that received adjuvant radiation therapy and those that did not for T2N1 oral cavity cancer (p=0.004).

AHNS017: DOES PERIOPERATIVE OXANDROLONE IMPROVE NUTRITIONAL STATUS IN PATIENTS WITH CACHEXIA RELATED TO HEAD AND NECK CARCINOMA? Angela M Osmolak, MD, Cristine Klatt-Lasso, MD, Amber Price, MD, Jose A Sanclement, MD, Greg A Krempl, MD; University of Oklahoma Health Science Center

Background: Cancer related cachexia is characterized by progressive weight loss, anorexia, metabolic alterations, depletion of lipid stores and severe muscle wasting which leads to a constant state of catabolism. In more than 50% of advanced head and neck cancer (HNC) patients, this catabolic state is clinically evident at the time of initial diagnosis. As a result, many of these patients demonstrate difficulties in wound healing in the perioperative period. Anabolic steroids have been studied as an aid in the reversal of this catabolic state. Studies including burn victims, post-operative patients, AIDS wasting myopathy patients, and cancer patients have demonstrated improvements in nitrogen balance, weight, and quality of life measures with the use of anabolic steroids. To date, the potential utility of anabolic steroids in perioperative cachectic HNC patients has not been determined.

Objective: To investigate the impact of the anabolic steroid, oxandrolone, on the state of cancer cachexia in HNC patients with impaired wound healing during the perioperative period as measured by prealbumin levels and clinical wound healing.

Design: Retrospective review of pre and post oxandrolone administration prealbumin levels in postoperative HNC patients at the University of Oklahoma Health Science Center.

Results: Eighteen patients, aged 44 – 75, received oxandrolone for an average of 22.8 days (range 7-45). Eleven (61%) were men and seven (39%) were women. The median pre-treatment prealbumin was 88.5 mg/L (range 75 to 160 mg/L). The median post-treatment prealbumin was 227 mg/L (range 148 to 370 mg/L). The median interval improvement of the prealbumin level was 131.5 mg/L (range 61 to 252 mg/L), which was statistically significant ($p<0.001$). The treatment duration to detect improvement in prealbumin levels was 7 – 14 days, with continued increases seen during treatment. Concurrent improvement in wound healing was also observed.

Conclusion: Perioperative administration of oxandrolone statistically improved nutritional status as measured by prealbumin in perioperative HNC patients. Clinical improvement in the healing of surgical wounds was identified in all patients and correlated with improved prealbumin levels. Oxandrolone administered 10 mg BID may be a useful adjunct in the perioperative care of nutritionally deficient HNC patients.

AHNS018: LONGITUDINAL IMMUNE COMPLEXITY ANALYSIS USING 29-BIOMARKER MULTIPLEX IMMUNOHISTOCHEMISTRY IN PRIMARY AND RECURRENT HEAD AND NECK SQUAMOUS CELL CARCINOMA Grace L Banik, MD[1], Rie Kawashima, DDS, PhD[2], Tiziana Cotechini, PhD[2], Sara I Pai, MD, PhD[3], Armida LeFranc-Torres[4], Derrick T Lin, MD[4], Lori J Wirth, MD[5], Daniel R Clayburgh, MD, PhD[6], Lisa M Coussens, PhD[7], Takahiro Tsujikawa, MD, PhD[8]; [1]Department of Otolaryngology-Head and Neck Surgery, Oregon Health and Science University, [2]Department of Cell, Developmental and Cancer Biology, Oregon Health and Science University, [3]Department of Surgery, Massachusetts General Hospital, Harvard University, [4]Department of Otolaryngology, Massachusetts Eye and Ear Infirmary, [5]Department of Medicine, Massachusetts General Hospital, Harvard University, [6]Department of Otolaryngology-Head and Neck Surgery,

Oregon Health and Science University; Knight Cancer Institute, Oregon Health and Science University, [7]Department of Cell, Developmental and Cancer Biology, Oregon Health and Science University; Knight Cancer Institute, Oregon Health and Science University, [8]Department of Otolaryngology-Head and Neck Surgery, Oregon Health and Science University; Department of Cell, Developmental and Cancer Biology, Oregon Health and Science University; Knight Cancer Institute, Oregon Health and Science University; Department of Otolaryngology, Head and Neck Surgery, Kyoto Prefectural University of Medicine

IMPORTANCE: The problem of recurrence in head and neck squamous cell carcinoma (HNSCC) remains challenging with persistently high rates and generally poor prognosis despite advances in detection and treatment. Recently approved immunotherapies highlight a potential key interaction between the tumor and host immune system in the progression of HNSCC; however a large number of patients will fail to achieve a sustained response to immunotherapy, bringing increased urgency to understanding the dynamic tumor-immune interaction in order to better stratify patients and identify alternative therapeutic targets. Historically, evaluation of the tumor-immune microenvironment has been constrained by inherent limitations in immunohistochemical (IHC) analysis and tissue availability; recent technological innovations have mitigated this issue.

OBJECTIVE: To comprehensively characterize the tumor-immune microenvironment in primary and recurrent HNSCC using a novel multiplex immunohistochemistry (mIHC) technology.

DESIGN, SETTING, AND PARTICIPANTS: A novel mIHC and computational image processing workflow was developed and used to evaluate surgical/biopsy specimens from matched primary and recurrent HNSCC tumors from 30 patients. A single formalin-fixed paraffin-embedded tissue section from each specimen was sequentially stained with a panel of 29 immune biomarkers. The stainings were converted to pseudo-fluorescent images, which were then combined to enable simultaneous evaluation of all 29 biomarkers within the single tissue section. Image cytometry analysis was applied to interpret chromogenic signals from the combined images to identify and quantify individual tumor, structural, and immune cells.

MAIN OUTCOMES AND MEASURES: Immune cell density and distribution within each tissue section were measured using visualization and quantification technology analogous to flow cytometry. Data from the matched primary and recurrent HNSCC tumors were then compared using the paired t-test.

RESULTS: 29-plex mIHC analysis of the matched primary and recurrent tumor tissues from 30 patients enabled quantitative analysis of 17 different cell lineages in a single surgical/biopsy tissue section. In recurrent, as compared to primary HNSCC tumors, the percentage of immunosuppressive TH2-polarized CD163+ tumor-associated macrophages (TAM) was significantly increased (p=0.023) while a decreased ratio of CD163-/CD163+ TAMs (p=0.032) was observed. In addition, there was a trend towards a decreased presence of CD8+ T cells in recurrent HNSCC tumors, associated with an increased percentage of PD1+Eomes+CD8+ T cells expressing exhaustion markers.

CONCLUSIONS AND RELEVANCE: This study establishes the validity of a novel 29-plex mIHC technology for analysis of single surgical/biopsy tissue sections and reveals marked differences in the tumor-immune microenvironment of recurrent vs. primary HNSCC. These data reveal a myeloid-type inflammatory status and decreased anti-tumor T cell phenotypes within recurrent HNSCC tumors, and provide important insights into potential mechanisms of tumor recurrence and therapeutic failure that will guide future development of biomarker and therapeutic targets in HNSCC.

FUNDING: The authors acknowledge support from the following sources: NIH/NCI, DOD BCRP Era of Hope Scholar Expansion Award, Susan B. Komen Foundation, Stand Up To Cancer-Lustgarten Foundation Pancreatic Cancer Convergence Dream Team Translational Research Grant to Lisa M. Coussens, PhD.

SS04: THYROID

AHNS019: VOICE OUTCOMES FOLLOWING SURGERY FOR THYROID CANCER Kevin J Kovatch, MD[1], David Reyes-Gastelum, PhD[2], David T Hughes, MD[3], Ann S Hamilton, PhD[4], Kevin Ward, PhD, MPH[5], Megan R Haymart, MD[2];

[1]University of Michigan, Department of Otolaryngology-Head and Neck Surgery, [2]University of Michigan, Department of Metabolism, Endocrinology, and Diabetes, [3]University of Michigan, Department of General Surgery, [4]Keck School of Medicine, University of Southern California, Department of Preventive Medicine, [5]Emory University, Department of Epidemioloy

Introduction: As the incidence of differentiated thyroid cancer (DTC) rises, an increasing number of thyroid surgeries are being performed. One of the more common complaints following thyroid surgery is change in voice, which may be related to cancer extension or more commonly surgical complications including injury of the recurrent or superior laryngeal nerve. The Voice Handicap Index (VHI, Jacobson et al, 1997), and abbreviated Voice Handicap Index-10 (VHI-10, Rosen et al, 2004) are validated tools used to identify voice abnormalities adversely affecting quality of life. VHI-10 identifies an abnormal voice as a score >11 based on normative data. This study aims to describe the prevalence, severity, and characteristics of voice-related complaints following thyroid surgery through use of the VHI-10.

Methods: A cross-sectional, population-based survey of patients diagnosed with DTC in 2014-2015 at SEER sites Georgia and Los Angeles was administered from February 2017 to present. A modified Dillman survey method was used to encourage response. Survey elements included patient reported demographics, post-surgical complications, and outcomes including results from the validated VHI-10 questionnaire.

Results: Of 977 patients completing the survey, 758 (77.6%) were female. Median age was 54.0 years (range 21-82). A total of 269 (27.5%) patients reported voice changes more than three months following surgery, 93 (9.5%) patients reported voice problems prior to surgery, and 55 (5.6%) patients reported being diagnosed with vocal fold paralysis/palsy (VFP) by laryngoscopy. A majority (74.5%) of patients with VFP also had voice complaints persisting ≥3 months following surgery. VHI-10 questionnaire revealed a total of 138 (14.1%) patients scoring in the abnormal range (>11, based on normative data). Patients reporting voice changes ≥3 months following surgery had a median VHI-10 score of 8.0 (range 0-36), with 98 (36.4%) scoring in the abnormal range (Table 1). Patients reporting voice problems prior to surgery had a median VHI-10 score of 7.0, with 30 (32.3%) scoring in the abnormal range. Patients reporting VFP had an elevated median VHI-10 score of 15.0 (range 0-36) compared to those without VFP (median 0, range 0-38). Further, a greater proportion of those with VFP (33, 60.0%) scored in the abnormal range on VHI-10 relative to those without VFP (104, 11.5%) ($p<0.001$). In the subset of patients scoring in the abnormal range on VHI-10, common complaints included "my voice makes it difficult for people to hear me" and "the clarity of my voice is unpredictable".

Conclusion: Voice complaints following surgery for thyroid cancer are common. These complaints are frequently underreported in the literature due to limited long-term follow-up, reliance on surgeon report, focus on single institution studies with high volume surgeons, and rare use of validated scales to assess impact on voice. Our findings of a high prevalence of voice complaints post thyroid surgery and a larger than expected number with abnormal VHI-10 score suggest a need for heightened awareness, consideration of referral to high volume centers, de-escalation of surgical treatment when appropriate, and early referral for voice therapy or procedural intervention.

Table 1. Voice Handicap Index-10 Scores: Analysis by Symptomatology

	Median VHI-10 Score (Range)	Number Abnormal VHI-10 (%)
Total (n=977)	0 (0-40)	138 (14.1%)
Report voice changes ≥3 months (n=269)	8 (0-36)	98 (36.4%)
Report voice problem before surgery (n=93)	7 (0-40)	30 (32.3%)
Report VFP (n=55)	15 (0-36)	33 (60.0%)
Do not report VFP (n=906)	0 (0-38)	104 (11.5%)

*VFP, vocal fold paralysis/palsy. Abnormal VHI-10 defined as score >11. Note some groups overlap.

AHNS020: UTILITY OF INTRAOPERATIVE FROZEN SECTION IN LARGE THYROID NODULES Craig A Bollig, MD, Jeffrey B Jorgensen, MD, Robert P Zitsch, III, MD, Laura M Dooley, MD; University of Missouri Dept. of Otolaryngology Head and Neck Surgery

Importance: The role of intraoperative frozen section (iFS) in thyroid surgery remains controversial and continues to evolve. The utility of iFS in nodules >4cm has not been established.

Objective: To determine if the routine use of iFS in patients with nodules >4cm with non-malignant cytology undergoing a thyroid lobectomy results in cost savings.

Design: A decision-tree model of thyroid lobectomy with iFS was created. A retrospective cohort study was performed to derive parameters, which were also obtained from the literature. Costs were estimated from 2014 Medicare, Bureau of Labor Statistics, and the Nationwide Inpatient Sample data.

Setting: Single Academic Center

Participants: Consecutive sample of 48 patients with thyroid nodules >4cm and non-malignant cytology undergoing thyroid lobectomy in which iFS was performed between 2009-2015.

Intervention: Modeled Thyroid lobectomy with and without iFS

Main Outcome and Measure: Overall cost savings per case with iFS.

Results: In our cohort the overall malignancy rate was 25% and 33% of these malignancies were identified intraoperatively. The specificity and positive predictive value of iFS were 100%. The negative predictive value and sensitivity were 91% and 80%, respectively. When applying the malignancy rates obtained from our cohort, performing routine iFS was the less costly scenario, resulting in a savings of $486/case. When the rate of malignancy identified on iFS was adjusted, obtaining iFS remained the less costly scenario as long as the rate of malignancies identified on iFS exceeded 12%. If patients with follicular lesions on cytology were excluded, 50% of malignancies were identified intraoperatively, resulting in a savings of $768/case.

Conclusions and Relevance: In patients with nodules >4cm undergoing a diagnostic lobectomy, routine use of iFS would result in decreased health care utilization. Additional cost savings would be obtained if iFS was avoided in patients with follicular lesions.

AHNS021: TRENDS IN OPIOD PRESCRIBING PRACTICES AFTER ENDOCRINE SURGERY Lauren B Moneta, MD, Enrique Leon, BA, Maisie Shindo, MD; Oregon Health & Science University

From 1999-2015 183,000 deaths in the US were attributed to prescription opioid overdose. Data suggests one of four patients treated with long term prescription opioids for non-cancer related pain will suffer from opioid addiction. Increased awareness has lead to efforts to minimize opioid prescribing. Over-prescribing of opioids at discharge contributes to this epidemic. There is a paucity of research quantitatively characterizing the volume of opioid medication prescribed after discharge from surgery. This IRB approved study was conducted to determine opioid prescribing and opioid needs in patients who underwent thyroid and parathyroid surgery at a single institution. To our knowledge there is only one other study that explores opioid use in this patient population.

A retrospective review of patients undergoing hemi-thyroidectomy, total thyroidectomy and parathyroid surgery at our institution from January 2012 to September 2017 was conducted. The quantity of opioids prescribed at discharge for patients who remained in the hospital for at least one night (inpatient) and those discharged the day of surgery (daypatient) were determine in morphine equivalents (ME), identifying 1143 patients. Those who underwent other concurrent surgical procedures were excluded, leaving 946 patients. In September 2016 an effort was made to decrease opioid prescribing. Groups were sub-divided into past and current prescribing practices. The past group included 716 patients who underwent surgery between January 2012 and September 2016. The current group included 230 patients from September 2016 thru September 2017. Two hundred thirty patients had a hemi-thyroidectomy, 377 a parathyroidectomy and 339 a total thyroidectomy.

A two factor ANOVA was completed demonstrating significant decrease between discharge prescriptions of MEs from the previous to current practice groups ($p<0.00$) and between the three different types of endocrine surgery ($p<0.00$). Tukey's honestly significant difference post-hoc tests were completed.[Office1] There was significant difference in MEs prescribed to parathyroidectomy patients and both hemi-thyroidectomy ($p=0.01$) and total thyroidectomy patients ($p<0.00$).[Office2] There was no overall difference in the MEs prescribed at discharge for hemi-thyroidectomy vs. total thyroidectomy patients ($p=0.29$). There was a significant decrease in MEs prescribed at discharge for parathyroidectomy patients from the previous vs. current prescribing practices respectively (means: 233mEq vs 104mEq, $p<0.00$). There was a decrease in MEs prescribed to

hemi-thyroidectomy patients from past to current practice (means: 275mEq vs. 188mEq, p=0.16) and total thyroidectomy patients (means: 312mEq vs. 217mEq, p=0.08), however it was not statistically significant. There was no significant increase in patient calls requesting refills for opioid medications once prescription volumes were decreased (p=0.860)[Office3] . Only 0.04% of patients requested an opioid refill. Inpatients were prescribed more opioid medication at discharge than outpatients (means: 272 vs 176mEq, p<0.00).

We concluded that opioid prescriptions for parathyroidectomy patients need not be greater than 100 mEq and 200 mEq for thyroidectomy patients. These patients have relatively little post-operative pain which can potentially be controlled with non-opioid medications. Decreasing the volume of opioid medication prescribed at discharge will decrease waste and potential for addiction. Future research may focus on continuing to decrease opioid prescriptions and potentially eliminate their need in this patient population.

AHNS067: PARATHYROID HORMONE LEVEL ALONE IS MOST ACCURATE PREDICTOR OF INTRAVENOUS CALCIUM ADMINISTRATION AFTER THYROIDECTOMY Catherine Frenkel, MD[1], Anthony Ferrara, MD[2], Jie Yang, PhD[2], Jihye Park[2], Ghassan Samara, MD[2]; [1]University of Pennsylvania, [2]Stony Brook Medicine

Importance: Hypocalcemia is one of the most common complications of total thyroidectomy. Prediction algorithms are controversial, and may involve patient risk factors, post-operative serum calcium trends and variable parathyroid hormone (PTH) levels.

Objective: The purpose of this study is to evaluate if post-thyroidectomy PTH levels better predict hypocalcemia when incorporated into an algorithm that considers other relevant patient characteristics.

Design: The Cerner Health Facts® database was used to extract patient-level data on adults undergoing total thyroidectomy from 2009-2013 (n=6,046). Included patients had at least one post-operative PTH level and two serum calcium levels (n=546).

Main Outcomes: PTH levels from days 0 and 1 along with patient need for intravenous (IV) calcium were incorporated into a logistic regression model with predictive performance evaluated from 10-fold cross validation. Optimum cut-off in PTH level was calculated based on Youden's J index.

Results: In the analyzed post-operative population, median PTH was 20.1 pg/ml (IQR 27.1) and average calcium was 8.49±0.6 mg/dL. IV calcium was administered to 16.5% (n=90) of patients. Twenty-nine percent of patients with PTH <10, 17.2% with PTH 10-20, and 9.5% with a PTH >20 received IV calcium. Analysis of patient characteristics, comorbidities and hypocalcemia risk factors demonstrated that PTH, serum calcium, thyroid disorder and hyperthyroidism were associated with IV calcium administration (p< 0.0001, <0.0001, 0.04, 0.002). After adjustment using multivariable logistic regression analysis, hyperthyroid patients were still more likely to require IV calcium (OR 0.68, 95% CI 0.5-0.91). The performance of three models to predict need for IV calcium were then compared: PTH level, PTH + serum calcium level, and PTH + serum calcium + hyperthyroidism. The optimum PTH cutoff calculated to predict IV calcium was 13.1 pg/ml. PTH level alone had a sensitivity of 57.1% and specificity of 73.8%, 91.5% negative predictive value (NPV) and 71.5% accuracy. Adding serum calcium and hyperthyroidism to the model improved sensitivity (61.4% and 71.4%, respectively) and, to a small degree, NPV (91.9% and 92.9%, respectively). However, these additional variables decreased specificity (70.3% and 60%, respectively) and, ultimately, accuracy (69.1% and 61.6%, respectively).

Conclusion: Accuracy of post-thyroidectomy PTH levels in predicting clinically significant hypocalcemia is not improved when combined with serum calcium levels or relevant patient risk factors for hypocalcemia, particularly hyperthyroidism.

AHNS023: A PRACTICAL METHOD TO PREDICT THE SEVERITY OF HYPOCALCEMIA AFTER PARATHYROIDECTOMY FOR PRIMARY HYPERPARATHYROIDISM Changxing Liu, MD, PhD, Liyang Tang, MD, Tamara Chambers, MD, Niels Kokot, MD, Uttam Sinha, Dennis Maceri; USC Tina and Rick Caruso Department of Otolaryngology-Head and Neck Surgery, Keck Medicine of USC, University of Southern California

Introduction: Parathyroidectomy is a commonly performed procedure for

primary hyperparathyroidism causing either by parathyroid adenoma or hyperplasia. One of the risks for this procedure is postoperative hypocalcemia, which can cause tingling and numbness, tetany, muscular cramps, wheezing, dysphagia, mental status changes, or even seizures and congestive heart failure. Hypocalcemia is the major reason to keep the patients in the hospital. Sometimes, when it's not recognized initially, and the patients are discharged, they will go to emergency rooms and get readmitted. So, prediction and early intervention of hypocalcemia can decrease hospital cost and prevent severe complications.

Objective: To predict the severity of hypocalcemia after parathyroidectomy in patients with primary hyperparathyroidism, based on the patients' clinical information, including patient's age, length of disease, PTH levels, vitaminD level, and calcium level. To stratify patients into groups with different levels of risk for developing severe hypocalcemia based on these important clinical factors, and to provide guidance for early interventions, including providing oral/iv calcium and vitaminD supplements, to reduce hospital stay and cost.

Methods: Information of 100 patients, diagnosed with primary hyperparathyroidism and underwent parathyroidectomy as the primary treatment modality at USC tertiary care hospital from January 2016 to July 2017, were retrospectively reviewed. Their ages, length of disease, peripheral PTH level before surgery, peripheral PTH level 15minute after abnormal gland(s) removal, vitaminD level, preoperative calcium level, lowest postoperative calcium level, symptoms of hypercalcemia were retrieved and recorded. R value of Pearson correlation coefficient between the lowest postoperative calcium level with other clinical information, was calculated. p values were calculated based on the correlation coefficient. $P<0.05$ was set as the threshold for statistical significance.

Results: Patient's age, length of disease and vitaminD level provided very minimal information to quantify risks of postoperative hypercalcemia. The absolute difference between the preoperative PTH level and the 15minute PTH level after removal of the abnormal gland(s) in the operating room is the most significant predicting factor for the severity of postoperative hypocalcemia. There is a linear correlation between this absolute difference and the decrease of calcium level postoperatively from preoperative value. A formula was generated to quantify this linear relationship between them as $Y=0.0035*X^2$, while Y= percentage of calcium level drop and X= percentage of PTH level drop, with the value of $R>0.7$ and p value <0.01. The formula has been tested primarily in our patient population with good reliability.

Conclusions: Hypocalcemia of post-parathyroidectomy for primary hyperparathyroidism is a transient clinical condition, but it does lead to readmission and long hospital stay, if no adequate, timely prophylactic interventions are provided. Preoperative PTH and intraoperative PTH levels, especially the difference between them can reliably help us calculate the trend of calcium level. Decision of early interventions can be made based on the calculated result from the formula we obtained. As a result, this can decrease the rate of readmission and the length of hospital stay with lower total cost. Our sample is still not large enough, further confirmation with larger samples is desired.

AHNS024: THE POST-THYROIDECTOMY VOICE: THE DISCONNECT BETWEEN PATIENT-PERCEIVED VOICE CHANGES AND OBJECTIVE VOICE MEASURES IN THE FIRST POSTOPERATIVE YEAR

Heidi Kletzien, MS[1], Cameron L Macdonald, PhD[2], Jason Orne, PhD[3], David O Francis, MD, MS[1], Glen Leverson, PhD[1], Elizabeth Wendt, MPH[1], Rebecca S Sippel, MD[1], Nadine P Connor, PhD[1]; [1]University of WIsconsin-Madison, [2]Qualitative Health Research Consultants, [3]Drexel University

Introduction: An assumption exists that voice changes after total thyroidectomy are related to recurrent laryngeal nerve injury resulting in vocal fold paralysis. However, the majority of patients with post-operative voice changes have no evidence of vocal fold movement impairment. In the absence of vocal fold paralysis, patients are often counseled that their postoperative dysphonia will be transient. Some evidence suggests that voice changes may be prolonged even in the absence of vocal fold paralysis. To date, no study has rigorously investigated the prevalence of voice-related disability [HK1] and duration both from the patient's perspective and using quantitative vocal parameters. The aim of our study was to assess voice-related quality of

life associated with post-thyroidectomy voice symptoms and to compare patient perceived voice changes with alterations in objective vocal parameters at 5 time-points in the first postoperative year.

Methods: Forty-two patients with clinically node-negative papillary thyroid cancer recruited as part of a randomized controlled trial (UW13115) were enrolled in a mixed-methods (qualitative-quantitative) study from outpatient clinics at a tertiary care hospital. Semi-structured interviews, symptom prevalence, and instrumental voice evaluations (Phonation Threshold Pressure [PTP], Dysphonia Severity Index [DSI], Voice Handicap Index [VHI]) occurred at preoperative, 2-weeks, 6-weeks, 6-months, and 1-year postoperative time points.

A mixed model repeated measures analysis of variance (ANOVA) was used to examine treatment and time effects for all quantitative data (PTP, DSI, VHI). Cohen's D scores were calculated to determine effect size. McNemar's test was used to examine nominal data (normal vs abnormal PTP, DSI, and VHI; symptom frequency) from the preoperative or 2-weeks postoperative time points to later post-operative time points. Pearson's product moment was calculated to examine the relationship between primary voice evaluation data (PTP, DSI, and VHI) and patient patient impaired communication across the five study time points.

Results: Impaired communication was the primary theme derived from patient interviews from pre- to post-thyroidectomy. Preoperatively, 2% of patients were concerned about the surgical implications for their voice. After surgery, 50% of interviewed participants described vocal disability at the two-week postoperative visit and this rate persisted out to 1-year follow-up. In contrast, objective vocal perturbations (PTP, DSI, VHI) were only detected 2-weeks postoperatively after which all parameters returned to baseline levels at all subsequent follow-up visits (6-weeks, 6-months, 1-year).

Conclusion: Disability related to voice is common after total thyroidectomy for papillary thyroid cancer and affected quality of life for ½ of the patients out to 1-year of follow-up. This finding contradicts typical preoperative counseling discussions that tend to include discussion that postoperative voice changes, in the absence of vocal fold paralysis, are transient and nonconsequential. Without semi-structured interviews, our results would have been the opposite since quantitative vocal parameters returned to normal levels after the 2-week follow-up. Voice changes after thyroidectomy should not be minimized because they may persist beyond 1 year for a large portion of patients and have the potential to severely compromise quality of life.

SS05: LARYNX/PHARYNX

AHNS025: STAGING HPV-RELATED OROPHARYNGEAL CANCER: VALIDATION OF AJCC 8 IN A SURGICAL COHORT Mathew Geltzeiler, MD[1], William G Albergotti[2], John Gleysteen, MD[1], Marnie Bertolet[2], Michael Persky, MD[2], Neil D Gross, MD[3], Ryan Li, MD[1], Peter Andersen, MD[1], Seungwon Kim, MD[2], Robert L Ferris[2], Umamaheswar Duvvuri[2], Daniel Clayburgh, MD[1]; [1]Oregon Health & Science University, [2]University of Pittsburgh Medical Center, [3]MD Anderson Cancer Center

Introduction: The American Joint Committee on Cancer (AJCC) recently released the 8th edition Cancer Staging Manual (AJCC-8) with modifications to the human papillomavirus (HPV) related oropharyngeal squamous cell carcinoma (OPSCC) staging system. The goal of our study was to apply AJCC-8 criteria to a multi-institutional cohort of surgically treated patients with HPV-related OPSCC. Importantly, in this study we examined the prognostic capacity of AJCC-8 relative to both clinical and pathologic staging.

Methods: A retrospective review of a prospectively collected multi-institutional dataset was performed. All included patients had a diagnosis of HPV-related OPSCC as determined by p16 immunohistochemistry and were treated with surgery as a primary treatment modality. Surgical approaches included open, direct transoral and transoral robotic surgery (TORS). Adjuvant radiation and/or chemotherapy were given to patients per the treating teams.

Each patient was staged both clinically and pathologically according to both AJCC-7 and AJCC-8 criteria. The primary outcome measure was overall survival. The Kaplan-Meier method was used to calculate cumulative probability of survival, and differences were evaluated with log-rank tests. Cox proportional

hazard regression was used for a multivariable regression analysis. Akaike's Information Criteria (AIC) analysis was then used to compare the Cox analyses.

Results: Three hundred and nine patients were included in the study with surgical dates from March 1983 to December 2015. Median follow up was 33 months (range 12-345). The median age at diagnosis was 57 years (range of 30-80). Sixty-four percent of the primary tumors were located in the base of tongue (BOT) while 33% were found in the tonsil. Seventy-four patients (24%) underwent surgery alone while one hundred two (33%) received adjuvant radiation therapy and 133 patients (43%) received adjuvant chemoradiation therapy.

The p-value for the log rank test for AJCC-7 clinical and pathologic were 0.085 and 0.873, respectively. The long rank p-values for AJCC-8 clinical and pathologic were 0.0001 and <0.0001, respectively. The AIC confirmed that in our surgical cohort, AJCC-8 pathologic staging is a statistically better staging system than AJCC-7 pathologic (p= <0.001).

When examining AJCC-8 alone, pathologic data did not change the clinical staging for 235 patients (76%) while 43 patients (14%) were upstaged by 1 stage, 1 patient (0.4%) was upstaged by 2. Twenty-one patients (7%) were downstaged by 1 and 9 patients (1%) were downstaged by 2. The AIC showed that the AJCC-8 pathologic criteria more accurately stratifies surgical patients than AJCC-8 clinical, but this difference is not statistically significant (p=0.56).

Conclusion: The updated AJCC 8 staging system is a significant improvement over the AJCC-7 for patients with HPV-related OPSCC treated surgically. While the AJCC-8 pathologic criteria did perform better than the AJCC-8 clinical criteria, this difference was not statistically significant. Since the treatments applied to this cohort after surgery were based on AJCC-7 staging, future decisions regarding adjuvant therapy for HPV-related OPSCC may require consideration of factors outside of AJCC-8 criteria.

AHNS026: TOWARDS A TUMOR-SPECIFIC DE-INTENSIFICATION STRATEGY IN OROPHARYNGEAL SQUAMOUS CELL CARCINOMAS: USING TUMOR IMMUNOPHENOTYPES TO PREDICT PATIENT OUTCOMES

Wesley H Stepp, PhD[1], Douglas Farquhar, MD[1], Angela Mazul, PhD[1], Jose Zevallos, MD[2]; [1]University of North Carolina at Chapel Hill, [2]Washington University in St. Louis

Purpose/Objectives: Many of the clinical trials that de-intensify treatment for patients with suspected HPV-positive oropharyngeal squamous cell carcinoma (OPSCC) use p16 expression alone to positively identify HPV-mediated tumors. While p16 immunohistochemistry is widely available and has a strong correlation with HPV-positive OPSCC, approximately 12% of p16-positive cases have non-HPV16-positive and HPV-negative tumors. In these patients, treatment de-intensification based on p16 immunohistochemistry alone could adversely affect this patient population who have more frequent recurrent disease and may not receive treatment consistent with the standard of care if included in trials with de-intensified radiotherapy. In this study, we show that OPSCC that are HPV-positive have a unique genetic signature with respect to gene expression and tumor-specific mutations, even in the context of p16-positive immunohistochemistry.

Materials/Methods: Formalin-fixed, paraffin-embedded p16-positive or p16-negative OPSCC samples were obtained from the university pathology core facility. Samples were sectioned onto slides and examined by a university pathologist who marked tumor boundaries. Tumor tissue was microdissected and RNA from tumor tissue was harvested. RNA was either hybridized directly to a Nanostring PanCancer Immune molecular RNA array or reverse-transcribed into cDNA and assayed for HPV16 mRNA targets (E1, E2, E5, E6/E7 and E1^E4) using quantitative, real-time PCR.

Results: Using NanoString molecular array technology, we have identified a pattern of immunoregulatory and cancer-associated gene expression in HPV-positive OPSCCs that clusters patients into HPV-positive, low-risk and HPV-positive, high-risk patients. Further, when stratified by clinical characteristics such as smoking status, we find that HPV-positive, never smokers have a distinct gene expression profile from those patients who are HPV-positive and have ever smoked. Additionally, we find that HPV-mediated OPSCC tumors susceptible to recurrent disease may be identified with increased accuracy by combining viral mRNA qPCR and DNA-

seq reads in combination with a tumor-derived genetic signature.

Conclusions: The use of p16-IHC alone to identify OPSCC candidates eligible for radiotherapy de-intensification may be insufficient. Using a combination of host, tumor and viral genetics, we may be able to limit the number of cases where radiation therapy is de-intensified in the setting of p16-positive immunohistochemistry. This could prevent recurrence of more aggressive subtypes of HPV-positive, p16-positive OPSCC. Further, the use of molecular profiling of tumors from multiple angles (e.g. host and oncovirus transcription) may aid in the clinical typing of OPSCCs, promote the discovery of drug targets, and improve our ability to safely de-intensify radiotherapy of HPV-positive OPSCCs.

AHNS027: ABNORMAL MICROVASCULATURE IN LARYNGECTOMY MUCOSAL MARGINS IDENTIFIED ON FROZEN SECTION IS ASSOCIATED WITH INCREASED RISK OF FISTULA Marianne Abouyared, MD, Darcy Kerr, MD, Brandon Burroway, Zoukaa Sargi, MD, MPH, Jason Leibowitz, MD; University of Miami Miller School of Medicine

BACKGROUND: Salvage total laryngectomy following chemoradiation is associated with increased wound healing complications, specifically pharyngocutaneous fistula. Thus, many surgeons choose to reconstruct salvage laryngectomy defects with a free tissue transfer in order to incorporate non-radiated, healthy tissue. The decision to tube the flap versus suture to a strip of intact posterior pharyngeal wall is dependent on the surgical defect. We question whether the remaining pharyngeal mucosa displays microscopic radiation damage, resulting in increased risk of fistula formation.

METHODS: This is a retrospective review of patients who underwent either primary or salvage total laryngectomy. Laryngectomy margins were re-reviewed by a single pathologist blinded to patient outcome.

RESULTS: Sixty patients who underwent total laryngectomy had their margins re-reviewed; 10 underwent primary laryngectomy and 50 had salvage laryngectomy. Pharyngocutaneous fistula was more common in those who underwent salvage laryngectomy (44%) compared to no prior radiation (20%). Laryngectomy margins were assessed for presence of fibrosis, dilated lymphatics, thinned epithelium, atypical stromal cells, abnormal mucous cells, presence of telangiectatic capillaries, and hyalinized arterioles. Odds-ratios were calculated to examine the relationship between each histologic characteristic and fistula. Patients who have mucosal margins displaying telangiectatic capillaries may be at increased risk of post-operative fistula (OR 3.72, 95% CI 1.06 – 13.049). The presence of hyalinized arterioles was also associated with fistula (OR 9.21, 95% CI 1.002 – 84.668).

CONCLUSIONS: Telangiectatic capillaries or hyalinized arterioles may indicate severe post-radiation changes and decreased healing potential. The ability to assess this intraoperatively may assist the surgeon in deciding whether to resect the remaining posterior pharyngeal wall strip, tube the free flap, and thus close the wound with healthy, non-irradiated, and well-vascularized tissue.

AHNS028: OCCULT CONTRALATERAL NODAL DISEASE IN OROPHARYNGEAL SQUAMOUS CELL CARCINOMA PATIENTS UNDERGOING PRIMARY TORS WITH BILATERAL NECK DISSECTION Caitlin McMullen, MD[1], Jonathan Garneau, MD[2], Emilie Weimar, MD[3], Sana Ali, MD[4], Joaquim Farinhas, MD, MBA[5], Eugene Yu, MD, FRCPC[3], Peter Som, MD[2], Cathy Sarta, RN[4], David Goldstein, MD, MSc, FRCSC[3], Susie Su, MSc[3], Wei Xu, PhD[3], Richard V Smith, MD[4], Brett Miles, MD, DDS[2], John de Almeida, MD, MSc, FRCSC[3]; [1]Moffitt Cancer Center, [2]Mount Sinai Hospital, [3]Princess Margaret Cancer Center, [4]Montefiore Medical Center, [5]Florida Hospital - Tampa

Background: The propensity for early lymphatic metastases of the oropharynx necessitates management of the neck even in the absence of clinical and radiographic disease. The likelihood of contralateral neck metastases in the absence of radiographic disease is not well understood for tonsil and tongue base cancers. Although some centers advocate unilateral neck treatment for lateralized tonsil cancers, the true rates of occult contralateral metastases for tonsil and especially tongue base cancers is not known. Knowledge of occult contralateral disease would help inform practitioners as to who may be candidate for unilateral neck management.

Objective: The objective of this study

was to determine the rate of pathologic contralateral positive nodes in patients without suspicious preoperative imaging in a multi-institutional population of OPSCC patients treated with TORS and bilateral neck dissections.

Methods: A retrospective review of medical records was performed at the participating institutions: Princess Margaret Cancer Center, Toronto; Icahn School of Medicine at Mount Sinai, New York City;, and Montefiore Medical Center, New York City. Patients with OPSCC undergoing TORS and bilateral neck dissections were identified for analysis. Preoperative imaging, as reviewed by experienced neuroradiologists blinded to pathologic status, was compared to postoperative pathology reports. The AJCC 7th Edition was applied for staging.

Results: Thirty-three patients were identified who underwent bilateral neck dissections with TORS for OPSCC as initial therapy. There were 28 men and 5 women, and the median age of the population was 63 (SD = 10.5) years. Thirteen patients (39%) had tonsil primary, 19 (58%) patients had a base of tongue primary, and 1 (3%) patient had a pharyngeal wall primary. Twenty-five (74%) of patients were known to be p16+. Preoperative radiographic stages were as follows: 2 (6%) N0; 5 (15%) N1; 5 (15%) N2a; 16 (48%) N2b; 5 (15%) N2c; and 1 (3%) N3. Twenty-nine patients (88%) were radiographically negative in the contralateral neck preoperatively. Of the 5 patients with radiographically suspicious contralateral nodes, only 1 (20%) was positive on final pathology. Three patients were ultimately found to have pathologically positive contralateral nodes, and of these three, 2 were not anticipated on preoperative imaging. The occult contralateral nodal disease rate was 6.9%. One occult node was radiographically T1N1 p16+ tonsil primary 7 mm from midline, and the other was radiographically T4 (deep tongue muscle invasion) N2b p16- base of tongue primary at the midline. The sensitivity, specificity, positive predictive value, and negative predictive value of suspicious contralateral nodes on preoperative imaging were 33%, 84%, 20% and 93% respectively.

Conclusion: OPSCC patients undergoing TORS and elective contralateral neck dissection will have a very low rate of unanticipated contralateral nodal positivity. Many patients with suspected contralateral disease may in fact be down-staged postoperatively. Prediction of pathologic staging remains a challenge with current preoperative imaging modalities.

AHNS029: THE ROLE OF INTRAVENOUS ACETAMINOPHEN IN POST-OPERATIVE PAIN CONTROL IN HEAD AND NECK CANCER PATIENTS Erin J Smith, MD, MS[1], Jessica Lange, MD[2], Cindy Moore, MD[1], Lana Jackson, MD[1], Isaam Eid, MD[3], Jesus Monico, MPH, MS[1]; [1]University of Mississippi Medical Center, [2]Ear Nose and Throat Specialists, Lexington, Kentucky, [3]University of Kansas Medical Center

Importance There have been multiple studies looking at improving pain control in patients undergoing major head and neck surgery. Traditionally postoperative pain management in these patients has been dominated by opiates. To date, there is no published literature that has investigated the role of intravenous acetaminophen for postoperative pain control after surgical resection of head and neck cancers.

Objective To investigate the role of intravenous acetaminophen for alleviation of postoperative pain after surgical resection of head and neck cancers.

Design, Setting, and Participants A single center prospective study was conducted between April 2016 and May 2017, which included 48 participants who underwent surgical resection of head and neck cancer and postoperatively received intravenous Tylenol (1 gram every 6 hours for 4 doses), in conjunction with the standard opioid PCA and other prn narcotics. These patients were compared to a similar historical group of 51 patients who underwent surgery from January 2014 to March 2015 and received the standard opioid PCA and prn narcotics.

Main Outcomes and Measures The main outcome measures included (1) averaged 8 hour pain scores over the first 24 hours, (2) total amount of narcotics, measured in morphine equivalents (MEs), in 8 hour intervals over the first 24 hours, and (3) total number of PCA attempts in 8 hour intervals over the first 24 hours. A secondary outcome measure was length of stay. Statistical measures included descriptive analysis and gamma regression, with covariate adjustments for age at time of surgery, sex, and race.

Results Patients in the acetaminophen group received less total narcotics in the first 8 hours after surgery compared to non-acetaminophen group (13.5 ± 13.3 vs. 22.5 ±21.5 MEs, p = 0.014). There was no significant difference in the total narcotics received in the second and third 8 hour intervals; however the total IV MEs received over 24 hours approached significance (44.8 ±38.6 MEs in acetaminophen group vs. 64.7 ± 60.2 MEs in the non-acetaminophen group, p = 0.055). Patients in the acetaminophen group had a decreased length of stay compared to the non-acetaminophen group (7.8 ± 4.6 vs. 10.6 ± 7.6 days, p=0.03). There was no difference in the PCA attempts between the two groups. These associations held true after covariate adjustments for age, sex, and race.

Conclusions and Relevance This study shows that intravenous acetaminophen may play a role in reducing the total narcotic requirement in the first 8 hours after surgery and potentially contribute to decreased length of stay and therefore decreased cost to the patient and hospital overall. Future research should be aimed at comparing these groups in a randomized control study/setting.

AHNS030: EFFECT OF TREATMENT MODALITY ON CHRONIC OPIOID USE IN PATIENTS WITH T1/T2 OROPHARYNGEAL CANCER Craig A Bollig, MD, Jeffrey B Jorgensen, MD; University of Missouri Dept. of Otolaryngology Head and Neck Surgery

Importance: Opioid dependence has become an epidemic in the United States with significant societal costs. While the quality of life and functional benefits of transoral resection of oropharyngeal malignancies have been well-described; the effect of treatment modality on long-term opioid dependence in patients with oropharyngeal cancer has not been previously evaluated.

Objective: To determine the impact of treatment modality on the prevalence of chronic opioid use in patients with T1 and T2 oropharyngeal cancer as well as other risk factors in this population for chronic opioid use.

Design: Retrospective cohort study

Setting: Single Academic Center

Participants: Consecutive cohort of 122 patients with T1 and T2 oropharyngeal cancer undergoing treatment with curative intent and accurate follow-up information

Intervention: Surgery, radiation, and/or chemotherapy for oropharyngeal cancer

Main Outcome and Measure: Chronic opioid use, defined as use of opioid analgesics >90 days following completion of treatment. Factors associated with chronic opioid use were investigated by univariate testing. Clinically relevant factors with p <0.1 on univariate tests were evaluated using multivariable logistic regression.

Results: There were 122 patients that met inclusion criteria. Mean (SD) age was 59.8 (9.1) years and 113 (92.6%) patients were male. The overall prevalence of chronic opioid use was 45.9%. On univariate testing, there was a significant difference in the frequency of chronic opioid use between patients treated non-surgically compared to those that underwent surgical resection (62.9% versus 28.3%, respectively, p= 0.001). On multivariate analysis, primary non-surgical treatment (odds ratio [OR] 4.5, 95% CI, 1.7-11.4), pretreatment opioid use (OR 14.9, 95% CI, 3.5-62.5), the presence of a psychiatric disorder (OR 4.3, 95% CI, 1.03-18.5), current alcohol use (OR 2.6, 95% CI, 1.03-6.5) and younger age (OR 1.1, 95% CI, 1.02-1.11) were significantly associated with chronic opioid use. In terms of age, the risk of chronic opioid use was twice as high (OR 2.1, 95% CI, 1.2-3.7) for a given individual compared to someone 10 years older in our cohort.

Conclusions and Relevance: Opioid use remains common among patients with T1 and T2 oropharyngeal cancer following completion of their treatment. Primary non-surgical treatment was independently associated with an increased risk of chronic opioid use. Additional independent risk factors include younger age, preoperative opioid use, current alcohol use, and the presence of a psychiatric disorder. Preventative strategies should be focused toward these patients to reduce their risk of long term opioid use.

SS06: SURVIVORSHIP

AHNS031: BASELINE COGNITION ASSESSMENT AMONG OROPHARYNGEAL CANCER PATIENTS USING PROMIS AND NIH TOOLBOX Parul Sinha, MBBS, Alex Wong, PhD, Dorina Kallogjeri, MD, MPH, Jay F Piccirillo, MD, FACS; Washington University School of Medicine in St.Louis

Importance: Cognitive dysfunction

(CD) is recognized by American Cancer society as a late effect of treatment but the extent of this problem in head and neck cancer (HNC) is not well-understood. Due to the increasing HNC survivorship, particularly for oropharyngeal cancer (OPC), a greater number of survivors are at risk of experiencing CD as a late treatment effect. Knowledge of baseline performance is imperative to meaningfully determine the nature of post-treatment CD, and inform survivorship care practices. However, cognition assessment in clinical practice is made challenging by the lack of targeted instruments and standardized metrics.

Objective: To assess the baseline cognitive performance of OPC patients using standardized National Institutes of Health (NIH)-sponsored instruments of Patient-Reported Outcomes Measurement System (PROMIS) and NIH Toolbox Cognitive Battery (NIHTB-CB) administered via short-forms or computerized adaptive testing.

Design: Prospective cohort study

Settings: Tertiary center

Participants: Of 83 consecutive, newly-diagnosed OPC patients from 9/2016 to 5/2017, 16 were ineligible, 8 refused, and 3 were lost after screening.

Main outcomes: Self-perceived and objective cognition with PROMIS and NIHTB-CB, respectively, were main outcomes. Secondary outcomes were fatigue, pain, anxiety and depression from PROMIS. Fully-adjusted T-scores below 0.5 standard deviation (SD) were considered abnormal (i.e., threshold for clinically meaningful difference).

Results: Of the 56 study subjects (52 males, 4 females), 29% (n=16) were ≥ 65 years-old. Approximately, 34% (n=19) had a college degree, and 36% (n=20) had a professional/technical occupation. About 53% (n=30) were never-smokers, 46% (n=26) were never-drinkers, 52% (n=29) were obese, 23% (n=13) had moderate-severe comorbidity, 5% (n=3) used antidepressants, and 70% (n=39) had some degree of hearing loss. AJCC 8th edition Stage II-III disease was present in 41% (n=23); 89% (n=50) had p16-positive OPC. Upfront surgery was planned in 53% (n=30) and chemoradiation in 47% (n=26). Abnormal self-perceived/PROMIS cognition scores were observed in 11% (n=6), and abnormal objective/NIHTB-CB composite scores in 21% (n=12). For objective cognition, abnormal scores were most common in the domain of processing speed (n=25) followed by attention (n=19), episodic memory (n=17), working memory (n=12) and executive function (n=9). Abnormal PROMIS scores for secondary outcomes were noted in 36% (n=20) for the domain of anxiety, 30% (n=17) for pain interference, 23% (n=13) for depression, and 20% (n=11) for fatigue. Among all demographic, patient and tumor-related variables, abnormal objective cognition scores were more frequent in the cohort aged ≥65 years (56% vs 8%), ever-smokers (27% vs 15%), hearing loss (26% vs 12%), and Stage II-III disease (53% vs 19%).

Conclusions: Abnormal objective cognitive performance was more common at baseline than self-perceived, and was more frequent in ≥ 65 years-old subjects, ever-smokers, and those with hearing loss and advanced OPC. NIHTB-CB allowed immediate scoring of fully-adjusted cognitive performance in our study cohort. In clinical practice, these scores can be used to screen and identify patients with abnormal cognition at baseline who may be more susceptible to developing further impairment after treatment. Identification of susceptible patients and the affected domains will help to institute early cognitive interventions for an improved post-treatment quality of life.

AHNS032: CHRONIC OPIOID USE IN PATIENTS WITH OROPHARYNGEAL SQUAMOUS CELL CARCINOMA TREATED WITH RADIOTHERAPY Justin Dourado, Kathryn Hitchcock, MD, PhD, Peter Dziegielewski, MD, Brian Boyce, MD, Amy Fullerton, SLP, Kristianna Fredenburg, MD, PhD, Priya Gopalan, MD, PhD, Chris Morris, MS, Patrick Tighe, MD, MS, Roger Fillingim, PhD, Natalie Silver, MD, MS; University of Florida

Background: At the time of diagnosis, significant pain is reported in up to 85% of head and neck cancer patients. The cancer itself, acute toxicities from treatment and long-term treatment side effects can result in pain. Opioids are the cornerstone of treatment regimens for both acute and chronic pain management in patients with head and neck cancer. As overall survival for oropharyngeal squamous cell carcinoma (OPSCC) patients has increased, so has the long-term use of opioids. In the setting of the current opioid abuse epidemic in the United

States, another layer of complexity is added to chronic pain management in the head and neck cancer population.

Objectives: 1) Describe the characteristics of opioid use in patients undergoing radiation (RT) or chemoradiation therapy (CRT) for oropharynx cancer. 2) Identify risk factors that are associated with chronic opioid use.

Methods: A retrospective review was conducted for 199 eligible patients undergoing radiation RT or CRT as primary treatment for oropharynx cancer (tonsil and tongue base) at the University of Florida from 2012-2017. p16/HPV status was determined based on review of pathology reports. Chronic opioid use (defined as the use of opioid medication 3 months post-treatment) was recorded. Statistical analysis was performed to assess risk factors for chronic opioid use.

Results: 89% (177) of patients were male with an average age of 62 years and mean follow-up of 31 months. The majority of the patients had stage III/IV disease (83%) and received CRT as primary treatment (73%). 18% received RT alone, and 9% received surgery prior to adjuvant treatment. The majority (69%) were p16 positive, and 73% were former or current smokers. 57 (29%) patients had pre-existing chronic pain conditions. Chronic opioid use was observed in 53% (105) of the patients. Age ≤ 62 years ($p<0.0001$), history of depression ($p=0.0356$), p16 negative status ($p=0.0097$), opioid use at pre-treatment visit ($p=0.0021$), and presence of a pre-existing chronic pain condition at time of diagnosis ($p=0.0181$) were associated with chronic opioid use.

Conclusion: More than 50% of the patients treated with radiation for OPSCC in this cohort were chronic opioid users after treatment. Significant predictors for chronic opioid use included pre-treatment opioid use, history of depression, age ≤ 62, p16/HPV negative tumor status and presence of a pre-existing chronic pain condition. Identifying patients at greatest risk for chronic opioid use prior to treatment may help with long-term pain management in this patient population.

AHNS033: IMPACT OF PATIENT SYMPTOMS ON CAREGIVER TASK BURDEN IN LOCALLY ADVANCED HEAD AND NECK CANCER Emily H Castellanos, MD[1], Mary Dietrich, PhD[2], Stewart M Bond, PhD, RN, AOCN[3], Karen Schumacher, PhD, RN[4], Nancy Wells, DNSc, RN, FAAN[2], Barbara A Murphy, MD[1]; [1]Vanderbilt University Medical Center, [2]Vanderbilt University School of Nursing, [3]Boston College Connell School of Nursing, [4]University of Nebraska Medical Center

Background: Caregivers provide vital support that affects important patient outcomes, such as survival. Caregiving tasks associated with significant physical and emotional strain may result in high levels of caregiver burden. Caregiver burden may undermine not only quality of life for the caregiver, but also the quality of care and support provided to patients. We hypothesized that patient symptom burden is an important contributor to caregiver burden. We used validated patient reported outcome measures to investigate the relationship of patient symptomatology to caregiver task burden in locally advanced head and neck cancer (HNC) patients.

Methods: Patient symptom burden was assessed using the Vanderbilt Head and Neck Symptom Survey 2.0 (VHNSS 2.0; comprised of 10 domains and 3 single items), and caregiver task burden was assessed using the Caregiver Task Inventory (CTI ; comprised of 11 domains). Caregiver task burden was quantified as both number of tasks as well as a composite score of task difficulty and distress. Spearman's rank correlations were run to determine the relationship between HNC symptom burden and caregiver task burden.

Results: 98 HNC patient-caregiver dyads were included. Patients were predominantly male (78%) and Caucasian (97%). The median time since diagnosis was 3.6 months (IQR 2 – 7), and 90% were receiving or had received combined modality treatment. Caregivers were predominantly female (82%) and Caucasian (93%), and 78% were married or partnered to their care recipient. While correlations between increasing symptom burden and number of tasks performed were observed across multiple domains, the more frequent and stronger correlations were seen between symptom burden and the distress/difficulty of caregiving tasks.

For example, in terms of number of tasks, levels of patient-reported mouth pain was positively associated with only the number of oral care tasks being performed by caregivers ($rs=.24$, $p=.017$) yet levels of mouth pain were positively correlated with increased

difficulty/distress in multiple task domains: medical tasks (rs=.32, p=.002), nutrition tasks (rs=.31, p=.003), oral care tasks (rs=.26, p=.013) and skin care tasks (rs=.22, p=.035). Increased difficulty swallowing liquids positively correlated with caregiver difficulty/distress conducting patient rehabilitation tasks including swallowing exercises (rs=.36, p<.001), nutrition tasks (rs=.32, p=.002), medical tasks (rs=.30, p=.004), and oral care tasks (rs=.25, p=.017).

Conclusion: Overall, correlations between patient symptom domains and task domains were as expected. Patients with increased symptoms required the caregiver to perform an increasing number of tasks. Moreover, increasing symptoms were associated with greater levels of distress and difficulty in tasks performed by the caregiver. Studies of caregivers should investigate the benefit of interventions to support the performance of caregiving tasks for highly symptomatic HNC patients.

AHNS034: RISK OF DEVELOPING NEW HEALTH DISORDERS FOLLOWING HEAD AND NECK CANCER TREATMENT VARIES SIGNIFICANTLY BY HEAD AND NECK CANCER SUBSITE: AN ANALYSIS OF THE UTAH HEAD AND NECK CANCER SURVIVOR'S STUDY Marcus M Monroe, MD[1], Sarah Abdelaziz[1], Jason Hunt[1], Luke Buchmann[1], Richard Cannon[1], Kerry Rowe[2], Shane Lloyd[1], Donald Cannon[1], Ying Hitchcock[1], John Snyder[2], Yuan Wan[1], Vikrant Deshmukh[1], Michael Newman[1], Alison Fraser[1], Ken Smith[1], Kim Herget[1], Mia Hashibe, PhD[1]; [1]University of Utah, [2]Intermountain Healthcare, Salt Lake City

Objective: To evaluate how the risk of developing new health disorders in head and neck cancer (HNC) survivors varies between cancer subsites

Methods: A cohort study consisting of 1,901 patients with HNC and a general population cohort of 7,796 individuals were identified using the Utah Population Database (UPDB). The risk of developing new health diagnoses beyond 2 years from diagnosis were compared between cases and matched population controls. The impact of HNC site on risk of developing late health diagnoses following treatment was analyzed.

Results: HNC survivors were noted to be at increased risk of being diagnosed with a wide range of new health disorders. Multiple health problems displayed significant variation between survivors of oral cavity, oropharyngeal, and laryngeal cancer subsites. For example, the risk of a new dysphagia diagnosis in years 2-5 following diagnosis was highest among oropharyngeal cancer patients (HR 13.04, 95% CI 7.97-21.33) followed by laryngeal (HR 9.65, 95% CI 5.4-17.24) and oral cavity patients (HR 3.11, 95% CI 1.99-4.87). This trend continued 5+ years beyond diagnosis. Oropharyngeal cancer survivors in years 2-5 displayed an increased risk of being diagnosed with acute cerebrovascular disease (HR 4.58, 95% CI 1.95 – 10.74), while an elevated risk was not noted in laryngeal or oral cavity cancer survivors. All subsites displayed increased risk of occlusion or stenosis of precerebral arteries, although this risk was most elevated in oropharyngeal cancer patients in both years 2-5 (HR 14.98, 95% CI 5.51-40.78) and 5+ years (HR 8.28, 95% CI 3.7-18.51) following diagnosis. Increased risk of cardiovascular, chronic pulmonary disease, pneumonia, and malnutrition remained elevated across disease sites in all time periods examined.

Conclusions and Relevance: HNC survivors display elevated risk for the development of a wide range of health disorders. Risk of late health diagnoses vary by cancer subsite and may provide one method in which to help individualize HNC survivor post-treatment healthcare.

AHNS035: RACIAL DISPARITIES AND HPV STATUS IN OROPHARYNGEAL CANCER Nicholas Lenze, BS[1], Douglas R Farquhar, MD, MPH[1], Angela L Mazul, PhD, MPH[2], Maheer M Masood, BA[1], Jose P Zevallos, MD, MPH[3]; [1]Department of Otolaryngology/Head and Neck Surgery, University of North Carolina at Chapel Hill School of Medicine, [2]Lineberger Comprehensive Cancer Center, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, [3]Department of Otolaryngology-Head and Neck Surgery, Washington University School of Medicine in St. Louis

Importance: There is lack of a consensus in current literature as to whether or not racial disparities in overall survival for black versus white Americans with oropharyngeal squamous cell carcinoma (OPSCC) persist after adjusting for human papillomavirus (HPV) status.

Objective: To use a meta-analysis to quantify the racial difference in black

versus white Americans in overall survival for OPSCC after adjusting for HPV status.

Data Sources: PubMed/MEDLINE was searched through July 2017 and relevant article reference sections were reviewed for additional studies.

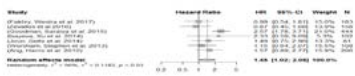
Study Selection: Systematic review was conducted for studies assessing overall survival in black versus white patients with OPSCC. Studies must have been written in English and conducted in the United States. Only cohort studies that had at least 50 patients and used a multivariate Cox regression to adjust for HPV status were included. Studies must have used an accepted method for measuring HPV status.

Data Extraction and Synthesis: Three review authors independently screened the articles for inclusion and two review authors independently extracted data from eligible studies. The PRISMA statement was followed. The pooled hazard ratio (HR) was calculated using a random-effects model.

Main Outcomes and Measures: The outcome of interest was overall survival. Overall survival was defined as the time from diagnosis or start of treatment to the date of death from any known cause or last known follow-up.

Results: Seven studies met the inclusion criteria and had suitable data for pooling into the meta-analysis (N=1,342). The pooled HR for overall survival in black versus white Americans with OPSCC after adjusting for HPV status was calculated to be 1.45 (95% confidence interval, 1.02-2.05). Significant heterogeneity was found between the seven studies (I^2=56%, p=0.03), indicating the need for additional well-designed, large population studies.

Conclusions and Relevance: Racial disparities in overall survival for black versus white Americans with OPSCC persist after adjusting for HPV status. Future studies should continue to investigate the drivers of this disparity, and targeted public health efforts should be made to address them.



AHNS036: GEOGRAPHIC DISTANCE TO TREATMENT IS NOT ASSOCIATED WITH OVERALL SURVIVAL Maheer Masood[1], Douglas Farquhar[1], Angela Mazul[1], Philip McDaniel[1], Trevor Hackman[1], Jose Zevallos[2], Andrew Olshan[1]; [1]University of North Carolina, [2]Washington University at St. Louis

Introduction: Patients diagnosed with head and neck squamous cell carcinoma (HNSCC) often choose between receiving treatment in their community or traveling to a larger medical center. Outcomes between treatment at different centers has been controversial. Our aim in this study was to examine the impact of geographic distance traveled by a patient to reach their provider on overall survival in HNSCC. We examined survival by the distance to both diagnosing and treating providers, with adjustment for demographics, socioeconomic status, tobacco and alcohol use, and stage at presentation.

Methods: Data for analysis was obtained from the Carolina Head and Neck Cancer Epidemiology Study (CHANCE); a population-based case-control study in 46 counties in North Carolina (NC). Cases were identified from 2001 to 2006 through rapid case ascertainment with the North Carolina Central Cancer Registry. An in-person interview obtained a complete residence history and other factors, and medical records were used to ascertain stage at diagnosis and the locations for cancer diagnosis and treatment. Linear distances between the patient's home address and biopsy and treatment site(s) were calculated in ArcMap 10.5 (ESRI, 2017). Distances were divided into quartiles for analysis. Multivariable Cox proportional hazard regression was used to calculate hazard ratios for overall survival, before and after adjustment for age, sex, race, income, insurance status, tobacco use, alcohol use, T-stage, and N-stage at presentation. Separate models were used to examine distance to diagnosing provider, distance to surgeon (if tumor was surgically resected), distance to radiation oncologist, and distance to medical oncologist. Patients with distant metastases at presentation were excluded.

Results: A total of 935 patients were included in this analysis. The median distance between patients and diagnosing providers was 10 mi (range < 1 to 213). The median distance between patients and treating providers was 108 mi for surgery (range 3-300), 102 mi for radiation (range 3-291), and 104 mi for chemotherapy (range 3-269).

There were no significant associations between the distance to any provider and survival, in both adjusted and unadjusted models. For example, the HR for patients in the quartile farthest from the diagnosing provider was 1.1 relative to patients in the closest quartile (95% CI 0.9 – 1.5). The only variables in the adjustment set that associated with survival were insurance status (relative to private insurance, HR of 2.29, 95% CI 1.6-3.2 for Medicare/ Medicaid, and HR of 2.30, 95% CI of 1.6-2.4 for no insurance), T-stage (HR 1.7 95% CI 1.2 - 2.4 for T4 vs. T1), N stage (HR 1.5, 95% CI 1.2 - 1.8 for N1 vs. N0), and annual income (HR 1.5, 95% CI 1.1 - 2.1 for income < $20,000 relative to > $50,000).

Conclusion: The geographic distances between patients and diagnosing or treating providers are not associated with overall survival.

AHNS037: NECK DISABILITY AND HEALTH-RELATED QUALITY OF LIFE AMONG HEAD AND NECK CANCER SURVIVORS FOLLOWING SURGICAL AND NON-SURGICAL TREATMENT

Marci L Nilsen, PhD, RN[1], Leila J Mady, MD, PhD, MPH[2], Susan E George, PT, DPT, , MS[3], Debra Pickford, BSN, RN[4], Jonas T Johnson, MD, FACS[2]; [1]University of Pittsburgh, School of Nursing, [2]University of Pittsburgh, School of Medicine, [3]UPMC Centers for Rehab Services, [4]UPMC Department of Otolaryngology

IMPORTANCE: Multimodality management and increasing incidence of HPV-associated oropharyngeal cancer have increased disease-specific survival in head and neck cancer (HNC). Increased incidence of treatment-related toxicities has accompanied this trend. By identifying risk factors associated with symptom burden, we can implement interventional strategies to enhance functional and quality of life. outcomes in survivors. While neck morbidity has been described following neck dissection or surgical resection with and without radiation therapy, limited studies have investigated the association between non-surgical treatment and neck dysfunction.

OBJECTIVE: To 1) determine the prevalence and predictors of neck disability following HNC treatment and 2) explore the association between neck disability and quality of life.

DESIGN, SETTING, AND PARTICIPANTS: Prospective study of 173 patients who were treated for primary, non-metastatic head and neck squamous cell carcinoma and evaluated in a multidisciplinary HNC survivorship clinic between March 2017 and October 2017. Treatment groups were categorized as 1) non-operative [radiation therapy (RT) or chemoradiation (CRT)], 2) surgery alone, or 3) surgery and adjuvant therapy (RT or CRT).

MAIN OUTCOMES AND MEASURES: Symptom burden was measured using the previously validated Neck Disability Index (NDI), which is a self-reported questionnaire measuring pain, activity, and sleep related neck impairment. NDI scores were tabulated by degree of disability (none, mild, moderate, severe, complete) and categorized into two groups: absence or presence of disability. Health-related quality of life (HRQoL) was measured using The University of Washington Quality of Life Questionnaire Version 4 (UW-QOL), a 12-item self-administered survey of physical, mental, emotional, and social function. Physical and social subscale scores were calculated.

RESULTS: Over half of survivors (n=96, 55.5%) reported neck disability. Over one-third of these patients (n=33) describing moderate to complete impairment. Survivors were predominately male (n=132, 75.9%) with a mean age of 63.2 years (SD=11.1). The majority of survivors were diagnosed with advanced stage cancer (n=126, 72.8%) and were on average 4.0 years (SD=5.4) post-treatment. Primary tumor sites were oropharynx (n=77, 44.5%), oral cavity (n=45, 26.0%), and larynx (n=32, 18.5%). Seventy-three patients (42.2%) underwent non-operative treatment, 32 (18.5%) underwent surgery only, and 68 (39.3%) underwent surgery and adjuvant therapy. Patients who received surgery and adjuvant therapy were more likely to report neck disability than those with surgery only ($p=0.047$). More than half of patients (n=38, 52.1%) who underwent non-operative treatment reported neck disability, though this did not reach statistically significance. Survivors with neck disability had significantly lower UW-QOL physical ($t170.2= 7.67$, $p<0.001$) and social subscores ($t145.4= 11.9$, $p<0.001$) compared to those with no disability.

CONCLUSIONS AND RELEVANCE: Neck disability is an established sequela of surgical resection for HNC, particularly following neck dissection. This study demonstrates a high prevalence of neck disability and pain not only in the late

post-operative setting, but also after non-surgical treatment with RT or CRT only. We found disability significantly impacts HRQoL beyond physical impairment alone. Neck disability represents a substantial treatment-related burden, even in the absence of surgery. In the longitudinal care of HNC survivors, more comprehensive screening is warranted particularly among those treated with cytotoxic and radiation modalities.

AHNS038: SYMPTOM BURDEN ASSOCIATED WITH LATE LOWER CRANIAL NEUROPATHY IN LONG-TERM OROPHARYNGEAL CANCER SURVIVORS Puja Aggarwal, BDS, MPH, Jhankruti S Zaveri, MPH, Ryan P Goepfert, MD, G. Brandon Gunn, MD, Stephen Y Lai, MD, PhD, Clifton D Fuller, MD, PhD, Ehab Y Hanna, MD, David I Rosenthal, MD, Jan S Lewin, PhD, Katherine A Hutcheson, PhD; The University of Texas MD Anderson Cancer Center

Objective: Lower cranial neuropathy (LCNP) is a rare but potentially disabling late side-effect of radiotherapy and other cancer therapies. Patients who develop late LCNP may experience profound functional impairment with deficits in swallowing, speech, and voice. The objective of this paper was to examine the impact of late LCNP on symptom burden among OPC survivors. We hypothesized that OPC survivors with late LCNP would report worse symptom scores and higher levels of interference.

Methods: 907 OPC survivors (median survival: 7 years) who received primary treatment at MD Anderson between January, 2000 – December, 2013 completed a cross-sectional survey (56% response rate) that included the MD Anderson Symptom Inventory – Head and Neck module (MDASI-HN). Late LCNP events defined by onset >3-months after cancer therapy were abstracted from medical records and confirmed by independent review of a head and neck surgeon. Multivariate models regressed MDASI-HN scores (symptom mean and interference) on late LCNP status adjusting for clinical covariates.

Results: 4.1% (n=37) of participants developed late LCNP. Respondents with late LCNP reported significantly worse mean symptom scores (LCNP: 2.4 vs. no LCNP: 1.4, p<0.001) compared to those who did not have LCNP. Late LCNP was independently associated with worse mean MDASI-HN symptom scores (Coefficient= 0.7, p=0.002, 95%CI: 0.3, 1.2) adjusting for age, survival time, sex, therapeutic modality, T-stage, subsite, type of radiotherapy and smoking. Individual symptoms that were most severe among survivors with late LCNP, in rank order of means, included difficulty swallowing (LCNP: 5.4 vs. no LCNP: 2.5, p<0.001), dry mouth (LCNP: 4.9 vs. no LCNP: 3.8, p=0.037), mucus (LCNP: 4.7 vs. no LCNP: 2.3, p<0.001), voice (LCNP: 4.3 vs. no LCNP: 1.3, p<0.001) and choking (LCNP: 4.0 vs. no LCNP:1.9, p<0.001). Among late LCNP cases, 6 patients rated difficulty swallowing, 4 rated voice and 4 rated choking as 10 of 10 severity, the worst possible score on MDASI-HN. Rank of individual symptom items differed among respondents without LCNP, with top symptoms including dry mouth, difficulty swallowing, mucus, fatigue, and taste. Late LCNP patients also reported significantly worse mean interference scores (LCNP: 2.0 vs. no LCNP: 1.0, p=0.002), a surrogate for QOL. Late LCNP was independently associated with worse with mean symptom interference scores (Coefficient= 0.7, p=0.034, 95%CI: 0.05, 1.3) after adjusting for age, survival time, sex, therapeutic modality, t-stage, subsite, type of radiotherapy, hpv status and smoking. Late LCNP patients reported significantly worse mean individual interference scores for work, general activity, enjoyment of life, relations with other people and mood compared to those without LCNP.

Conclusion: Late LCNP is a permanent, often progressive, condition. In our large survey study, OPC survivors with late LCNP reported significantly worse cancer-related symptoms and higher levels of interference demonstrating the relevance of late LCNP to both symptom severity and quality of life. Survivors with LCNP were more likely to report worse symptoms associated with motor functions of the upper aerodigestive tract (swallowing, voice). Further efforts are necessary to lessen symptom burden associated with this disabling late effect of cancer treatment experienced by OPC survivors.

SS07: SKIN CANCER

AHNS039: THE IMPACT OF IMMUNOSUPPRESSION ON HEAD & NECK CUTANEOUS SQUAMOUS CELL CARCINOMA PROGNOSIS: A SYSTEMATIC REVIEW OF THE LITERATURE WITH META-ANALYSIS

Oral Papers

Alhasan N Elghouche, MD, MS, Zachary E Pflum, MD, Cecelia E Schmalbach, MD, MS, FACS; Indiana University School of Medicine, Department of Otolaryngology - Head & Neck Surgery

Introduction: Despite the recognition that immunosuppressed patients with head & neck cutaneous squamous cell carcinoma (HN cSCC) demonstrate worse prognosis compared to immunocompetent counterparts, objective outcomes and consensus is lacking. The absence of large cohort studies and a national cSCC database precluded the ability to incorporate immune status into the 2018 8th edition of the American Joint Commission on Cancer (AJCC) staging system. For this reason, a systematic review and meta-analysis was performed to objectively define the relationship between immunosuppression and HN cSCC outcomes.

Methods: The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) methodology was utilized to search Ovid/Medline, Pubmed, Embase and Scopus databases for articles related to immunosuppression and HN cSCC (Figure 1). Data was extracted to investigate the impact of immunosuppression on locoregional recurrence (LRR), disease-free survival (DFS), disease-specific survival (DSS), and overall survival (OS).

Results: Seventeen studies met inclusion criteria. Articles were published between 1999-2016 and consisted of prospective cohort (15), prospective case control (1) and retrospective case control (1) studies, representing data from 5 countries. The systematic review included 2,886 patients, of which 317 (11%) were immunosuppressed. The immunosuppressed cohort consisted of solid organ transplant recipients (23%), patients with lymphoproliferative disorders (22%), patients with chronic immunosuppressive therapy (4%) and those with an unspecified etiology of immunosuppression (51%). A meta-analysis with pooled hazard ratios (HRs) using a fixed-effect model evaluated the outcome variables of interest. The pooled HR for LRR was 2.20 [95% CI 1.45 – 3.36] (Figure 2). The pooled HR for DFS was 2.69 [95% CI 1.60 – 4.51] (Figure 3). The pooled HR for DSS was 3.61 [95% CI 2.63 – 4.95] (Figure 4). The pooled HR for OS was 2.09 [95% CI 1.64 – 2.67] (Figure 5).

Discussion: Small cohort studies investigating HN cSCC suggest an association between immunosuppression and increased recurrence rates and worsened survival. However larger studies are lacking and the prognostic variable is not incorporated into the 2018 8th edition of the AJCC staging system. This systematic review with meta-analysis represents the largest HN cSCC immunosuppression study to date. Immunosuppressed patients carried a statistically significant worse LRR, DFS, DSS, and OS compared to immunocompetent HN cSCC patients. While it is intuitive that immunosuppressed patients carry a worse OS due to comorbidities, the statistically significant difference in DSS suggests a more aggressive tumor biology and underscores the importance of aggressive treatment and close follow-up of immunosuppressed patients.

Conclusion: HN cSCC immunosuppressed patients portend a significantly worse LRR, DFS, DSS, and OS compared to their immunocompetent counterparts. This study objectively supports the incorporation of immune status into future HN cSCC staging systems.

Figure 1. PRISMA Diagram.

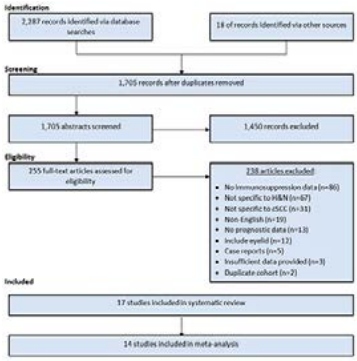


Figure 2. Locoregional Recurrence.

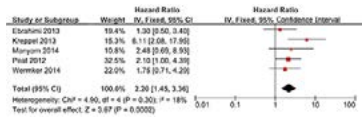


Figure 3. Disease-Free Survival.

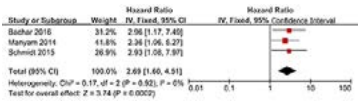


Figure 4. Disease-Specific Survival.

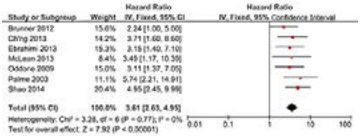
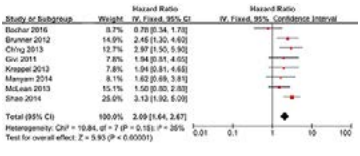


Figure 5. Overall Survival.



AHNS040: OUTCOMES OF BIOPSY TECHNIQUES PRIOR TO SENTINEL LYMPH NODE BIOPSY FOR PRIMARY CUTANEOUS MELANOMA OF THE HEAD AND NECK Matthew May, MD, Jeffrey Janus, MD; Mayo Clinic Rochester MN

Background: Sentinel lymph node biopsy (SLNB) is one of the most prognostic factors in respect to survival in patients with primary melanoma. Previous wide local excision (WLE) prior to SLNB may have the potential to disrupt lymphatic channels, thus incorrectly identifying the sentinel node. The purpose of this study is to assess the accuracy of WLE compared to other biopsy techniques in the identification of the SLN and survival outcomes in patients with melanoma of the head and neck.

Methods: Between the years 2000-2016, records of 391 cases of SLNB were reviewed in patients with primary cutaneous melanoma of the head and neck. SLNB was performed with lymphoscintigraphy and dye injection with a median tumor thickness of 1.9 mm and median follow up time of 30 months. Biopsy practices prior to SLNB (shave, punch, wide local excision, and excisional/Mohs), clinicopathologic features , location in the head and neck, SLN identification, nodal disease, incidence and sites of re-occurrence, and associations with time regional relapse and time to death from melanoma were evaluated using chi squared, Fisher exact tests, and Cox proportional hazard regression models.

Results: Of the 391 patients identified, biopsy patterns were as follows: 77 (19%) unknown biopsy, 30 (8%) prior WLE, 105 (27%) excisional biopsy, 69 (18%) punch biopsy, and 110 (28%) shave biopsy. SLNB was successfully identified in all 30 patients whom had a prior WLE. The median depth for WLE and excisional biopsy was significantly different compared to punch and shave biopsy (p< .001). Age, sex, mitotic index, ulceration, positive nodal status, and time from diagnosis to SLNB were not significantly different between biopsy practices (Table 1). At last follow up, there were 50 regional recurrences in the neck and 27 local recurrences with the median (IQR) at 1.2 years and 1.0 years, respectively following SLNB. Regional recurrence free survival rates (95% CI; number still at risk) at 2,4,6,8 and 10 years following SLNB were 87% (83-91; 186), 83% (78-88; 117), 78% (72-85; 63), 77% (71-84; 33), and 77% (71-84; 19), respectively. Univariable and multivariable associations of type of prior biopsy, depth of invasion, and nodal status with time to regional recurrence, local recurrence, death from any cause, and death from malignant melanoma are summarized in **Table 2**. Four of the 30 patients with WLE prior biopsies experienced regional recurrence at a median of 0.7 years following SLNB; 20 of the 109 patients with Mohs/excisional prior biopsies experience regional recurrence at a median of 1.3 years following SLNB; 19 of the 179 patients with punch/shave prior biopsies experienced regional recurrence at a median of 1.2 years following SLNB. There was no significant difference between type of biopsy and regional or local recurrence.

Conclusions: SLNBs of the head and neck can be successfully performed in patients with primary cutaneous melanoma after previous wide local excision. We continue to recommend performing a wide local excision and sentinel lymph node biopsy in a single stage procedure to minimalize mortality and morbidity of staging procedures for malignant melanoma of the head and neck.

Table 1: Associations with type of prior biopsy, N=613

Features	WLE Mohs/Excisional N=309	Punch N=60	Shave N=180	P Value
Age at SLNBx, years	61 (50-70)	61 (51-73)	61 (58-70)	63 (53-74)	0.663
Width in mm, (N=564)	33 (12-20)	10 (8-20)	10 (5-22)	7 (4-10)	<0.001
Depth in mm, (N=513)	2.5 (1.2-4.1)	5.2 (3.4-8.9)	1.6 (1.1-2.9)	1.4 (1.0-2.2)	<0.001
Silastic tube in nose, (N=249)	4 (1-10)	4 (2-8)	2 (1-4)	3 (1-7)	0.13
Operative time in min (N=314)	125 (73-150)	136 (77-212)	124 (83-169)	119 (73-172)	0.60
Days from diagnosis to SLNB	16 (7-31)	10 (5-21)	14 (8-20)	14 (8-20)	0.16
Sex			N (%)		
Female	9 (29)	25 (28)	24 (52)	27 (25)	0.28
Male	24 (80)	64 (72)	45 (95)	83 (75)	
Prior reconstruction	2 (7)	3 (3)	3 (6)	2 (2)	0.38
Tumor location*					
Ear, orbital	1 (3)	1 (1)	3 (7)	4 (4)	0.43
Ear	4 (13)	24 (27)	7 (16)	27 (25)	
Nose	0	3 (3)	3 (7)	2 (2)	
Perioral	0	2 (2)	3 (6)	1 (1)	
Scalp	7 (23)	10 (28)	10 (29)	21 (19)	
Temporal	2 (7)	0 (0)	4 (8)	14 (13)	
Neck	9 (29)	16 (18)	11 (24)	29 (28)	
Cheek	7 (23)	18 (21)	13 (22)	29 (28)	
Forehead	0	3 (3)	3 (5)	5 (5)	
Post. auricular	1 (3)	5 (6)	2 (3)	1 (1)	
Unknown	8 (27)	28 (28)	11 (19)	29 (24)	0.44
Pyrexia (N=274)					
Methylene blue	16 (70)	67 (90)	43 (72)	76 (74)	0.79
Isosulfan blue	7 (30)	10 (31)	15 (25)	24 (26)	
SLN detected	28 (100)	104 (95)	67 (94)	108 (98)	0.34
Positive nodes	6 (20)	24 (22)	13 (19)	14 (13)	0.34
Complications from SLNB	0	3 (3)	3 (5)	3 (2)	1.0

*All 118 patients in this cohort had tumors in a single site.

Table 2: Associations with time to relapse, time to local or regional relapse, time to neck relapse, death from any cause, and death from malignant melanoma

	Univariable HR (95% CI)	P-value	Multivariable HR (95% CI)	P-value
Feature				
		Regional Recurrence		
Type of prior biopsy				
WLE Mohs/excisional	1.72 (0.84-3.53)	0.077	1.49 (0.81-2.76)	0.20
Punch/Shave	1.0 (reference)		1.0 (reference)	
Depth*	1.33 (1.31-1.21)	0.026	1.09 (0.99-1.19)	0.078
Positive nodes	2.44 (1.37-4.33)	0.003	2.19 (1.34-4.20)	0.018
Type of prior biopsy				
WLE	1.07 (0.38-2.99)	0.90	1.04 (0.39-3.63)	0.88
Excisional/Punch/Shave	1.0 (reference)		1.0 (reference)	
Depth*	1.33 (1.31-1.21)	0.026	1.08 (0.99-1.19)	0.081
Positive nodes	2.44 (1.37-4.33)	0.003	2.29 (1.10-4.40)	0.013
		Local Recurrence		
Type of prior biopsy				
WLE Mohs excisional	1.39 (0.52-2.69)	0.68	1.09 (0.48-2.49)	0.83
Punch/Shave	1.0 (reference)		1.0 (reference)	
Depth*	1.10 (0.99-1.23)	0.088	1.09 (0.93-1.20)	0.40
Positive nodes	1.30 (0.59-3.29)	0.45	1.79 (0.71-4.50)	0.21
Type of prior biopsy				
WLE	2.39 (0.74-8.48)	0.16	2.16 (0.73-6.40)	0.16
Excisional/Punch/Shave	1.0 (reference)		1.0 (reference)	
Depth*	1.10 (0.99-1.23)	0.088	1.06 (0.93-1.20)	0.40
Positive nodes	1.39 (0.59-3.29)	0.45	1.82 (0.73-4.52)	0.20
		Death from Any Cause		
Type of prior biopsy				
WLE Mohs excisional	1.03 (0.63-1.61)	0.91	0.87 (0.34-1.41)	0.57
Punch/Shave	1.0 (reference)		1.0 (reference)	
Depth*	1.13 (1.07-1.21)	<0.001	1.11 (1.02-1.20)	0.014
Positive nodes	1.97 (1.29-3.01)	0.002	1.89 (1.04-3.09)	0.035
Type of prior biopsy				
WLE	1.31 (0.62-2.73)	0.48	1.28 (0.61-2.68)	0.51
Excisional/Punch/Shave	1.0 (reference)		1.0 (reference)	
Depth*	1.13 (1.05-1.21)	<0.001	1.11 (1.02-1.20)	0.015
Positive nodes	1.97 (1.29-3.01)	0.002	1.76 (1.03-2.99)	0.039
		Death from Malignant Melanoma		
Type of prior biopsy				
WLE Mohs excisional	1.14 (0.54-2.03)	0.67	0.91 (0.50-1.67)	0.77
Punch/Shave	1.0 (reference)		1.0 (reference)	
Depth*	1.13 (1.06-1.24)	<0.001	1.11 (1.02-1.21)	0.021
Positive nodes	2.99 (1.83-4.90)	<0.001	2.69 (1.43-5.05)	0.002
Type of prior biopsy				
WLE	1.04 (0.47-4.34)	0.11	2.04 (0.61-4.58)	0.049
Excisional/Punch/Shave	1.0 (reference)		1.0 (reference)	
Depth*	1.13 (1.04-1.24)	<0.001	1.11 (1.02-1.22)	0.021
Positive nodes	2.99 (1.83-4.90)	<0.001	2.70 (1.46-4.59)	0.002

AHNS041: ONCOLOGIC OUTCOMES FOLLOWING PRIMARY SURGICAL THERAPY FOR ADVANCED BASAL CELL CARCINOMA OF THE HEAD AND NECK

Amarbir S Gill, MD, Vinay R Nittur, BS, Michael Moore, MD, D. Gregory Farwell, MD, Arnaud F Bewley, MD; University of California, Davis

Purpose: Although basal cell carcinoma (BCC) is the most common form of skin cancer, locally advanced basal cell carcinoma of the head and neck is rare and not well studied. We examined oncologic outcomes following primary surgical treatment of these tumors.

Methods: We performed a retrospective review of patients who had undergone primary surgical resection of advanced head and neck basal cell carcinoma by head and neck surgeons at a tertiary academic center from 1998 – 2016.

Results: 85 patients with 101 tumors met inclusion criteria. 70% of patients were male and the mean age was 66. The most common subsite was the nose (24%), followed by the auricle (22%) and the periorbita (21%). 56% of tumors were recurrent with 53% having undergone prior surgical resection and 14% having undergone prior radiation. Frozen section or surgical margins were re-resected to negative margins in 30% of cases and 10% had positive final margins. Perineural invasion (PNI) was present in 21% of the cases and infiltrative tumors were the most common subtype (54%). Adjuvant radiation was administered in 21% of cases, primarily to those with positive margins or PNI. There were 21 recorded recurrences, which were primarily local (81%), and the majority of the local recurrences (88%) were succesfully salvaged with re-resection. There were four recorded BCC-related deaths, two from local recurrence and two from distant recurrence. The 5-year Kaplan-Meier estimated recurrence free survival (RFS) was 57.9%, overall survival (OS) was 79.9%, and disease-specific survival (DSS) was 96.5%. On Cox regression analysis, tumors with diameter > 2 cm were more likely to recur (p=0.05).

Conclusion: Locally advanced BCCs of the head and neck have high rates of intra-operative cut-through and local recurrence, indicative of their locally aggressive nature. Despite this, aggressive surgical management with re-resection and surgical salvage maintains a very low rate of mortality from this disease.

AHNS042: AURICULOTEMPORAL NERVE INVOLVEMENT IN PAROTID BED MALIGNANCY

James D Thompson, MD, Greg Avey, MD, Tiffany Glazer, MD, Aaron Wieland, MD, Timothy McCulloch, MD, Gregory Hartig, MD; University of Wisconsin

Purpose/Objectives: To identify patients with parotid bed malignancy demonstrating radiographic findings of auriculotemporal (AT) nerve involvement, and to evaluate for trends in imaging characteristics, pathology reports, or clinical findings.

Materials/Methods: Our institutional head and neck database was queried for patients from 1994 to 2017 with parotid bed malignancy. A retrospective chart review was performed for these patients to identify those with CT or MRI reports describing AT nerve involvement. These images were then independently reviewed by our

senior neuroradiologist to confirm these findings. AT nerve involvement was considered "highly likely" based on the presence of abnormal linear enhancement from the soft tissues just posterior to the subcondylar neck of the mandible to foramen ovale, along with abnormal enhancement or thickening of either the mandibular division of the trigeminal nerve or the main trunk of the facial nerve. AT nerve involvement was considered "possible" when there was either abnormal focal or globular enhancement in this region, or linear enhancement without identifiable facial or mandibular nerve abnormality. Additional chart review was performed to gather data regarding presenting symptoms, clinical exam findings, and pathology information.

Results: Out of 627 patients identified with parotid bed malignancy from our database search, 23 patients exhibited radiographic findings suggestive of AT nerve involvement. 13 patients met criteria for "highly likely" involvement, and 10 patients met criteria for "possible involvement". Cutaneous malignancy with metastasis to the parotid gland accounted for 10/23 patients, and the most common histology was squamous cell carcinoma (9 patients). Primary parotid malignancy accounted for 13/23 patients, and the most common histology was salivary ductal carcinoma (3 patients). At the time of diagnosis, all 13 "highly likely" patients reported periauricular pain, and 11/13 demonstrated some degree of facial weakness. Of the patients with "possible involvement", 6/10 reported periauricular pain and 6/10 demonstrated facial weakness. Features suggesting advanced disease were frequently identified, such as radiographic findings of intracranial involvement (10/23 patients), non-surgical primary treatment (13/23 patients), and positive margins on pathology report for those treated surgically (7/10 patients, 5 with deep margin positive).

Conclusions: Auriculotemporal nerve involvement is an uncommon but important phenomenon in both primary parotid malignancy and cutaneous malignancy metastatic to the parotid gland. Our cohort of patients suggests that when AT nerve involvement does occur, it is often in the setting of advanced malignant disease and is commonly associated with periauricular pain and coexisting facial weakness. Awareness of radiographic features of this pattern of spread can allow for proper identification of this phenomenon and help guide appropriate surgical or radiation treatment planning.

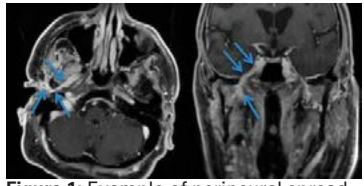


Figure 1: Example of perineural spread along the right AT nerve from a scalp squamous cell carcinoma on MRI. There is abnormal enhancement (blue arrows) within the infratemporal fossa extending along the skull base and through foramen ovale.

AHNS043: PATIENT-SPECIFIC THREE-DIMENSIONAL PRINTED TISSUE-EQUIVALENT BOLUS FOR RADIOTHERAPY OF HEAD AND NECK MALIGNANCIES INVOLVING SKIN

Brandon A Dyer, MD, Julian Perks, PhD, Cari Wright, CMD, David D Campos, PhD, Arnaud Bewley, MD, Tokihiro Yamamoto, PhD, Shyam S Rao, MD, PhD; University of California Davis

INTRODUCTION: Radiotherapy for advanced head and neck malignancies has improved with the use of more conformal techniques, such as intensity modulated radiation therapy. However, obtaining adequate surface dose delivery is problematic with the high energy photons or electrons generated by modern linear accelerators. Sheets of hand cut planar tissue-equivalent bolus (TEB) have traditionally been used to increase surface dose but are difficult to accurately position around irregular surfaces present in the head and neck. We therefore developed a patient-specific three-dimensional (3D) printing technique using a tissue-equivalent, translucent, rubber-like polymer to improve the conformity of bolus to skin and accuracy of delivered radiation dose for patients with head and neck malignancies requiring skin dose coverage.

METHODS: Following computed tomography (CT), a 3D bolus structure file was virtually generated in Philips Pinnacle3 treatment planning software, which allows for detailed customization to irregular surfaces, as well as modulation of thickness for compensator effect. The 3D TEB was printed on a PolyJet 3D printer with a commercially available translucent

rubber-like photopolymer. This material was chosen for its flexibility, allowing for better conformity to the skin surface, and translucence aiding in reproducible placement on the patient.

We analyzed the density properties of planar and 3D printed bolus using CT. Surface dose delivery was measured on an anthropomorphic phantom, and then on patients, using metal-oxide semiconductor field-effect transistor (MOSFET) measurements validated on three separate channels. Radiation was delivered on an Elekta Synergy clinical linear accelerator.

RESULTS: The 3D TEB demonstrated a density (1.087 g/cm3) similar to planar bolus (1.125 g/cm3). Measurements taken from across the 3D TEB demonstrated equal densities (range 1.086-1.088 g/cm3, SEM 0.002) similar to planar bolus (range 1.080-1.150 g/cm3, SEM 0.03). Phantom measurements of superficial dose were evaluated without bolus, with commercial planar TEB and with 3D TEB. The average output during MOSFET calibration was 99.7% (+ 2.7% SEM) of the prescribed dose. Without bolus material the measured surface dose was 36% of prescribed dose. 3D TEB and planar bolus were equivalent in providing adequate superficial dose, 104% versus 105% of prescribed dose, respectively. An initial cohort of 5 patients treated with 3D printed bolus were evaluated for surface dose delivery by MOSFET. The average measured difference in dose from prescription was 0.10% (SEM 0.014%) over 52 measurements.

CONCLUSION: We demonstrate that patient-specific 3D printed bolus has equivalent density to commercial planar TEB and uniform density throughout the structure. Additionally, the 3D TEB provides excellent surface dose delivery in both phantom studies and clinically treated patients. The 3D printed bolus has the advantage of conforming to complex surface geometries compared to planar bolus. Furthermore, the 3D bolus' flexibility and transparency allows for more reproducible positioning compared to commonly used 3D printed plastics which are rigid and opaque. Ongoing studies aim to further optimize the use of this 3D TEB for patients with head and neck malignancies requiring skin dose coverage.

AHNS044: INFRATEMPORAL FOSSA RESECTIONS IN PATIENTS WITH ADVANCED CUTANEOUS NON-MELANOMA MALIGNANCIES OF THE HEAD AND NECK: A RETROSPECTIVE ANALYSIS OF SURGICAL CASES AT A SINGLE, TERTIARY REFERRAL CENTER

Patrick F Morgan, MD, Anvesh Kompelli, William Harris, Terry A Day, MD, David M Neskey, MD, MSCR; Medical University of South Carolina

Background: Non-melanoma skin cancer, specifically cutaneous squamous cell carcinoma and basal cell carcinoma, is the most common malignancy worldwide. The majority of cases are cured via simple surgical excision, however approximately 5% of patients will exhibit recurrence, regional metastasis, or distant metastasis. Given the intimate anatomy of the head and neck, and the propensity for tumor spread via direct extension or perineural invasion, a subset of patients will develop advanced disease involving cranial nerves and the skull base. Management with curative intent in these patients is difficult and often requires aggressive surgical resection, reconstruction, and adjuvant treatments.

The literature is limited surrounding skull base resections for cutaneous malignancies, specifically those requiring resections of the infratemporal fossa. The authors reviewed surgical experiences in an attempt to further our understanding on how infratemporal tumor resections impact patient outcomes, including morbidity, mortality, disease free survival, and overall survival and if there are specific patient and tumor characteristics that independently influence these outcomes.

Methods: We conducted a retrospective analysis of patients with advanced cutaneous squamous cell carcinoma and basal cell carcinoma of the head and neck who underwent an infratemporal fossa approach for tumor resection from 2000 to 2016 at a single, tertiary-medical center.

Results: Twenty-six patients underwent infratemporal fossa tumor resection for either cutaneous squamous cell carcinoma (85%, n= 22) or basal cell carcinoma (15%, n=4) with a median follow-up of 26 months (range, 0-75 months). Eighty-percent (n=21) were men and the median age of all patients was 67 years (range, 51-93 years). Twenty-two of the patients (85%) had a history of a prior cutaneous malignancy in the head and neck with 73% (n=16) of those patients requiring

an infratemporal fossa tumor resection for recurrence or persistent disease. The vast majority had pT4 disease (73%, n= 19) and perineural invasion (88%, n=23). Extensive surgical resection was required in many patients with 42% (n=11) undergoing temporal bone resection and 50% (n=13) requiring sacrifice of the facial nerve. Six patients (23%) had a formal trigeminal ganglion biopsy or resection, with 67% (n=4) having identified carcinoma within the ganglion. The majority of patients required a free tissue transfer as means of reconstruction (65%, n= 17). Forty-two percent (n=11) received adjuvant radiation and 31% (n=8) received adjuvant chemotherapy and radiation. Recurrence or persistent disease was evident in 65% (n=17) with a median time to recurrence of 8 months. Carcinoma within the trigeminal ganglion did not have a significant impact on overall survival. One-year and 3-year overall survival was 77% and 62%, respectively, with mean overall survival of 50 months.

Conclusions: Infratemporal fossa tumor resection for non-melanoma cutaneous malignancies is reserved for advanced, high-risk malignancies. Surgical resection is associated multiple morbidities and often necessitates the need for free tissue transfer. Despite aggressive surgical resection and adjuvant treatment, many patients often recur or have persistent disease at the conclusion of treatment, however in a disease where evidence for systemic therapy is limited, aggressive surgical resection is often the only option at a chance for a cure.

SS08: BEST PAPERS OF AHNS 2018

AHNS045: THE IMPACT OF THE AFFORDABLE CARE ACT ON INSURANCE COVERAGE FOR HEAD AND NECK CANCER: A POPULATION-BASED ANALYSIS Richard B Cannon, MD, Patrick Carpenter, MD, Hilary C McCrary, MD, Hailey M Shepherd, Luke O Buchmann, MD, Jason P Hunt, MD, Marcus M Monroe, MD; University of Utah

Objectives: The Patient Protection and Affordable Care Act (ACA) was a significant regulatory overhaul to the US healthcare system. The majority of the provisions came into effect January 2014, including expanding Medicaid eligibility and providing subsidies for health insurance premiums to low-income adults near the federal poverty level, providing a federal health insurance exchange, and enforcing a mandate that individuals buy insurance. Head and neck cancer patients are often uninsured or underinsured at the time of their diagnosis and this access to care has been shown to influences treatment decisions and survival outcomes. The Surveillance, Epidemiology, and End Results (SEER) database is an epidemiological tool that was designed to be representative of the US population as a whole. Therefore, the objective of this study is to examine the impact of the ACA health care legislation on insurance rates and access to care among patients with head and neck squamous cell cancer in this large aggregate national dataset.

Methods: All patients with newly diagnosed aerodigestive tract head and neck squamous cell cancer from 2007 to 2014 were extracted from the SEER database. During this time period, prospective population-based tumor registries were available from 18 areas. Insurance rates were examined before and after the ACA Medicaid expansion, insurance mandate and subsidies, and opening of the health insurance marketplace to examine the impact of this health care policy, before (January 2007-December 2013) versus after (January 2014-December 2014). Rates of insurance were then compared between states that elected to expand Medicaid coverage in 2014 versus those states that decided to opt out.

Results: There were 89,038 patients who met the inclusion criteria. Among these patients newly diagnosed with aerodigestive tract head and neck squamous cell cancer, there was a significant increase in patients enrolled in Medicaid (16.4% versus 14.1%; $p<0.001$) and private insurance (80.8% versus 76.6%; $p<0.001$) after implementation of the ACA. In addition, there was a significant decrease in the rates of uninsured patients (4.8% versus 2.7%; $p<0.001$). Uninsured rates decreased by approximately 50% for head and neck squamous cell cancer patients after January 2014. This decrease in the rate of the uninsured and associated increases in Medicaid and private insurance coverage were only significantly observed in the states which adopted Medicaid expansion in 2014 ($p<0.001$).

Conclusion: Access to health care for head and neck cancer patients was improved after implementation

of the ACA, with an increase in both Medicaid and private insurance rates and a 2-fold decrease in uninsured patients, however, the impact of this health care policy was only significantly demonstrated in states which adopted the Medicaid expansion decision in 2014.

AHNS046: OCCULT NODAL DISEASE AND OCCULT EXTRANODAL EXTENSION IN OROPHARYNGEAL SQUAMOUS CELL CARCINOMA PATIENTS UNDERGOING PRIMARY TORS WITH NECK DISSECTION Caitlin McMullen, MD[1], Garneau Jonathan, MD[2], Emilie Weimar, MD[3], Ali Sana, MD[4], Joaquim Farinhas, MD, MBA[5], Eugene Yu[3], Peter Som, MD[2], Cathy Sarta[4], David Goldstein, MD, MSc, FRCSC[3], Su Susie, MSc[3], Wei Xu, PhD[3], Richard Smith, MD[4], Brett Miles, MD, DDS[2], John de Almeida, MD, MSc, FRCSC[3]; [1]Moffitt Cancer Center, [2]Mount Sinai Hospital, [3]Princess Margaret Cancer Center, [4]Montefiore Medical Center, [5]Florida Hospital - Tampa

Background: Transoral robotic surgery (TORS) with or without postoperative adjuvant radiation (RT) or chemoradiation (CRT) has become an acceptable alternative to definitive RT or CRT for select oropharyngeal cancers (OPSCC). The historically reported rates of subclinical cervical nodal metastases in OPSCC predate the emergence of Human Papilloma Virus (HPV) as the predominant causative agent. The rate of occult nodal disease in the current era of OPSCC dominated by HPV+ is not known, and consequently it is challenging to predict which patients will be upstaged postoperatively and require adjuvant therapy. Knowledge of the rate post-operative upstaging due to occult cervical disease or pathologic extranodal extension (ENE) would have a significant impact on treatment regimens.

Objective: The goal of this study was to determine the rate of nodal upstaging and occult ENE in a multi-institutional population of OPSCC patients treated with TORS and neck dissection (ND).

Methods: This retrospective, multicenter study examined the rate of post-operative pathologic upstaging for patients undergoing TORS with ND for OPSCC performed at the participating institutions: Princess Margaret Cancer Center, Toronto; Icahn School of Medicine at Mount Sinai, New York City; and Montefiore Medical Center, New York City. A neuroradiologist at each site blinded to final pathological diagnosis reviewed pre-operative imaging. These findings were compared to operative pathology. The AJCC 7th Edition was applied for staging.

Results: Ninety-five patients were identified that met inclusion, 85% of which were p16+. The mean age at surgery was 60 (SD = 10.5). There were 78 (82%) male and 17 (18%) female patients. The preoperative radiographic nodal stages were N2b n = 45 (47%), N0 n=19 (20%), N1 n=13 (14%), N2a n=9 (9%), N2c n= 8 (8%) and N3 n= 1 (1%). Thirty-three (35%) patients underwent bilateral neck dissections, and 62 (65%) underwent ipsilateral neck dissection only. Five of 19 (26%) patients with no evidence of nodal disease on imaging had occult nodal disease. Eight of 32 (25%) patients presenting with radiographic evidence of N0 or N1 disease on imaging were upstaged to more advanced disease, indicating implications for additional adjuvant treatment not predicted on a priori imaging. Nineteen patients (20%) were nodally upstaged postoperatively, and 27 (28%) were nodally downstaged postoperatively. Fifty-three patients (56%) had radiographic ENE or were suspicious for ENE preoperatively. Twenty-four patients (26%) had pathologic ENE in the cohort. Five of 42 patients (12%) had occult ENE in the absence of radiographic evidence. No patients with radiographic N0 disease had occult ENE. The sensitivity and specificity for pathologic ENE based on preoperative imaging were 79% (95% CI = 58%-93%) and 54% (95% CI = 42%-67%), respectively. The presence of radiographic nodal positivity (p=0.0053) and >1 suspicious node (p=0.0071) were associated with occult pathologic ENE on univariate analysis.

Conclusion: Predicting pathologic staging preoperatively for OPSCC patients undergoing TORS and neck dissection remains a challenge. Our findings suggest a small proportion of patients would require further adjuvant therapies not predicted on preoperative imaging based on occult nodal disease and ENE, and nearly one-quarter of patients will be down-staged postoperatively.

AHNS047: PERIOPERATIVE GABAPENTIN USE AMONG HEAD AND NECK SURGICAL PATIENTS Melanie E Townsend, MD, Tina Liou, MD, Schoer Morgan, BS, Miranda Lindburg, BS, Nicholas Scott-Whitenborn, BS, Dorina Kallogjeri, MD, Michael Bottros, MD,

Ryan Jackson, MD, Brian Nussenbaum, MD, Jay Piccirillo, MD, FACS; Washington University in St Louis

Importance: An important patient-physician interface is pain management; specifically the treatment of postoperative pain. Effective management increases patient satisfaction, reduces hospital costs, reduces postoperative morbidity and shortens hospitalizations8. Multimodal pain therapy employs non-narcotic medications to improve overall pain control and decrease narcotic medication requirements and side effects2-5, 8. Few prospective studies investigate multimodal pain management in postoperative otolaryngology patients9-15.

Objective: To elucidate the impact of perioperative gabapentin use on postoperative pain in patients undergoing mucosal head and neck surgeries

Design: Double blinded, placebo-controlled randomized trial

Participants: Adults undergoing head and neck mucosal surgeries with a planned admission of at least one night were included. Participants were screened based on chronic narcotic use and gabapentin use. They were randomized to receive either placebo or 300mg of PO gabapentin BID, given before surgery and up to three days postoperatively. Postoperative pain medication regimens were controlled.

Main Outcomes: Primary outcome was total narcotic use compared between groups. Secondary outcomes included subjective pain scores utilizing the visual analogue scale (VAS), patient satisfaction surveys, and side effects associated with gabapentin use.

Results: Ninety patients were randomized to placebo (n=46) or gabapentin (n=44). Sample size calculations were based on prior studies investigating gabapentin use in adult tonsillectomy patients. Descriptive analysis revealed both groups to be similar in age, sex, race, smoking status, alcohol use, OSA risk, tumor stage, surgical site and number of necks dissected, reconstruction method, and postoperative steroid and aspirin administration. The gabapentin group had slightly more patients with an ACE-27 comorbidity score of "none". Both groups had similar self-reported levels of pain tolerance, narcotic effectiveness and daily pain. Narcotic use calculated in morphine equivalents revealed a mean difference of 0.31mg/hr (95% CI -0.34-0.96) between groups, and was not statistically significant. Narcotic use stratified into the first, second and third 24 hrs on study also was similar between groups. VAS subjective pain scores were captured TID for resting, coughing and swallowing. To explore the difference between groups, mixed model analysis of VAS scores was performed. After controlling for differences in comorbidity, VAS scores were found to be significantly lower in the gabapentin group for all categories (rest 7.7mm, 95% CI 0.3-15.1mm; cough 9.2mm, 95% CI 0.8-17.7mm; swallow 10.5mm, 95% CI 1.4-19.5). Subjective satisfaction with pain control was 10% higher in the gabapentin group, but was not statistically significant (10%, 95% CI -22.1- 3.3). There was a slightly higher incidence of nausea in the placebo group as compared to the gabapentin group, and a similar incidence of sedation and dizziness between groups.

Conclusion: Perioperative gabapentin is shown to result in significant improvements in subjective pain scores in head and neck mucosal surgery patients. The swallow VAS improvement reached a level regarded as clinically significant in anesthesia literature1. This regimen did not reduce total narcotic usage. Results trended toward a higher satisfaction with pain control and a lower incidence of nausea in the gabapentin group. Gabapentin at 300mg PO BID is able to reduce the subjective perception of pain in an acute setting in these patients.

AHNS048: DIFFERENCES IN OPIOID UTILIZATION AFTER MAJOR HEAD AND NECK PROCEDURES: A COMPARISON OF INSTITUTIONS IN HONG KONG AND THE UNITED STATES. Ryan J Li, MD[1], Jason YK Chan, MD[2]; [1]Oregon Health and Science University, [2]Chinese University of Hong Kong

Importance: The current opioid abuse epidemic in the United States warrants evaluation of prescribing practices within all medical specialties. This includes a review of postoperative pain management for patients undergoing major head and neck procedures. Comparison with international pain management practices can illuminate opportunities for more judicious utilization of opioid and non-opioid pain medications.

Objective: To report differences in postoperative pain regimens between

an international and domestic surgical program, for patients undergoing major head and neck surgical procedures.

Design, Setting, and Participants: The head and neck surgery programs at the Chinese University of Hong Kong (CUHK) and Oregon Health and Science University (OHSU) retrospectively reviewed pain management patterns after major head and neck surgical procedures, focusing on opioids, non-steroidal anti-inflammatory drugs (NSAIDs), acetaminophen, and select anxiolytics. Gabapentinoids were not utilized at CUHK and therefore were not included in our analysis. Cases from November, 2014 through August, 2017 were reviewed. Standing medication orders on postoperative day one (POD1), six (POD6), and fourteen (POD14) were compared between institutions. Student's t-test was used to compare continuous variables, Chi-square for categorical variables, and multivariate regression for factors associated with opioid ordering.

Exposures: Major head and neck surgery.

Results: A total of 250 patient cases from CUHK, and 386 patients from OHSU were analyzed (mean [SD] age, 59.9 [1.68] and 62.5 [0.76] years, respectively). There was no difference in gender distribution, or the distribution of major head and neck procedures (including glossectomy, pharyngectomy, laryngectomy, mandibulectomy, neck dissection, and free tissue transfer) between institutions. CUHK patients had a markedly lower frequency of opioid orders on POD1 (4% vs. 86%, P<0.001), POD6 (13% vs. 84%, P<0.001), and POD14 (5% vs. 69%, P=0.004). There was no difference in acetaminophen orders between institutions (CUHK vs. OHSU) at POD1 (76% vs. 80%, P=0.867), POD6 (74% vs. 79%, P=0.810), and POD14 (73% vs. 69%, P=0.793). CUHK patients had a higher frequency of NSAID orders on POD1 (12% vs. 2%, P<0.001), POD6 (17% vs. 3%, P<0.001), and POD14 (17% vs. 9%, P=0.003). CUHK patients had a lower frequency of anxiolytic orders on POD1 (12% vs. 26%, P< 0.001), POD6 (15% vs. 27%, P<0.001), and POD14 (12% vs. 20%, P=0.004). On multivariate analysis, surgery at CUHK was associated with a 6-fold decreased likelihood of opioid orders on POD1 (P<0.001), 3-fold decrease on POD6 (P<0.001), and 5-fold decrease on POD14 (P<0.001). Conversely, age, gender, types of procedure, acetaminophen, NSAID, and anxiolytic orders were not significantly associated with opioid orders.

Conclusions and Relevance: A markedly lower frequency of postoperative opioid orders was observed from CUHK (Hong Kong) compared to OHSU (Oregon, USA), across similar major head and neck procedures. This stark contrast encourages a critical examination of 1] cultural and patient expectations of pain control; 2] the metrics by which control is assessed; 3] industry and economic drivers of opioid usage; and 4] strategies to reduce opioid orders. A thoughtful shift in postoperative pain protocols that deemphasizes opioid usage may be an opportunity to counter the epidemic of opioid abuse in the United States.

AHNS049: DELAYS DURING TREATMENT FOR LARYNGEAL SQUAMOUS CELL CARCINOMA: AN ANALYSIS OF THE NATIONAL CANCER DATABASE Elliot Morse, BS, Benjamin Judson, MD, Saral Mehra, MD, MBA; Department of Surgery, Division of Otolaryngology, Yale University School of Medicine, New Haven, CT, 06520, USA

Background: Treatment delays have been associated with overall survival in head and neck cancer (HNC) but have not been explored in laryngeal squamous cell cancer (LSCC) in a national sample. There are no national benchmarks for treatment delays in LSCC and it is unclear if delays are associated with overall survival.

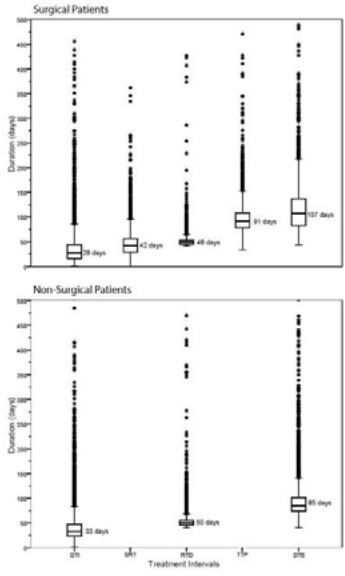
Objectives: To characterize treatment delays in LSCC patients treated with either primary surgical treatment or primary non-surgical treatment. Specifically, we identified median durations of treatment delays, associated delays with patient-, tumor-, and treatment-related variables, and associated delays with overall survival (OS).

Methods: We identified a retrospective cohort of LSCC patients treated with primary surgery or radiation, 2004-2013, included in the National Cancer Database. We identified median durations for diagnosis-to-treatment initiation (DTI), surgery-to-adjuvant start (SRT), radiation treatment duration (RTD), total treatment package (TTP), and diagnosis-to-treatment end (DTE) in surgical patients and DTI, RTD, and DTE in non-surgical patients. For each interval, we compared delayed (fourth quartile) patients to non-delayed (first and second quartile) patients. We

associated delays with patient, tumor, and treatment characteristics with multivariable binary logistic regression. We associated delays with overall survival with cox proportional hazards regression, controlling for clinically-relevant covariates. RTD was controlled for in analyses of TTP and DTE.

Results: 33,819 patients were included in this study. 10,503 (31%) received surgical treatment and 18,175 (69%) non-surgical treatment. Median durations of DTI, SRT, RTD, TTP, and DTE were 28, 42, 48, 91, and 107 days for surgical patients; median DTI, RTD, and DTE were 33, 50, and 85 days in non-surgical patients (figure 1). Non-white race and Medicare, Medicaid, and no insurance were associated with delays in most intervals examined. Treatment at an academic institution was associated with decreased delays in RTD but increased delays were observed in most other intervals examined. In surgical patients, delayed SRT, RTD, and TTP were associated with decreased OS (HR=1.15 (1.03-1.29), p=0.015, HR=1.21(1.09-1.36), p=0.001, and HR=1.16 (1.02-1.31), p=0.025, respectively); delayed DTI and DTE were not (HR=0.96 (0.87-1.06), p=0.440 and HR=1.13 (0.99-1.29), p=0.062, respectively) (figure 2). In non-surgical patients, delayed DTI, RTD, and DTE were associated with decreased OS (HR=1.08 (1.02-1.14), p=0.007, HR=1.37 (1.30-1.44), p<0.001, and HR=1.09 (1.03-1.16), p=0.003, respectively).

Conclusions: The median durations we identified here can serve as national benchmarks for individual institutions. Treatment delays are associated with multiple patient-, tumor-, and treatment-related factors. Delayed SRT and TTP (≥56 and 107 days, respectively) are associated with worse OS in surgical patients, delayed DTI and DTE (≥47 and 101 days, respectively) are associated with worse OS in non-surgical patients, and delayed RTD (≥52 and 55 days in surgical and non-surgical patients, respectively) is associated with OS in both groups. These treatment durations could be considered quality indicators in LSCC.



		Not Delayed		Delayed		HR (95% CI)	P value
		Days	5 year OS	Days	5 year OS		
DTI	Surgery	≤28	55%	≥44	60%	0.96 (0.87-1.06)	0.440
	No Surgery	≤33	59%	≥47	53%	1.08 (1.02-1.14)	0.007
SRT	Surgery	≤42	64%	≥56	51%	1.15 (1.03-1.29)	0.015
RTD	Surgery	≤48	65%	≥52	53%	1.21 (1.09-1.36)	0.001
	No Surgery	≤50	65%	≥55	47%	1.37 (1.30-1.44)	<0.001
TTP	Surgery	≤91	66%	≥107	50%	1.16 (1.02-1.31)	0.025
DTE	Surgery	≤107	66%	≥117	51%	1.13 (0.99-1.29)	0.062
	No Surgery	≤85	62%	≥101	30%	1.09 (1.03-1.16)	0.003

AHNS050: THE ROLE OF TRAF3/CYLD MUTATIONS IN THE ETIOLOGY OF HUMAN PAPILLOMAVIRUS-DRIVEN CANCERS OF THE HEAD AND NECK

Tejas S Sathe, Michael A Hajek, MD, Andrew Sewell, MD, Cassie J Pan, Wendell G Yarbrough, MD, MMHS, Natalia Issaeva, PhD; Yale University Department of Surgery - Division of Otolaryngology

The incidence of HPV-positive head and neck squamous cell carcinoma (HNSCC) continues to rise. Though HPV-positivity is correlated with improved treatment responsiveness and survival, up to a quarter of HPV-positive HNSCC recur and metastasize despite aggressive therapy. Currently, there is no way to identify which of these HPV-positive patients could be treated as effectively with de-escalated therapy, thereby avoiding treatment-associated morbidity.

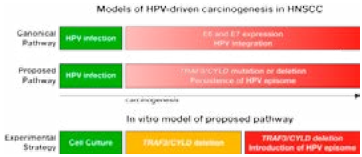
The canonical pathway of HPV-driven carcinogenesis centers on the degradation of p53 and Rb by the

oncoproteins E6 and E7, respectively, following viral integration into the host genome. However, up to 30% of HPV-positive tumors in the head and neck demonstrate absence of integration sites, and the mechanism by which HPV causes HNSCC without integration is not understood.

We previously showed that TNF Receptor Associated Factor 3 (TRAF3) and cylindromatosis (CYLD) genes were preferentially deleted or mutated in HPV-positive tumors within The Cancer Genome Atlas (TCGA) HNSCC cohort. TRAF3 and CYLD are known negative regulators of the transcription factor NF-βB, which has diverse roles in immunity, inflammation and cell survival. We also showed that these mutations were not frequently observed in other solid tumors, including HPV-negative HNSCC and cervical cancer. Furthermore, the presence of these mutations was correlated with upregulation of NF-βB activity, the maintenance of non-integrated HPV episomes and improved survival. Thus, we hypothesize that a subset of HPV-positive tumors in the head and neck arises from a novel pathway of carcinogenesis dependent on NF-βB overactivation through intermediates such as TRAF3 and CYLD.

We developed an in vitro model of this pathway based on deletion of TRAF3 and CYLD in cell culture using the CRISPR/Cas9 system. Here, we describe a series of experiments in which we introduce episomal HPV DNA into TRAF3/CYLD deleted cell lines and determine the replication of HPV, expression of HPV proteins, integration of HPV into the host genome and overall effects on NF-βB pathways. We also assess cell growth, proliferation and invasion through an extracellular matrix as correlates of cell transformation.

The goal of this work is to determine the role of TRAF3 or CYLD in HPV-associated head and neck cancer. This will serve as a preliminary step in better understanding the role of alterations in the NF-βB pathway in the development of HPV-driven HNSCC. Furthermore, a mechanistic understanding of the contribution of TRAF3 and CYLD inactivation to carcinogenesis would further support the use of these markers in identifying candidates for therapeutic de-escalation clinical trials to decrease treatment-related morbidity without negatively impacting survival.



SS09: ORAL CAVITY

AHNS051: PROGNOSTIC PERFORMANCE OF THE AJCC 8TH EDITION STAGING SYSTEM IN PATIENTS WITH EARLY ORAL TONGUE CANCER

Moran Amit, Samantha Tam, Zafereo Mark, Diana Bell, Randal Weber; MD Anderson Cancer Center

Background: The recently released 8th edition of the American Joint Committee on Cancer (AJCC) Staging Manual, Head and Neck Section, introduces significant modifications from the prior 7th edition. In oral cavity cancer, T and N classification have incorporated depth of invasion (DOI) and extranodal cancer extension (ENE). These modifications are predicted to better discriminate between higher risk small cancers from those with less invasive cancers that have an excellent prognosis.

Objective: To evaluate the performance of the 8th edition of the AJCC staging system for early oral cavity squamous cell carcinoma (OCSCC) in a high-volume cancer center.

Study design: Data from 244 OCSCC cancers treated at the University of Texas, MD Anderson Cancer Center, between 1997 and 2011 were reviewed. Patients had either pT1 or pT2 classification oral tongue SCC according to the AJCC 7th edition staging manual. Pathological specimens were reviewed and all patients with available pathological data (i.e. DOI and ENE) were reclassified according to the 8th edition of the AJCC staging system. Median follow up was 73 months (range 5-440 months).

Main Outcomes and Measures: Overall survival, disease specific survival, and disease-free survival were analyzed. The log-rank test was used to compare Kaplan-Meier survival curves. Staging systems were evaluated using the likelihood ratio tests and visual inspection for stratification into distinct prognostic categories. . Staging systems were evaluated using the Akaike information criterion (AIC), likelihood ratio (LR) tests and visual inspection for stratification into distinct

prognostic categories.

Results: Overall 100 (41%) early stage OCSCC patients were reclassified into different T and N classification by the new system. Using the DOI criteria of the new staging system, 46 (19%) and 44 (18%) patients with T1 and T2 classification, respectively, were upstaged. Twenty-seven patients with ENE (N1, n=7 (3%); N2a, N=1 (<1%); N2b, n=16 (7%); and N2c, n=3 (1%)) were upstaged.

Using the AJCC 8th edition overall TNM stage survival curves resulted in a better stratification of early and advanced risk groups (i.e. stage 1-2 versus stages 3-4, respectively) compared to the AJCC 7th edition, for OS, DSS and DFS. Five-year overall survival using AJCC 8th edition were 90%, 83% 64% and 53% (LR=24.6, AIC=783, p<.001) and 88%, 76%, 64% and 51% (LR=21.9, AIC=796, p<.001) using the 7th edition classification for stages I, II, III and IV respectively. On the basis of the lower AIC, visual inspection of Kaplan-Meier curves, and statistically significant improvement in LR, the 8th edition staging system outperformed the existing AJCC stage. also demonstrated better performance based on lower Negative Log Likelihood scored for disease specific survival and disease free survival.

Conclusions: This study suggests the first validation set for the new AJCC classification of early oral tongue SCC using a comprehensive histopathologic data from a high volume cancer center. Our data show that incorporating DOI and ENE in the staging system resulted in improved risk stratification of patients with early OCSCC. These data can inform quality improvement efforts and the counseling of patients currently considered as early stage tongue cancer.

AHNS053: IS ORAL CAVITY CANCER IN YOUNG NON-SMOKERS BIOLOGICALLY DISTINCT? Kathryn M Vorwald, DDS, MD, Nicholas T Gimbrone, PhD, Caitlin P McMullen, MD, Laura F Martin, MD, PhD, Janis de la Iglesia, PhD, Robbert J Slebos, PhD, J Trad Wadsworth, MD, Christine H Chung, MD; H. Lee Moffitt Cancer Center & Research Institute

Importance: Oral cavity cancer incidence is increasing in a unique population of patients who are younger and lack chronic exposure to the classic risk factors of tobacco and alcohol. Research in this subset of patients has thus far failed to identify any significant differences which may reveal potential genetic predispositions or alternate etiologies.

Objective: To further ascertain the molecular characteristics of oral cavity cancers in young non-smokers.

Design, Setting, and Participants: A nested case-control study was carried out utilizing publically-available data from The Cancer Genome Atlas (TCGA) to identify all patients who were diagnosed at 40 years or younger with a primary oral cavity squamous cell carcinoma and had minimal former or no smoking history. Each patient was matched to three older patients based on subsite, smoking history, tumor classification, pathologic stage, and sex. The controls were at least 20 years older to avoid overlapping effects of age. A comparative genomic analysis was conducted to identify any features in the younger cohort that differed from the older group.

Results: Fourteen patients ≤40 years met sample selection criteria (median: 29.5, range: 19-40, 64.3% male) and were matched to a total of 42 patients ≥58 years (median: 66, range: 58-87, 54.8% male), resulting in 54 patients on whom the analyses were conducted. Hierarchical clustering was performed to generate a gene expression heatmap utilizing a previously-published 840-gene cancer subtype classifier set, and this showed no predilection of the younger patients toward any one of the four subtypes (basal, mesenchymal, atypical, or classical). A gene expression rank test revealed 170 genes with more than a two-fold change between the two groups at an unadjusted p<0.01. These genes were enriched for biologic processes of locomotion, cell motility, and migration (FDR=0.00004) and molecular functions of deaminase activity and receptor binding (FDR=0.007). They also displayed notable enrichment for the cellular components of extracellular matrix (FDR=0.0008). Principal component analysis of this same 170-gene dataset showed a first component accounting for 9% of all variability which separated nearly all young patients from the old. A supervised heatmap utilizing the top 50 genes from this first component clustered all the young cases together, separating them from the majority of older patients; however, nine older controls showed similar profiles to the young. Additionally, evaluation of gene mutations revealed a complete absence of FAT1 mutations in the young group as compared to a 26.8% mutation rate

in the older group (p=0.048, Fisher's Exact test). The younger population also had a higher proportion of CDKN2A mutations, but this difference did not reach significance.

Conclusions and Relevance: Exploration of gene expression profiles of oral cavity tumors from this subset of young and old patients revealed gene enrichment for biological pathways and cellular location in the young patients that appears to be consistent with a generally more aggressive biological phenotype. These differences seen in the gene expression and gene mutation profiles need further confirmation in independent cohorts.

AHNS054: COMPREHENSIVE ANALYSIS OF MINOR SALIVARY GLAND MALIGNANCIES OF THE HEAD AND NECK Jamie Oliver[1], Peter Wu[1], Clifford Chang[1], Binhuan Wang[1], Moses Tam[1], Zujun Li[1], Cheng Liu[1], Mark Persky[1], Kenneth Hu[1], David Schreiber[2], Babak Givi[1]; [1]New York University School Of Medicine, [2]SUNY Downstate Medical Center

Introduction: Minor salivary gland malignancies could originate from all subsites of head and neck. A variety of pathologies have been reported and the outcomes of treatment are highly variable. We investigated the National Cancer Database (NCDB) for the patterns of occurrence, treatments and outcome.

Methods: All pathologies attributed to the minor salivary gland tumors were searched and selected from the NCDB between 2004-2014. Site, pathology, demographics, treatment modalities, and outcomes were analyzed. Univariable and multivariable analysis were performed to identify significant factors in survival.

Results: In the study time period, 11,415 patients with minor salivary gland cancers were identified. Median age was 60 and the majority were female (55.6%). The most common subsite was oral cavity (48.3%), followed by oropharynx (18.1%), sinonasal (14.1%), and eye and orbit (12.7%). Overall, 16 distinct histologic types were identified. The most common pathologies were adenoid cystic carcinoma (31.3%) and mucoepidermoid carcinoma (29.5%), followed by adenocarcinoma (11.2%), and polymorphous adenocarcinoma (9.5%). Most patients were stage I-II (60.8%) but a substantial proportion were high stage (IVA-B 25.1%, IVC 3.8%). The majority of patients were treated by surgery alone (5755, 53.3%), followed by surgery and adjuvant radiotherapy (2629, 24.3%), and surgery radiotherapy and chemotherapy (589, 5.45%). Other patients received radiotherapy alone (536, 5.0%), radiotherapy and chemotherapy (466, 4.3%), or did not undergo treatment (540, 5.0%). The median survival for the entire group was 133 months. Tumors arising from oral cavity and oropharynx and mucoepidermid carcinoma and polymorphous adenocarcinoma histologies had the longest survival. Larynx and hypopharynx sites and adenocarcinoma histology had the worst survival. In univariable analysis, age ≥ 65 (HR = 3.13, 95% CI = 2.77 – 3.53, $p < 0.001$), male sex (HR = 1.28, 95% CI = 1.19 – 1.38, $p < 0.001$), higher comorbidity score (Charlson/Deyo Score ≥ 2, HR = 2.22, 95% CI = 1.86 – 2.65, $p < 0.001$), higher stage (stage IVC, HR = 3.44, 95% CI = 2.87 – 4.13, $p < 0.001$), adenoid cystic (HR = 1.16, 95% CI = 1.03 – 1.30, $p = 0.01$) and adenocarcinoma histology (HR = 1.50, 95% CI = 1.31 – 1.71, $p < 0.001$), and sites other than oral cavity and oropharynx were associated with worse survival. All retained their significance in multivariable analyses. Surgical treatment was associated with improved survival in univariable and multivariable analyses (HR = 0.39, 95% CI = 0.36 – 0.43, $p < 0.001$).

Conclusion: Minor salivary gland malignancies most commonly arise in the oral cavity or oropharynx but comprise a wide variety of histologies. Nearly 40% of patients present with stage III-IV disease. Nevertheless, with surgery and/or radiation, extended median survivals are achieved.

AHNS055: ANALYSIS OF RISK FACTORS ASSOCIATED WITH UNPLANNED REOPERATION FOLLOWING MAJOR CANCER OPERATIONS OF THE HEAD AND NECK Kalin K Nishimori, MBS, Eric H Zhao, BS, Neel R Sangal, BA, Sana H Siddiqui, BA, Jean A Eloy, MD, Soly Baredes, MD, Richard C Park, MD; Rutgers New Jersey Medical School

Objectives: Evaluate risk factors for unplanned reoperation following major cancer operations of the head and neck.

Study design: Retrospective database review.

Methods: The National Surgical Quality Improvement Program database was queried for major cancer operations of the head and neck between 2005 and 2014. Specific operations analyzed were glossectomy,

mandibulectomy, laryngectomy, and esophagectomy. Univariate and multivariate analyses were performed to compare patients with unplanned reoperation and those without.

Results: A total of 4,846 patients were identified, with an overall unplanned reoperation rate of 13.9% (n=672) within 30 days after surgery. Upon multivariate analysis, independent risk factors for unplanned reoperation following a major cancer operation of the head or neck included ages 61-80 years (OR=5.357, 95% CI [1.079-26.592]), ventilator dependent (OR=25.896, 95% CI [3.046-220.157]), and prolonged total operative time (OR=1.002, 95% CI [1.001-1.003]). Post-operative surgical (OR=2.743, 95% CI [1.685-4.465]) and medical complications (OR=3.419, 95% CI [2.088-5.600]) were significant predictors of unplanned reoperation. Among the unplanned reoperation patients, 516 (76.8%) underwent reoperation during their initial hospital admission and 156 (23.2%) after readmission. Average number of days from principal operative procedure to unplanned reoperation was 8.5 for initial-admission reoperations and 16.0 for readmission reoperations. Most common unplanned reoperation procedures overall included exploration of the neck for postoperative hemorrhage, thrombosis or infection (6.1%); planned tracheostomy (separate procedure) (5.7%); and incision and drainage of deep abscess or hematoma of soft tissues of neck or thorax (3.6%).

The operative procedure with the highest reoperation rate was glossectomy (15.8%), followed by laryngectomy (14.1%), mandibulectomy (13.7%), and esophagectomy (13.3%). Upon multivariate analysis, independent risk factors for unplanned reoperation following glossectomy included white race (OR=3.911, 95% CI [1.175-13.024]), African American race (OR=4.298, 95% CI [1.125-16.422], diabetes (OR=1.953, 95% CI [1.127-3.384]), and prolonged total operative time (OR=1.002, 95% CI [1.001-1.003]). Independent risk factors for unplanned reoperation following laryngectomy included white race (OR=0.071, 95% CI [0.006-0.892]), and prolonged total operative time (OR=1.008, 95% CI [1.002-1.015]). An independent risk factor for unplanned reoperation following mandibulectomy was prolonged total operative time (OR=1.002, 95% CI [1.001-1.004]). An independent risk factor for unplanned reoperation following esophagectomy was ventilator dependent (OR=24.318, 95% CI [1.980-298.647]).

Conclusions: Ages 61-80 years, ventilator dependent, and prolonged total operative time are risk factors for unplanned reoperation following a major cancer operation of the head and neck. Glossectomy has the highest reoperation rate of the operations analyzed.

AHNS056: TRANSCRIPTOMIC PROFILE OF SQUAMOUS CELL CARCINOMA OF THE TONSIL IS UNIQUE COMPARED TO OTHER HEAD AND NECK NEOPLASMS

Shijun Sung, PhD[1], Karam Badran, MD[2], Thomas E Heineman, MD[2], Albert Y Han[2], Nahda Harati, BS[2], Peter Pellionisz, BS[2], Maie St. John, MD, PhD[2]; [1]University of California, Los Angeles, [2]David Geffen School of Medicine at UCLA

Objective: Previous studies have shown a strong association between head and neck squamous cell carcinoma (HNSCC) and mutations of programmed cell death ligand 1 gene (PD-L1). A total of 143 gene was found to exhibit significant somatic copy number alteration (amplification or deep deletion) that co-occurred or were in mutually exclusion with PD-L1. Whether these 143 genes are expressed at distinct levels across the primary sites of the head and neck region is not well understood.

Study Design: Retrospective, population-based cohort study of patients in the Cancer Genome Atlas (TCGA)

Methods: We analyzed genomic[AH1] , transcriptomic [AH2] and clinicopathologic characteristics from the TCGA database through cBioPortal interface. DNA methylation, protein abundance, and mRNA expression are compared by age groups, history of recurrence, primary tumor site, and history of alcohol consumption and smoking history. mRNA expression levels of the previously reported 143 genes were compared across various head and neck regions. Univariate analyses were performed to correlate the mRNA expression level with various clinical parameters.

Results: A total of 522 patients with HNSCC were identified. The database presented most number of patients with tumor at the oral tongue (24.7%, n=127), followed by the Larynx (21.3%, n=111). Most notably, squamous cell carcinoma

of the tonsil (8.4%, n =44) display elevated levels of mRNA expression (non-overlapping interquartile ranges) for at least seven critical genes in carcinogenesis including CNTLN, FOXD4, SPATA6L, and SMARCA2 (Figure 1, 2). The demographic information (age, gender, race) was compared between the tonsil and other primary locations, and Chi-square test revealed no differences in the distribution of relevant characteristics Furthermore, similar analysis on well-studied pathways in carcinogenesis such as the p53 signaling pathway also revealed elevated mRNA and protein expression levels at tonsil SCC as well. Despite the increased mRNA expression levels, the protein content was not always significantly different across primary sites.

Conclusion: Transcriptomic analysis of tonsil SCC revealed an elevation of expression of genes such as CNTLN, FOXD4, SPATA6L, and SMARCA2. Tonsil SCC is associated with smoking history, alcohol use, and human papilloma virus infection. Increase in mRNA expression and protein levels of p53-associated genes may be due to exposure to tobacco and/or alcohol. The identified molecules are involved in cellular differentiation and proliferation, and future studies should focus on the true relationship between known risk factors of tonsil SCC and transcriptomic alterations involving the key candidate genes of tonsil SCC pathogenesis.

Figures:

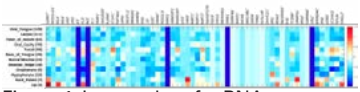


Figure 1. Image-plot of mRNA expression level (Z-score) at 12 different primary tumor sites for 60 genes associated with PD-L1 pathway alteration.

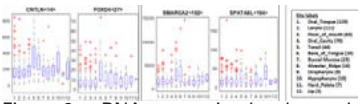


Figure 2. mRNA expression level at each primary tumor sites for some of the genes identified in Figure 1.

AHNS057: DEPTH OF INVASION AS A PREDICTOR OF NODAL DISEASE AND SURVIVAL IN PATIENTS WITH ORAL TONGUE SQUAMOUS CELL CARCINOMA Samantha Tam, MD, Moran Amit, MD, PhD, Mark Zafereo, MD, Diana Bell, MD, Randal S Weber, MD; University of Texas MD Anderson Cancer Center

Background: Depth of invasion (DOI) of oral tongue cancer is an important prognostic indicator of disease outcome and has been incorporated into the 8th Edition American Joint Committee of Cancer (AJCC) staging system for oral cavity squamous cell carcinoma (OCSCC). In addition to predicting prognosis, DOI plays a significant role in the decision to perform elective neck dissection in early OCSCC. However, current literature often reports DOI interchangeably with tumor thickness, making interpretation of results difficult. This study aims to investigate the role of DOI as a continuous variable to establish optimal DOI measurements for predicting occult nodal disease and disease outcome in patients with lateral oral tongue OCSCC.

Methods: A retrospective review was completed of patients with OCSCC treated at a tertiary care center between March 1997 and March 2012. Patients with clinically node negative and pathologic T1 or T2 lateral oral tongue disease according to the 7th edition of the AJCC undergoing elective neck dissection at the time of primary surgery were eligible for inclusion. DOI was defined as the millimeters of tumor extension deep to the basement membrane of adjacent normal epithelium. Pathologic re-review of surgical specimen was completed to ensure consistency in the measurement of DOI. Major outcome measures were the presence of occult nodal disease, overall survival (OS), and disease specific survival (DSS). Logistic regression was used to compute a receiver operator characteristic (ROC) function for the odds of occult nodal disease according to DOI. Time-dependent ROC functions were utilized to determine the effect of depth of invasion on OS and DSS. Youden's J index was then applied to the ROC functions to establish optimal DOI measurement cut points. Univariate and multivariate analysis was completed with the Cox proportional hazards model and models using different DOI measurement cutoff points were compared using the Akaike Information Criterion.

Results: A total of 176 patients met inclusion and exclusion criteria. One hundred two (58%) had pathologic T1 disease and 74 (42%) had T2 disease. Occult nodal disease was found in the pathologic specimen of 41 (23%) of

patients. A total of 54 patients (31%) underwent post-operative radiotherapy. For predicting occult nodal disease, a depth of invasion of 7mm was most predictive, with a positive likelihood ratio of 1.42 and an area under the curve (AUC) of 0.59. Optimal cut points for 5-year OS and DSS were both 8mm (AUC=0.65 and 0.73, respectively). Depth of invasion was an independent predictor for OS (adjusted hazard ratio [HRadjusted]=1.09/mm, 95% confidence interval [CI]=1.03-1.16) and DSS (HRadjusted=1.49/mm, 95% CI=1.18-1.89).

Conclusion: In the lateral tongue, a DOI of 8mm is an optimal cut point in determining both OS and DSS for patients with clinically node negative, early T classification oral tongue SCC. This study suggests that deeper invasion in early tongue SCC is predictive for occult nodal spread and survival compared to prior studies.

SS10: QUALITY ENGINEERING AND PATHWAYS

AHNS058: EFFECTIVENESS OF NON-OPIOID/NON-NARCOTIC POSTOPERATIVE PAIN MANAGEMENT REGIMEN FOR PATIENTS UNDERGOING THYROIDECTOMY AND/OR PARATHYROIDECTOMY

James R Biery, PAC, Phillip K Pellitteri, DO, FACS; Guthrie Clinic

Objective: To evaluate the effectiveness of a non-opioid/non-narcotic pain management regimen used to treat post operative pain in patients undergoing thyroidectomy and/or parathyroidectomy.

Materials and Methods: Patients undergoing thyroidectomy and/or parathyroidectomy preformed by our department during the time interval of April 2017 thru September 2017 receiving cutaneous injection with bupivacaine (0.5% bupivacaine hydrochloride with epinephrine, 1:200,000) administered prior to incision, and discharged with oral acetaminophen and ibuprofen (ibuprofen added to regimen on postoperative day two) represented the study population. Response to pain management was evaluated using a scaled standard medical pain assessment tool via verbal questionnaire at patients postoperative visit, 7-10 days post procedure.

Results: In total, 76 procedures were performed over the study period (49 thyroidectomy, 27 parathyroidectomy). Three patients were excluded from the study (2 thyroidectomy, 1 parathyroidectomy) due to preoperative chronic opioid therapy for an unrelated diagnosis. 73 patients (47 thyroidectomy, 26 parathyroidectomy) were included in the study. Of these, only 1 required an oral opioid/narcotic prescription for post surgical pain (requested on postoperative day two). On follow up, the remaining 72 patients (98.3%) reported adequate pain control with the prescribed regimen, and required no opioid/narcotic supplementation.

Conclusions: Pre-incision cutaneous injection of bupivacaine, coupled with oral acetaminophen and ibuprofen, provides adequate pain control post operatively in patients undergoing thyroidectomy and/or parathyroidectomy, therefore avoiding opioid/narcotic supplementation.

AHNS059: UTILITY OF THE LACE INDEX IN PREDICTING 30-DAY READMISSION RATE IN HEAD AND NECK FREE FLAP MICROVASCULAR RECONSTRUCTION PATIENTS

Ashley M Bauer, MD[1], Kelly M Malloy, MD[1], Emily Bellile, MS[2], Steven B Chinn[1], Matthew E Spector, MD[1], Chaz L Stucken, MD[1], Mark E Prince, MD[1], Jeff S Moyer, MD[1], Andrew G Shuman, MD[1], Scott A McLean, MD, PHD[1], Carol R Bradford, MD, FACS[2], Keith A Casper, MD[1]; [1]University of Michigan Department of Otolaryngology-Head and Neck Surgery, [2]University of Michigan

Background: Readmissions to the hospital are a costly use of resources and using tools to identify patients who are at risk for readmission is an area of increased interest. The LACE index is an easy-to-use scoring system used to quantify the risk of readmission after discharge. Though this measure has been validated in the general medicine patient population, it has not been found to be as predictive in specific patient subgroups, such as heart failure patients. Moreover, it has not been extensively studied in post-surgical patients. We sought to evaluate the predictive value of the LACE index in head and neck microvascular reconstruction patients following their index operation.

Study Design: All patients from January 2016 to April 2017 who had underwent head and neck microvascular free flap reconstruction were evaluated via retrospective chart review. The data collected included age at index

admission, length of stay, free flap indication, primary site of malignancy, T stage and N stage, type of free flap, comorbidities, medical/surgical complications during hospital stay, and readmission within 30 days of index discharge. Proportion of readmission episodes at each LACE score were calculated and associations between clinical and patient characteristics and readmission versus non-readmission episodes were tested using logistic regression.

Results: Data from 198 patients was analyzed in this cohort and showed an overall readmission rate of 27% (54/198). There was a significant association between LACE score and 30-day readmission rate. A LACE score of 10 or greater was a strong predictor for readmission with an odds ratio of 6.31 (3.09, 12.87). Dividing up LACE scores into risk categories of low (scores 4 to 6), immediate (scores 7 to 9) and high (score 10 or greater), we found that 1 out of 18 (5.6%) patients were readmitted in the low risk group, 12 out of 91 (13%) in the intermediate group, and 41 out of 89 (46%) patients in the high risk group. Length of stay was statistically significant for readmission. Patients who were not readmitted had a mean length of stay of 9.2 days while readmitted patients had a mean of 13.0 days. While we did not see a difference in readmissions when evaluating for presence of malignancy, tumor subsite or T stage, we did, however, see a trend for higher readmission rates among N+ patients compared to N0 patients (p=0.09) as well as presence of fistula (p=0.13); neither of these factos reached statistical significance.

Conclusions: The LACE score calculated at discharge on head and neck microvascular reconstruction patients may identify patints at risk of 30 day readmission. While there is a continuum of risk, a score of ≥10 identifies those patients at a significantly higher risk. Interestingly, this cutoff was the score which was found to be a significant indicator in the initial studies validating the LACE index. This pilot study supports the use of the LACE index prospetively to identify patients at higher risk for readmission, and open the door to design and study early interventions for these patients to mitigate their risk of readmission.

AHNS060: VALUE OF INTENSIVE CARE UNIT–BASED MANAGEMENT FOR MICROVASCULAR FREE FLAP RECONSTRUCTION IN HEAD AND NECK SURGERY

Pratyusha Yalamanchi[1], William W Thomas, MD[2], Alan Workman[1], Karthik Rajasekaran, MD[1], Rabie M Shanti, DMD, MD[2], Ara C Chalian, MD[2], Jason G Newman, MD, FACS[2], Steven B Cannady[2]; [1]Perelman School of Medicine at the University of Pennsylvania, [2]Department of Otorhinolaryngology–Head and Neck Surgery, Hospital of the University of Pennsylvania

Importance: While routine postoperative care for microvascular free flap reconstruction typically involves admission to the intensive care unit (ICU), few studies have investigated the effect of postoperative care setting on clinical outcomes and institution cost.

Objectives: To determine the value of non-ICU based postoperative management for free tissue transfer for head and neck surgery, in terms of clinical outcomes and cost-effectiveness.

Design, setting, and participants: Retrospective cohort study of two groups of adults who underwent vascularized free tissue transfer from October 2013 to October 2017 at an academic tertiary care center and community-based hospital respectively. Postoperative management differed such that the first group recovered in a protocol driven, non-ICU setting and the second was cared for in a planned admission to the ICU. A single surgeon performed all tissue harvest and reconstruction at both centers.

Main outcomes and measures: Descriptive statistics and cost analyses were performed to compare clinical outcomes and total surgical and downstream direct cost to the institution between the two patient groups. Categorical variables were compared using Chi-square analyses where appropriate.

Results: Among a total of 338 patients who underwent microvascular free flap reconstruction for head and neck surgical defects, there was no significant difference in patient characteristics such as demographics, comorbidities, history of surgical resection, prior free flap, and prior radiation between the postoperative ICU cohort (n=146) and protocol-driven, non-ICU cohort (n=192). There were 16 patients in the non-ICU group who spent >3 days in the ICU postoperatively secondary to patient comorbidities and patient care priorities. Still, the average

ICU length of stay was 7 days (IQR 6-9 days) for the planned ICU cohort versus 1 day (IQR 0-1) for the non-ICU group (p<.00001). There was no difference in operative variables such as donor site, case length, or total length of stay, and postoperative management in the ICU versus non-ICU setting resulted in no significant difference in terms of flap survival, reoperation, readmission, and postoperative complications. However, average cost of care was significantly higher for patients who received ICU-based care versus non-ICU post-operative care (p=.000054). Specifically, average room and board was 239% more costly for the planned ICU care group ($27,352.40) compared to the non-ICU setting ($11,449.47, p<.00001).

Table 1: Demographics

	Planned ICU Group	Non-ICU Group	*P* Value
n	146	192	
Average Age (y), ± SD	64.6 ± 13.0	61.5 ± 13.2	
Sex			0.955
Male	97 (66.4%)	127 (66.1%)	
Female	49 (33.6%)	65 (33.9%)	
Race			0.618
Non-Hispanic White	131 (89.7%)	165 (85.9%)	
Black	6 (4.1%)	14 (7.3%)	
Hispanic	5 (3.4%)	6 (3.1%)	
Asian	4 (2.7%)	7 (3.6%)	
Total no. of comorbidities, median (IQR)	2(0-3)	2(0-3)	0.686
History of ipsoradiation	38 (26.0%)	40 (20.8%)	0.109
History of prior surgical resection	36 (24.7%)	35 (18.2%)	0.151
History of prior free flap	7 (4.8%)	4 (2.1%)	0.164

IQR= interquartile range

Table 2: Operative and Outcome Variables

	Planned ICU Group, n=146	Non-ICU Group, n=192	*P* Value
Donor Site			0.108
ALT/ALTO	76 (52%)	82 (43%)	
FFF	24 (16%)	24 (13%)	
RFFF/OCRFF	36 (25%)	80 (42%)	
Scapula	2 (1%)	1 (1%)	
Ulnar	2 (1%)	5 (3%)	
Latissimus Dorsi	6 (5%)		
Average Case Length (min)	533.9	526.8	0.311
Average Procedure Length (min)	442.1	429.3	0.189
Average Total Length of Stay, days (IQR)	8.5 (6-9)	8 (4-8)	0.427
Average ICU Length of Stay, days (IQR)	7 (5-9)	1 (0-1)	**<.00001**
Postoperative Complications (n)	25 (17%)	38 (20%)	0.532
Incidence of reoperation (n)	15 (10%)	26 (14%)	0.362
Incidence of flap failure (n)	6 (4%)	7 (4%)	0.826
Incidence of readmission (n)	8 (5%)	22 (11%)	0.060
Average total hospital cost*, US$	$47,315.44	$38,853.50	**0.000054**
Average room and board cost, US$	$27,352.40	$11,449.47	**<.00001**

*Hospital costs exclude professional fees.
ALT=anterolateral thigh; ALTO=anterior lateral thigh osteocutaneous; FFF=fibular free flap; RFFF=radial forearm free flap; OCRFF= osteocutaneous radial forearm flap

Conclusions and relevance: This study demonstrates that postoperative management following microvascular free tissue transfer in a non-ICU setting is equivalent to standard ICU-based management in terms of clinical outcomes, while being less costly.

AHNS061: AN ANALYSIS OF PROCESSES OF CARE MEASURES RELATED TO DELAYED POSTOPERATIVE RADIATION THERAPY IN PATIENTS WITH SURGICALLY-TREATED HEAD AND NECK CANCER Tyler A Janz, BS, Anand K Sharma, MBBS, Terry A Day, MD, Evan M Graboyes, MD; Medical University of South Carolina

Importance: Adherence to evidence-based treatment guidelines and timely care are measures of quality cancer care. Prior research has demonstrated that delays in timely postoperative radiation (PORT) following surgery for head and neck squamous cell carcinoma (HNSCC) surgery are common and associated with decreased survival. Details regarding the processes of care that may contribute to delays in PORT remain unknown.

Objectives: Determine the frequency of PORT that is non-adherent to National Comprehensive Cancer Network guidelines regarding initiation within 6 weeks of surgery, and examine processes of care associated with delays in the initiation of PORT.

Methods: A single institution retrospective cohort study at an academic medical center was performed for patients with HNC undergoing surgery and PORT. Inclusion criteria consisted of patients ≥ 18 years of age undergoing surgery at the Medical University of South Carolina (MUSC) followed by PORT (at MUSC or elsewhere) with/without chemotherapy between 2014-2016. Patients with indications for PORT who did not ever start PORT and those with incomplete treatment records were excluded from the study. Univariable and multivariable logistic regression analysis was performed to identify process of care measures associated with delayed initiation of PORT.

Outcome Measures: The main outcome measure was the rate of delayed, non-guideline adherent initiation of PORT (i.e. initiating PORT more than 6 weeks postoperatively). Secondary outcome measures included processes of care related to delayed PORT. Other characteristics of quality PORT (e.g. dose, RT fields) were not evaluated.

Results: 198 patients were included in the study. 79.8% of the patients were white, 68.7% were male, and the median age was 59. The most common subsite was the oral cavity (60.8%), 54.5% of patients had American Joint Committee on Cancer (AJCC) pathologic T4a classification tumors, and 59.30% underwent free flap reconstruction. Overall, 44.7% of patients (89/199) experienced delayed initiation of PORT (i.e. more than 6 weeks after surgery). No oncologic or treatment factors were associated with delayed PORT. On multivariable analysis, the following process of care factors remained significantly associated with delayed PORT: pathology report issued more than 7 days following surgery (Odds Ratio [OR] 2.66; 95% Confidence Interval [CI] 1.31-5.42), adjuvant radiation outside of MUSC (OR 5.74; 95% CI 2.75-11.99), unplanned reoperation after hospital discharge (OR 7.12; 95% CI 1.31-

38.65), more than 21 days from surgery to 1st postoperative radiation oncology appointment (OR 3.73; 95% CI 1.37-10.17), and failure to undergo dental extractions prior to hospital discharge (OR 6.15; 95% CI 1.68-22.50).

Conclusions: Delays in timely, guideline-adherent PORT affected 44.7% of patients in this study and appear primarily due to process of care factors instead of oncologic or treatment characteristics. These processes of care can be used to design and implement quality improvement interventions to improve timely HNC care.

AHNS062: IDENTIFYING PREDICTORS OF DEPRESSION DEVELOPMENT IN HEAD AND NECK CANCER PATIENTS

Aru Panwar, MD[1], Katherine Rieke, MPH, MA[2], Kendra Schmid, PhD[2], William Burke, MD[3], Harlan Sayles, MS[2], Matthew Dobbertin, DO[4], Diane Bessette, PA[5], William Lydiatt, MD[1]; [1]Estabrook Cancer Center, Nebraska Methodist Hospital, Omaha, Nebraska, [2]College of Public Health, University of Nebraska Medical Center, Omaha, Nebraska, [3]Banner Alzheimer's Institute, Phoenix, Arizona, [4]Boys Town Child and Adolescent Psychiatry Clinic, Boys Town, Nebraska, [5]Department of Psychiatry, University of Nebraska Medical Center, Omaha, Nebraska

Background: head and neck cancer patients experience increased risk for depression and compromised quality of life. Pre-emptively identifying patients at risk for depression during head and neck cancer therapy can help establish targeted interventions.

Methods: Data analyses from a randomized trial examining prophylaxis with antidepressant escitalopram oxalate, in 125 patients diagnosed with new or recurrent stage II-IV head and neck epidermoid carcinoma, was aimed at identifying predictors of depression development. Depression was measured using the Quick Inventory of Depressive Symptomatology-Self Rated (QIDS-SR). We analyzed data from the baseline visit to determine if any of the variables were associated with development of moderate or greater depression (primary endpoint of the study).

Data were stratified by treatment intervention to determine the predictive cutoff values for development of depression in both the escitalopram and placebo groups using QIDS-SR. Continuous variables were analyzed using t-tests and categorical variables were analyzed using Fisher's exact test or Chi-square test. Multivariable receiver operating characteristic (ROC) analyses were used to identify the optimum cutoff points for depression development. All tests were two-sided with p-value set at 0.05 for statistical significance.

Results: The mean baseline QIDS-SR scores of those who developed moderate or greater depression over the study period were significantly higher than the baseline scores of those individuals who did not develop depression over the study period (6.2 vs. 4.2, respectively). No subject who developed depression had a baseline score of less than 2, and the majority of the depressed group had baseline scores of 4 or greater. Independent of randomization to treatment arm, for the overall patient cohort, a baseline score of 2 or higher correctly identified 100% of patients who eventually developed moderate or severe depression during the course of their treatment for head and neck carcinoma. Negative predictive value (NPV) at this level is 100 percent, while the positive predictive value (PPV) is 19 percent.

Development of moderate or severe depression was also associated with type of initial treatment (radiation). In the placebo group, 12 of 31 patients (39%) who received radiotherapy as part of their initial definitive therapy, developed depression during the study period, compared to only 4 out of 34 (12%) who did not receive radiation as part of their initial treatment strategy (p=0.020). In the absence of other confounders, particularly use of the trial drug escitalopram, these findings suggest association between development of depression and use of radiotherapy in these patients.

Conclusions: Baseline symptoms (QIDS-SR) and initial radiation-based therapy may predict depression in patients receiving treatment for head and neck cancer. QIDS-SR baseline scores of 2 or greater served well to identify patients who may benefit the most from pharmacologic prophylaxis of depression.

AHNS063: TREATMENT DELAYS IN PRIMARILY-RESECTED OROPHARYNGEAL SQUAMOUS CELL CARCINOMA: AN ANALYSIS OF THE NATIONAL CANCER DATABASE

Elliot Morse, Shayan Cheraghlou, Benjamin Judson, MD, Saral Mehra, MD, MBA;

Yale University Department of Surgery, Division of Otolaryngology

Background: Previous work has suggested that treatment delays are associated with worse overall survival in head and neck cancer (HNC), however oropharyngeal squamous cell carcinoma (OPSCC) is often human papilloma virus (HPV)-associated and behaves differently than other types of HNC. It is unclear if delays are associated with survival.

Objectives: This study characterized treatment delays in OPSCC patients treated with primary surgery, with or without adjuvant radiation. Specifically, this study identified median durations and factors predictive of treatment delays and associated treatment delays with overall survival (OS).

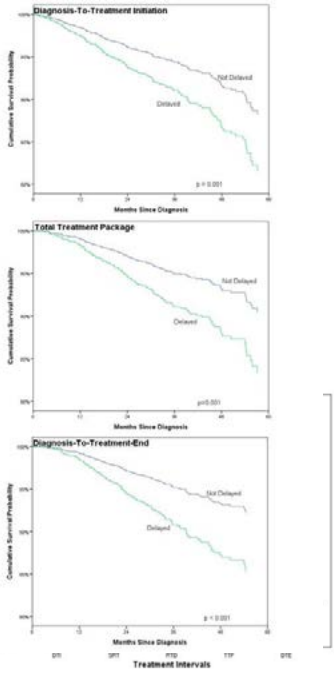
Methods: The National Cancer Database (NCDB) was used to identify a retrospective cohort of OPSCC patients treated 2010-2013 with primary surgery with or without adjuvant treatment. Five treatment intervals were examined: diagnosis-to-treatment initiation (DTI), surgery-to-radiation (SRT), RT duration (RTD), treatment initiation-to-end (total treatment package, TTP), and diagnosis-to-treatment end (DTE). Patients treated with surgery without RT were only included in the analysis examining DTI. For each interval, delayed patients (fourth quartile) were compared to non-delayed patients (first and second quartile). Median durations were identified for each interval. Patient, tumor, and treatment factors predictive of delays were identified via multivariable binary logistic regression. Delays were associated with OS via cox proportional hazards regression, controlling for clinically-relevant patient, tumor, and treatment factors.

Results: 3708 patients were included in the final cohort. Median durations for DTI, SRT, RTD, TTP, and DTE were 14, 42, 47, 90, and 106 days, respectively (Figure 1). Overall HPV incidence was 75%. HPV-positive tumors were associated with decreased delays in DTI, RTD, and DTE (OR=0.69 (0.56-0.85), p<0.001; OR=0.73 (0.58-0.91), p=0.003; OR=0.66 (0.52-0.83), p<0.001, respectively). Overall 5-year OS was 84%. On multivariable analysis, delayed DTI, TTP, and DTE were associated with decreased survival (HR=1.63 (1.22-2.17), p=0.001; HR=1.81 (1.29-2.54), p=0.001; and HR=1.97 (1.39-2.78), p<0.001, respectively) (Table 1; Figure 2). Delayed SRT was associated with survival for HPV-negative, but not positive, patients (HR=2.05 (1.19-3.52), p=0.010 and HR=1.15 (0.74-1.80), p=0.535, respectively). Delays in RTD were not associated with OS.

Conclusions: The median treatment interval durations provided here can be used for national benchmarking. Delays are linked to a variety of patient-, tumor-, and treatment-related factors. Delays in DTI, TTP, and DTE are associated with decreased OS and could be considered quality indicators in OPSCC.

Table 1. Association of Treatment Delays with Survival.

	First and Second Quartiles		Fourth Quartile		HR (95% CI)	p
	Days	5-year OS	Days	5-year OS		
DTI	≤14	87%	≥31	78%	1.63 (1.22 2.17)	0.001
SRT	<42	88%	>54	84%	1.31 (0.93-1.85)	0.116
RTD	≤47	89%	≥51	85%	1.40 (0.99-1.99)	0.061
TTP	≤90	89%	≥104	80%	1.81 (1.29-2.54)	0.001
DTE	≤106	90%	≥128	82%	1.97 (1.39-2.78)	<0.001



AHNS064: DEVELOPMENT OF MULTIMODAL ANALGESIA PATHWAY IN OUTPATIENT THYROID SURGERY IS ASSOCIATED WITH DRAMATIC REDUCTION IN OPIOID USE Aru Panwar, MD, William Lydiatt, MD, Daniel Lydiatt, MD, DDS, Robert Lindau, MD, Andrew Coughlin, MD, Russell Smith, MD, Oleg Militsakh, MD; Estabrook Cancer Center, Nebraska Methodist Hospital, Omaha, Nebraska

Background: Prescription opioids are a substantial contributor to drug related adverse effects and risk for dependence and abuse. Multimodal analgesia has been shown to be useful in reducing narcotic use following orthopedic, gynecologic and colorectal surgery. However, adoption of these analgesia techniques in head and neck surgery has been slow. Recently, we published results of an investigation related to the feasibility of multimodal analgesia protocols in same day thyroid, parathyroid and parotid surgery. However, whether such strategies lead to effective and durable reduction in frequency of narcotic prescriptions, and impact physician prescribing practices, remains unclear.

Objectives: 1) To assess the impact of institutional multimodal (non-narcotic) analgesia protocols on opioid use following outpatient thyroid surgery 2) Identify the impact of such protocols on physician prescribing patterns

Methods: Retrospective review of institutional data identified 627 patients who underwent outpatient thyroid surgery at a tertiary care center during the years 2015 to 2017. During this time, our institution implemented an optional multimodal analgesia protocol, based on preoperative administration of acetaminophen, non-steroidal anti-inflammatory drugs (NSAIDs) and gabapentin, and post-operative use of acetaminophen and ibuprofen for analgesia after thyroid surgery. The frequency of narcotic use and physician prescription patterns related to post-operative analgesia were assessed to study the impact of the available multimodal analgesia pathway on these variables. Additionally, preoperative variables and postoperative outcomes were assessed. The patients receiving narcotic prescriptions during post-operative recovery were identified, and comparisons were made to patients managed with non-narcotic agents. Welch Two Sample t-test was used, and level of significance was assigned at p-value <0.05.

Results: A total of 52 patients were discharged home with opioids. The incidence of opioid prescriptions progressively decreased to 2.6% over the course of the study period, and the trend of decline in narcotic prescriptions issued after thyroid surgery was statistically significant ($p<0.01$). Only one (0.001%) post-operative hematoma was recorded in the study cohort, and 72% of patients could achieve same day discharge following thyroid surgery, while 27% of patients maintained outpatient status but received overnight observation.

Clinical Implications: Development of an institutional multimodal analgesia pathway led to significant decline in use of post-operative opioids for analgesia following thyroid surgery. Use of non-narcotic multimodal agents, incorporating NSAIDs, was safe and did not lead to increased incidence of bleeding. Availability of effective non-narcotic multimodal analgesia pathways can favorably influence physician prescribing practices and avoid unnecessary opioid prescriptions.

AHNS065: IMPACT OF FACILITY HEAD AND NECK CANCER RESECTION VOLUME ON POSITIVE MARGIN

Oral Papers

RATE Cheryl C Nocon, MD[1], Gaurav S Ajmani, MHS[2], Mihir K Bhayani, MD[1]; [1]NorthShore University HealthSystem, [2]University of Chicago Pritzker School of Medicine

Background: The achievement of complete tumor resection and clear tumor-free margins is one of the main principles of oncologic surgery for head and neck squamous cell carcinoma (HNSCC). The negative prognostic impact of a positive margin (PM) across all head and neck subsites has been well-established.

Objective: Our aim was to determine the incidence of PMs in HNSCC across multiple subsites and the factors associated with their occurrence. We hypothesized that margin status is associated with treating facility factors, a potentially modifiable factor in HNSCC treatment that could impact patient outcomes.

Methods: Using the National Cancer Database, we identified patients with clinical stage I-IVb HNSCC, excluding T4b tumors, diagnosed 2010-2014 and treated with definitive surgery. Univariable analysis was conducted using chi-square tests to compare PM rates between demographic, clinical, and facility factors. Multivariable analysis of predictors of PM was performed using a generalized estimating equation (GEE) model adjusting for the same factors, to estimate odds ratios (ORs) per 10-year increase in annual case volume. An interaction between facility volume and facility type was added to assess whether the volume-outcome relationship differed according to type of facility. Finally, a GEE model was used to estimate impact of facility volume in receipt of adjuvant chemoradiation (CRT) among patients with PM.

Results: We identified 28,840 patients with an overall PM rate of 17.6% and average age of 62.4 years (range 40-90+ years). The most common primary site was the oral cavity (53.7%). In univariable analysis, a lower PM rate was associated with higher facility volume (26.3% for the lowest volume quartile; 16.5% for the middle two quartiles; and 10.8% for the highest volume quartile) (P<.001), and treatment at academic centers versus non-academic centers (14.0% vs. 22.7%; P<.001). In multivariable analysis, those treated at lower-volume facilities remained significantly more likely to have PM (OR 0.85; P<.001). The trend of decreasing PM rate with increasing facility volume was observed in both academic and non-academic facilities (OR 0.88 and 0.76, respectively; both P<.001). There was no association between facility volume and patient likelihood of receiving adjuvant CRT in the setting of PM (OR 0.96; P=.071).

Conclusions: Higher volume facilities have lower rates of positive margins in the surgical treatment of HNSCC in both the academic and non-academic settings. Facility volume for head and neck oncologic surgeries may be considered a benchmark for quality of care. Further evaluation of hospital and surgeon factors that are associated with positive margins is warranted.

Poster Listing

Immunotherapy and Other Adjuvant Treatments

C001: OVEREXPRESSION OF HOMOLOGOUS REPAIR PROTEINS IN HUMAN PAPILLOMAVIRUS POSITIVE HEAD AND NECK SQUAMOUS CELL CARCINOMA BY IMMUNOHISTOCHEMISTRY ANALYSIS. A POTENTIAL TARGET FOR MOLECULAR THERAPIES. Andrew J Holcomb, MD[1], Sufi Thomas, PhD[1], Yelizaveta Shnayder, MD[1], Rashna Madan, MD[1], Ossama Tawfik, MD, PhD[1], Nicholas Wallace, PhD[2]; [1]University of Kansas Medical Center, [2]Kansas State University

C002: DEFINED GENETIC ALTERATIONS AS A BIOMARKER PREDICTING PROGNOSIS IN HPV-ASSOCIATED HEAD AND NECK CANCER. Andrew B Sewell, MD, Michael Hajek, MD, Cassie Pan, BS, Tejas Sather, BS, Wendell G Yarbrough, MD, MMHC, Natalia Issaeva, PhD; Yale University

C003: PLASMACYTOID DENDRITIC CELLS ARE DISTINCTLY IMMUNOSTIMULATORY IN HPV-POSITIVE HNSCC Kate Poropatich, Sandeep Samant, Bin Zhang; Northwestern University

C004: HIGH THROUGHPUT DRUG TESTING IDENTIFIES AGENTS WITH SELECTIVE ACTIVITY IN HPV-POSITIVE AND HPV-NEGATIVE CELL LINES Farhad Ghasemi, BSc[1], Morgan D Black, BSc, MSc[1], Alessandro Datti, PhD[2], John W Barrett, PhD[1], John Yoo, MD[1], Kevin Fung, MD[1], S D MacNeil, MD, MSc[1], Anthony C Nichols, MD[1]; [1]Western University, [2]Lunenfeld Tanenbaum Research Institute

Oral Cancer

C005: LEVEL OF LYMPH NODE METASTASIS ADDS PROGNOSTIC VALUE TO AMERICAN JOINT COMMITTEE ON CANCER NODAL STAGING FOR SQUAMOUS CELL CARCINOMA OF THE FLOOR OF MOUTH Alexander N Goel, BA, Suraj A Dhanjani, Albert Y Han, MD, Karam W Badran, MD, Maie A St. John, MD, PhD; Department of Head and Neck Surgery, David Geffen School of Medicine at University of California, Los Angeles, Los Angeles, California, USA

C006: INHIBITION OF TRKB RECEPTOR ON THE MIGRATION OF HUMAN SCHWANN CELL AND ORAL TONGUE SQUAMOUS CELL CARCINOMA IN VITRO Liliana Ein, MD[1], Olena Bracho, BS[1], Paula Monje, PhD[1], Cristina Fernandez, PhD[2], Giovana Thomas, MD[1], Donald Weed, MD[1], Zoukaa Sargi, MD, MPH[1], Christine Dinh, MD[1]; [1]University of Miami Miller School of Medicine, [2]University of Central Florida Burnett School of Biomedical Sciences

C007: NODAL YIELD AND LOG ODDS RATIO ARE ASSOCIATED WITH SURVIVAL OUTCOMES IN EARLY STAGE CLINICALLY NODE-NEGATIVE ORAL CAVITY SQUAMOUS CELL CARCINOMA Anuraag S Parikh, MD, Ayaz Khawaja, MD, Besher Assi, Joseph Zenga, MD, Mark A Varvares, MD; Massachusetts Eye and Ear Infirmary

C008: FACTORS PREDICTIVE OF ELECTIVE NECK DISSECTION (END) IN PATIENTS WITH CN0 HARD PALATE AND UPPER GINGIVAL SCC AND THE IMPACT OF END ON SURVIVAL A Obayemi, MD[1], M Cohen, MD[1], R Rahmati, MD[2], J Migliacci[1], J C Cracchiolo[1], B Roman[1]; [1]Memorial Sloan Kettering Cancer Center, [2]Columbia University Medical Center

C009: VALIDATION OF AN UPDATED GRAPHIC EDUCATION TOOL IN AN ORAL RINSE POINT-OF-CARE ASSAY TO AID IN THE DIAGNOSIS OF HEAD AND NECK SQUAMOUS CELL CARCINOMA (HNSCC) Michael J Donovan, Dr[1], Greg Ginn[2], Elizabeth Franzmann, MD[3]; [1]Icahn School of Medicine at Mt. Sinai, [2]Vigilant Biosciences, [3]University of Miami

C010: A POPULATION-BASED ANALYSIS OF A RARE NASOPHARYNGEAL MALIGNANCY: 1677 CASES OF LYMPHOEPITHELIAL CARCINOMA Neel R Sangal, BA, Sarangdev Vaidya, BA, Monica C Azmy, BS, Jean Anderson Eloy, MD, FACS, Soly Baredes, MD, FACS, Richard C Park, MD, FACS; New Jersey Medical School

C011: INCREASED LYMPH NODE YIELD POSITIVELY IMPACTS OVERALL SURVIVAL IN NON-HPV BUT NEGATIVELY IMPACTS HPV-RELATED OROPHARYNGEAL CANCER Chelsea S Hamill, MD[1], Kevin J Sykes, PhD, MPH[2], Sue M Lai, MS, MBA, PhD[2], Thomas O'Toole, MD[3]; [1]University Hospitals/ Cleveland Medical Center, [2]University of Kansas Medical Center, [3]Spectrum Health/Michigan State University

Poster Listing

C012: PATIENT REPORTED OUTCOMES AND OBJECTIVE ANALYSIS OF FUNCTION FOLLOWING GLOSSECTOMY WITH RECONSTRUCTION Suhael R Momin, MD[1], Nirali Shah, BS[2], Diana Cook, MA, CCCSLP[1], Kathryn Genoa, MS, CCCSLP[1], Tamer A Ghanem, MD, PhD[1], Steven S Chang, MD[1], Amy M Williams, PhD[1]; [1]Henry Ford Health System, [2]Wayne State University School of Medicine

C013: THE HUMAN PAPILLOMA VIRUS: A VARIANCE IN ITS PROGNOSTIC VALUE AT DIFFERENT HEAD AND NECK SUB-SITES Hong Li, BA[1], Sina J Torabi, BA[1], Saral Mehra, MD, MBA, FACS[2], Heather A Osborn, MD, FRCS[2], Wendell G Yarbrough, MD, MMHC, FACS[2], Benjamin L Judson, MD, MGA[2]; [1]Yale School of Medicine, [2]Yale New Haven Hospital

C014: OUTCOMES OF TRANSORAL SURGERY IN THE MANAGEMENT OF HPV-NEGATIVE OROPHARYNGEAL SQUAMOUS CELL CARCINOMA Rahul K Sharma, BS, Michael Veshkini, BS, Dorina Kallogjeri, MD, MPH, Ryan S Jackson, MD; Department of Otolaryngology Head and Neck Surgery, Washington University, St. Louis, Missouri, U.S.A.

C015: NECK RECURRENCE RATES IN PATIENTS WITH EARLY ORAL TONGUE CANCER WHO FOREGO ELECTIVE NECK DISSECTION Justin Shinn, MD[1], C. Burton Wood, MD[1], Juan M Colazo, BS[2], Kyle Mannion, MD[1]; [1]Vanderbilt University Medical Center, [2]Vanderbilt University School of Medicine

C016: HEAD AND NECK SQUAMOUS CELL CARCINOMA IN A YOUNG PATIENT COHORT William M Dougherty, MD[1], Michael I Dougherty, BA[1], Joshua Kain, MD[2], Brian Hughley, MD[2], Mark Jameson, MD, PhD[1]; [1]University of Virginia, [2]University of Alabama Birmingham

C017: OSTEORADIONECROSIS IN PATIENTS UNDERGOING ORAL CANCER RESECTION WITH FIBULAR FREE FLAP RECONSTRUCTION FOLLOWED BY RADIATION THERAPY Stewart H Bernard, MD[1], Timothy J Stoddard, BS[2], Peter T Dziegielewski, MD, FRCSC[1], Brian J Boyce, MD[1], Raja Sawhney, MD[1]; [1]University of Florida, College of Medicine, Department of Otolaryngology, [2]University of Florida, College of Medicine

C018: THE CHANGING PROGNOSTIC AND DEMOGRAPHIC CHARACTERISTICS OF ORAL CAVITY CANCER: OUTCOMES FROM 1973-2014. Shayan Cheraghlou, BA, Amy Schettino, BA, Cheryl K Zogg, MSPH, MHS, Michael D Otremba, MD, Saral Mehra, MD, MBA, Wendell G Yarbrough, MD, Benjamin L Judson, MD; Yale Medical School

C019: RADIOLOGIC-PATHOLOGIC CORRELATION OF EXTRANODAL EXTENSION IN PATIENTS WITH SQUAMOUS CELL CARCINOMA OF THE ORAL CAVITY: IMPLICATIONS FOR THE 8TH EDITION TNM Christopher W Noel[1], Abdullah Almulla, MD[2], Lin Lu[3], Wei Xu, PhD[3], Andrew Hope, MD, FRCPC[4], David Goldstein, MD, MSc, FRCSC[1], Jonathan Irish, MD, MSc, FRCSC[1], Patrick Gullane, MD, FRCSC[1], Douglas Chepeha, MD, FRCSC[1], Bayardo Perez-Ordonez, MD, FRCPC[5], Ilan Weinreb, MD, FRCPC[5], Brian O'Sullivan, MB, Bch, BAO, FRCPC[4], Eugene Yu, MD, FRCPC[2], Shao Hui Huang, MD, MSc, MRTT[4]; [1]Department of Otolaryngology - Head and Neck Surgery/Surgical Oncology, University of Toronto, Toronto, Ontario, Canada, [2]Department of Neuroradiology and Head and Neck Imaging, Princess Margaret Cancer Centre–University Health Network, University of Toronto, Toronto, Ontario, Canada, [3]Dalla Lana School of Public Health, University of Toronto, Toronto, Ontario, Canada, [4]Department of Radiation Oncology, Princess Margaret Cancer Centre–University Health Network, University of Toronto, Toronto, Ontario, Canada, [5]Department of Pathology, Princess Margaret Cancer Centre–University Health Network, University of Toronto, Toronto, Ontario, Canada

C020: ADJUVANT NEUTRON RADIOTHERAPY FOR HIGH GRADE SALIVARY CARCINOMAS: A HOSPITAL-BASED STUDY Harrison Cash, MD, MS, Richard Harbison, MD, Neal Futran, DMD, MD, Upendra Parvathaneni, MD, George Laramore, MD, PhD, Jay Liao, MD, Eduardo Mendez, MD, MS, Cristina Rodriguez, MD, Jeffrey J Houlton, MD; University of Washington

Poster Listing

C021: PROTEOMIC ANALYSIS OF ORAL SQUAMOUS CELL CARCINOMA AFFECTING YOUNG PATIENTS REVEALS POTENTIAL THERAPEUTIC TARGETS FOR HPV-RELATED TUMORS: PRELIMINARY RESULTS Marisol Miranda Galvis[1], Carolina Carneiro Soares[1], Carolina Moretto Carnielli[2], Fabio Albuquerque Marchi[3], Alan Santos-Silva[1], Adriana Paes Leme[2], Estela Kaminagakura[4], Clóvis A. Lópes Pinto[5], Luiz P Kowalski[6]; [1]Oral Diagnosis Department, Piracicaba Dental School, University of Campinas (UNICAMP), Piracicaba, Brazil, [2]Brazilian Biosciences National Laboratory (LNBio), Brazilian Center for Research in Energy and Materials (CNPEM), Campinas, São Paulo, Brazil., [3]International Research Center (CIPE), A.C.Camargo Cancer Center, São Paulo, Brazil., [4]Departament of Bioscience and Oral Diagnosis, Science and Technology Institute, Univ Estadual Paulista (UNESP), São José dos Campos, Brazil., [5]Department of Anatomic Pathology, A.C.Camargo Cancer Center, São Paulo, Brazil., [6]Department of Head and Neck Surgery and Otorhinolaryngology, A.C.Camargo Cancer Center, São Paulo, Brazil.

C022: NDRG CAN PREDICT METASTASIS IN ORAL SQUAMOUS CELL CARCINOMA Gregorie Morand[1], Carolina Carneiro[2], Mariana Maschietto[3], Gerhard Huber[2], Alex M Mlynarek[4], Michael Hier[4], Moulay A. Alaoui-Jamali[4], Luiz Paulo Kowalski[5], Sabrina Daniela Silva Wurzba[4]; [1]University Hospital Zurich, Zurich, [2]Faculty of Dentistry - Unicamp, Sao Paulo, [3]Brazilian Center for Research in Energy and Materials (CNPEM), [4]Jewish General Hospital, McGill University, Montreal, [5]AC Camargo Cancer Center, Sao Paulo

C023: CHANGES IN AJCC ORAL CAVITY STAGING: IMPACT OF EXTRINSIC TONGUE MUSCULATURE INVASION Emily J Marchiano, MD, Joshua Smith, BA, Andrew Birkeland, MD, Keith Casper, MD, Andrew Shuman, MD, Chad Brenner, PhD, Matthew Spector, MD, Steven Chinn, MD, MPH; University of Michigan

C025: CLINICAL AND PATHOLOGIC TUMOR SIZE ARE IMPERFECT PREDICTORS OF DEPTH OF INVASION AND NOT PREDICTIVE OF OCCULT NODAL DISEASE IN EARLY ORAL CAVITY SQUAMOUS CELL CARCINOMA Ayaz M Khawaja, MD, Anuraag Parikh, MD, Besher Assi, Joseph Zenga, MD, Mark Varvares, MD; Massachusetts Eye and Ear Infirmary, Boston, MA

C026: INVOLVEMENT OF SUBMANDIBULAR GLAND IN ORAL CAVITY SQUAMOUS CELL CARCINOMA; IS IT NECESSARY TO REMOVE THE SUBMANDIBULAR GLAND? Rahim N Dhanani[1], Hamdan A Pasha[1], Shayan K Ghaloo[1], Kulsoom Ghias[2], Mumtaz J Khan[1]; [1]Section of ENT/Head and neck surgery, Department of Surgery, Aga Khan University Hospital, Karachi, Pakistan, [2]Department of Biological & Biomedical Sciences, Aga Khan University Hospital, Karachi, Pakistan

C027: THE ROLE OF BRACHYTHERAPY FOR MARGIN CONTROL IN ORAL TONGUE SQUAMOUS CELL CARCINOMA Ilia Ianovski, BHB, MBChB, FRACS, Michael P Hier, MDCM, FRCSC, Alex M Mlynarek, MD, MSc, FRCSC, Martin J Black, MD, FRCSC, Boris Bahoric, MD, FRCPC, Khalil Sultanem, MD, FRCP; McGill University

C028: IDENTIFICATION OF A NOVEL FGF-RECEPTOR 1 SPLICE VARIANT IN ADENOID CYSTIC CARCINOMA OF THE SALIVARY GLAND Joseph O Humtsoe, PhD[1], Hyun-Su Kim[1], Brandon Leonard, PhD[1], Luigi Marchionni, MD, PhD[2], Elana J Fertig, PhD[2], Patrick Ha, MD[1]; [1]Department of Otolaryngology, University of California San Francisco, San Francisco, CA, [2]Johns Hopkins University Department of Biostatistics and Bioinformatics, Baltimore, MD

C029: INTRAOPERATIVE IDENTIFICATION OF METASTATIC LYMPH NODES IN PATIENTS WITH HEAD AND NECK CANCER USING PANITUMUMAB-IRDYE800, A FLUORESCENTLY LABELED ANTI-EPIDERMAL GROWTH FACTOR ANTIBODY Nynke S van den Berg, Rebecca W Gao, Tarn Teraphonphom, Steven Hong, Brock Martin, Nicholas Oberhelman, Vasu Divi, Michael J Kaplan, Christina S Kong, Dimitrios Colevas, Eben L Rosenthal; Stanford University School of Medicine

C030: WEEKLY DOCETAXEL, CISPLATIN, AND CETUXIMAB (TPC) IN PALLIATIVE TREATMENT OF PATIENTS WITH SQUAMOUS CELL CARCINOMA OF THE HEAD AND NECK (SCCHN) Vanessa Trieu[1], Harlan Pinto, Associate Professor[2], Jonathan Riess, Assistant Professor[3], Ruth Lira[4], Richard Luciano, fnpc[4], Jessie Coty, fnpc[4], Derek Boothroyd, Sr Res Engineer[2], A. Dimitrios Colevas, Professor[2]; [1]University of Vermont, [2]Stanford University, [3]UC Davis, [4]Stanford Cancer Institute

Poster Listing

C031: HUMAN PAPILLOMA VIRUS ONCOPROTEINS E6 AND E7 NEGATIVELY REGULATE INVADOPODIA ACTIVITY BUT PROMOTE MIGRATION IN HEAD AND NECK SQUAMOUS CELL CARCINOMA Charissa N Kahue, MD, Rachel B Jerrell, Aron Parekh, PhD; Vanderbilt University Medical Center Department of Otolaryngology

C032: MALIGNANT OXYPHILIC ADENOCARCINOMA OF THE SALIVARY GLANDS: A POPULATION-BASED ANALYSIS. Neel Sangal, BA, Roman Povolotskiy, BA, Yung-Jae Lee, BA, Jean Anderson Eloy, MD, FACS, Soly Baredes, MD, FACS, Richard C Park, MD, FACS; New Jersey Medical School

C034: INVASIVE FRONT OR TUMOR CORE: CANCER STEM CELL LOCATION AND CORRELATIONS WITH CELLULAR BEHAVIOR AND PATIENT OUTCOME Farshad N Chowdhury, MD[1], Stephen B Keysar, PhD[2], Tugy Chimed, MS[2], Julie Reisinger, CVT[2], Hilary Somerset, MD[3], John I Song, MD[1], Antonio Jimeno, MD, PhD[4]; [1]Department of Otolaryngology, University of Colorado Anschutz Medical Campus, [2]Division of Medical Oncology, Department of Medicine, University of Colorado Anschutz Medical Campus, [3]Department of Pathology, University of Colorado Anschutz Medical Campus, [4]Division of Medical Oncology, Department of Medicine and Department of Otolaryngology, University of Colorado Anschutz Medical Campus

C035: PRESURGICAL INDUCTION CHEMOTHERAPY FOR SQUAMOUS CELL CARCINOMA OF THE TONSIL M S Burke, MD, J T Loree, BA, S R Popat, MD, D J Ford, PA, A Szymanowski, MD, M S Ahmed, MD, J Kim, MD, M Duff, MD, D K Shah, MD, T R Loree, MD; Erie County Medical Center

C036: PROGNOSTIC IMPACT OF PERINEURAL INVASION IN EARLY STAGE ORAL TONGUE SQUAMOUS CELL CARCINOMA: RESULTS FROM A PROSPECTIVE RANDOMIZED TRIAL Xi Yang, Chenping Zhang, Prof; Shanghai Ninth People's Hospital

C037: POPULATION-BASED ANALYSIS OF SOCIOECONOMIC FACTORS ASSOCIATED WITH ADVANCED STAGE PRESENTATION IN ORAL SQUAMOUS CELL CARCINOMA Andrew J Holcomb[1], Jason A Brant, MD[2], Jason G Newman[2], Kevin Sykes, PhD[1], Kiran Kakarala, MD[1], Yelizaveta Shnayder, MD[1], Terance Tsue, MD[1], Ahmed Ibrahim, MD[1], Andres M Bur, MD[1]; [1]University of Kansas Medical Center, [2]University of Pennsylvania

C039: CLINICAL AND PATHOLOGIC FEATURES OF PATIENTS WITH ORAL CAVITY SQUAMOUS CELL CARCINOMA (OCSCC) WHO UNDERPERFORM AND OUTPERFORM PREDICTED OUTCOMES Joshua D Smith, BA, Emily Marchiano, MD, Andrew C Birkeland, MD, Taylor Vandenberg, Carol R Bradford, MD, Mark E Prince, Keith A Casper, MD, Andrew G Shuman, MD, Matthew E Spector, Steven B Chinn, MD; University of Michigan

C040: SIMPLE CLINICAL VOLUNTARY COUGH AIRFLOW MEASURES PREDICT ASPIRATION STATUS PER VIDEOFLUOROSCOPY AFTER RADIOTHERAPY FOR HEAD AND NECK CARCINOMA Louisa Bibiana Suting, MA[1], Jan S Lewin, PhD[1], Carla L Warneke, MS[1], Martha Portwood Barrow, MPH[1], Emily K Plowman, PhD[2], George A Eapen, MD[1], Stephen Y Lai, MD, PhD[1], Denise A Barringer, MS[1], Katherine A Hutcheson, PhD[1]; [1]The University of Texas MD Anderson Cancer Center, [2]University of Florida

Pharynx / Larynx Cancer

C042: DIFFERENT CLINICOPATHOLOGICAL PROFILES OF HPV-POSITIVE VERSUS HPV-NEGATIVE OROPHARYNGEAL SQUAMOUS CELL CARCINOMAS, WITH THE COMPLICATING FACTOR OF SMOKING: THE USC EXPERIENCE Changxing Liu, MD, PhD, Uttam K Sinha, MD, Niels Kokot, MD; USC Tina and Rick Caruso Department of Otolaryngology-Head and Neck Surgery, Keck Medicine of USC, University of Southern California

C043: IMPACT OF SMOKING HISTORY ON LOCOREGIONAL RECURRENCE-FREE, DISTANT METASTASIS-FREE SURVIVAL AND OVERALL SURVIVAL IN HUMAN PAPILLOMAVIRUS (HPV)-ASSOCIATED OROPHARYNGEAL CANCER (OPC) TREATED WITH DEFINITIVE (CHEMO)RADIOTHERAPY Howard Liu[1], Anne Bernard[2], Elizabeth Brown[1], Laura Tam[1], Matthew Foote[1], Rob Milne[2], Margaret McGrath[1], Reza Rahbari[1], Bena Cartmill[1], Ben Panizza[1], Sandro Porceddu[1]; [1]Princess Alexandra Hospital, [2]University of Queensland

C044: QUALITY OF LIFE AFTER SUPRACRICOID PARTIAL LARYNGECTOMY Marianne Y Nakai, MD, Marcelo B Menezes, PhD, Julia V Boas, Lucas Porto M Dias, Lucas R Tenorio, MD, Leandro Augusto B Silva, MD, Antonio J Goncalves, PhD; Irmandade da Santa Casa de Misericórdia de São Paulo

Poster Listing

C045: HPV STATUS IS NOT ASSOCIATED WITH BETTER SURVIVAL RATES IN LOW-PREVALENCE HPV INFECTION GEOGRAFIC REGIONS Rafael De Cicco, MD[1], Rosilene M Menezes, MD, PhD[2], Ulisses R Nicolau, MD, PhD[1], Clovis A Pinto, Md, PhD[1], Luiza L Villa, PhD[3], Luiz P Kowalski, MD, PhD[1]; [1]AC Camargo Cancer Center, [2]Hospital do Servidor Publico Municipal, [3]Instituto do Cancer do Estado de São Paulo

C046: PREOPERATIVE PREDICTORS OF DIFFICULT HYPOPHARYNGEAL EXPOSURE DURING TRANSORAL SURGERY Kazunori Fujiwara, MD, PhD, Takahiro Fukuhara, MD, PhD, Satoshi Koyama, MD, PhD, Ryohei Donishi, MD, Hiromi Takeuchi, MD, PhD; Tottori University

C047: FIRST LINE SURGICAL TREATMENT OF OROPHARYNGEAL CARCINOMA WITH TRANS-ORAL ROBOTIC SURGERY (TORS): REVIEW OF A SINGLE INSTITUTIONS OUTCOMES Julia A Crawford, MD, Brett Leavers, Dr, Richard M Gallagher; St Vincent's Hospital Sydney

C048: INITIALLY-POSITIVE MARGINS PREDICT WORSE SURVIVAL IN PRIMARY, BUT NOT SALVAGE, TOTAL LARYNGECTOMY Patrick Tassone, MD, Corey Savard, Michael Topf, MD, William Keane, MD, Adam Luginbuhl, MD, Joseph Curry, MD, David Cognetti, MD; Thomas Jefferson University

C049: THE EXTENT OF NECK DISSECTION AMONG PATIENTS WHO RECEIVE ADJUVANT RADIOTHERAPY FOR HEAD AND NECK SQUAMOUS CELL CARCINOMA AND ITS EFFECT ON DISEASE- SPECIFIC AND OVERALL SURVIVAL. Usama Aboelkheir, MD, Austin Iovoli, BS, Alexis Platek, BS, Mary Platek, PhD, Anurag Singh, MD, Vishal Gupta, MD, David Cohan, MD, Wesley Hicks, MD, Hassan Arshad, MD; Roswell Park Cancer Institute

C050: PREDICTORS OF SWALLOW FUNCTION AFTER TRANSORAL SURGERY FOR LOCALLY ADVANCED OROPHARYNGEAL CANCER Jennifer Gross, MD[1], Melanie Townsend, MD[1], Joseph Zenga, MD[2], Ryan Jackson, MD[1], Bruce Haughey, MD, FACS[3], Jason Rich, MD[1]; [1]Washington University Department of Otolaryngology, [2]Massachusetts Eye and Ear Infirmary, [3]Florida ENT Surgical Specialists

C051: COMPARING MUTATIONAL PROFILES OF RESPONDERS AND NON-RESPONDERS CELL-FREE CIRCULATING TUMOR DNA IN OROPHARYNGEAL SQUAMOUS CELL CARCINOMA PATIENTS Mickie J Hamiter, MD[1], Adam H Greer, PhD[2], Rhett Orgeron[1], Alok R Khandelwal, PhD[1], Xiaohui Ma[1], Tara Moore-Medlin[1], Hong Yin, MDPhD[2], Glenn Mills, MD[2], Cherie-Ann O Nathan, MD[1]; [1]LSU Health Shreveport, [2]Feist Weiller Cancer Center

C052: LARYNGEAL CANCER TREATMENT AND OUTCOMES IN THE UNDER AND UNINSURED: A 10 YEAR REVIEW Tanner M Fullmer, MD, David M Wilde, Susan A Eicher, MD, Nadia G Mohyuddin, MD, Andrew G Sikora, MD, PhD, Vlad C Sandulache, MD, PhD; Baylor College of Medicine Bobby R. Alford Department of Otolaryngology

C053: A GERMLINE VARIANT IN JAK3 AS A POTENTIAL BIOMARKER OF LARYNGEAL CANCER RISK IN AFRICAN AMERICANS Jean-Nicolas Gallant, PhD[1], Aliya Gifford, PhD[1], Janey Wang, MS[1], Rafael Guerrero, PhD[2], Young Kim, MD, PhD[1]; [1]Vanderbilt University, [2]University of Puerto Rico

C054: CT TEXTURE ANALYSIS WITH MACHINE LEARNING FOR THE PREDICTION OF DISEASE SITE ASSOCIATED FEATURES AND NODAL STATUS FOR HEAD AND NECK SQUAMOUS CELL CARCINOMA Xiaoyang Liu[1], Eugene Yu[1], Behzad Forghani[2], Almudena Perez-Lara[2], Shao Hui Huang[1], John Waldron[1], Brian O'Sullivan[1], Eric Bartlett[1], Mark Levental[2], Thomas Ong[2], Maryam Bayat[2], Reza Forghani[2]; [1]University of Toronto, [2]McGill University

C055: OPTIMIZED PRIMER/PROBE SETS FOR HPV-16 DETECTION IN HEAD AND NECK CARCINOMA Yuki Saito, MD, PhD[1], Alexander V Favorov, PhD[2], Shuling Ren, MD[1], Akihiro Sakai, MD, PhD[1], Takahito Fukusumi, MD, PhD[1], Mizuo Ando, MD, PhD[3], Chao Liu, MD[1], Joseph A Califano, MD[1]; [1]Moors Cancer Center, University of California San Diego, [2]Division of Oncology Biostatistics and Bioinformatics, Sidney Kimmel Comprehensive Cancer Center, Department of Oncology, Johns Hopkins University, [3]Otolaryngology-Head and Neck Surgery, University of Tokyo

Poster Listing

C056: PHARYNGEAL CONSTRICTOR BOTULINUM TOXIN INJECTION THERAPY FOR APHONIA AND DYSPHAGIA FOLLOWING TOTAL LARYNGECTOMY Shannon D Fayson, Laura Matrka, MD, Brad W deSilva, MD; The Ohio State University

C057: ONCOLOGIC OUTCOMES OF UNKNOWN PRIMARY SQUAMOUS CELL CARCINOMA OF THE HEAD AND NECK FOLLOWING TORS-BASED MANAGEMENT John R Sims, MD, Kathryn M Van Abel, MD, Katharine A Price, MD, Daniel J Ma, MD, Daniel L Price, MD, Eric J Moore, MD; Mayo Clinic

C058: ASSESSMENT OF CB1 AND CB2 RECEPTORS IN HEAD AND NECK SQUAMOUS CELL CARCINOMA Kelly E Daniels, BS, Adam J Luginbuhl, MD, Andrew P South, PhD; Thomas Jefferson University

C059: ELECTIVE PARATRACHEAL NODE AT THE TIME OF SALVAGE LARYNGECTOMY IMPROVES LOCOREGIONAL DISEASE FREE SURVIVAL AND DISEASE SPECIFIC SURVIVAL FOR RECURRENT ADVANCED GLOTTIC SQUAMOUS CELL CARCINOMA Andrew C Birkeland, MD, Andrew J Rosko, MD, Catherine T Haring, MD, Josh D Smith, J Chad Brenner, PhD, Andrew G Shuman, MD, Steven B Chinn, MD, Chaz L Stucken, MD, Kelly M Malloy, MD, Jeffrey S Moyer, MD, Keith A Casper, MD, Mark E Prince, MD, Carol R Bradford, MD, Gregory T Wolf, MD, Douglas B Chepeha, MD, Matthew E Spector, MD; University of Michigan

C060: IMPACT OF NODAL YIELD AT A SINGLE INSTITUTION IN PATIENTS UNDERGOING NECK DISSECTION AND TOTAL LARYNGECTOMY Michael C Topf, MD, Linda C Magana, PhD, James Metkus, MD, James Hamilton, MD, Larissa Sweeny, MD, William M Keane, MD, Richard A Goldman, MD, Adam Luginbuhl, MD, Joseph M Curry, MD, David M Cognetti, MD; Thomas Jefferson University Hospital

C061: SWALLOWING AND SPEECH OUTCOMES AFTER TRANSORAL ROBOTIC SURGERY +/- ADJUVANT THERAPY FOR HPV(+) OROPHARYNGEAL SQUAMOUS CELL CARCINOMA K M Van Abel, MD[1], M H Quick[1], D E Graner, CCCSLP[2], C M Lohse, MS[3], D J Ma, MD[4], K P Price, MD[5], D L Price, MD[1], E J Moore, MD[1]; [1]Department of Otorhinolaryngology - Head and Neck Surgery, Mayo Clinic, Rochester, Minnesota, USA, [2]Division of Speech Pathology, Mayo Clinic, Rochester, Minnesota, USA, [3]Division of Biomedical Statistics and Informatics, Mayo Clinic, Rochester, Minnesota, USA, [4]Department of Radiation Oncology, Mayo Clinic, Rochester, Minnesota, USA, [5]Department of Medical Oncology, Mayo Clinic, Rochester, Minnesota, USA

C062: MINOR SALIVARY GLAND CARCINOMA OF THE LARYNX: A POPULATION-BASED ANALYSIS OF 311 CASES Alexander N Goel, BA, Claire Liu, BS, Iram Shafqat, BS, Jennifer L Long, MD, PhD; Department of Head and Neck Surgery, David Geffen School of Medicine at University of California, Los Angeles, Los Angeles, California, USA

C063: TREATMENT OF ADVANCED NASOPHARYNGEAL CANCER BY USING LOW-DOSE OR HIGH-DOSE CONCURRENT CHEMORADIOTHERAPY WITH INTENSITY-MODULATED RADIOTHERAPY: A PROPENSITY SCORE-MATCHED, NATIONWIDE, POPULATION-BASED, COHORT STUDY Szu-Yuan Wu; Department of Radiation Oncology, Taipei Medical University - Wan Fang Medical Center

Poster Listing

C064: DEPRESSIVE SYMPTOMS, DIURNAL SALIVARY CORTISOL, AND THE ROLE OF INFLAMMATION IN TREATMENT OUTCOMES IN HEAD AND NECK CANCER Cynthia Duck, JD[1], Courtney Brinkman[2], Christina Albert, BA[3], Whitney Rebholz, PhD[3], Paula M Chilton, PhD[4], Thomas C Mithcell, PhD[5], Sandra E Sephton, PhD[2], Jeffrey Bumpous, MD[3], Elizabeth Cash, PhD[6]; [1]University of Louisville School of Medicine, [2]University of Louisville Dept. of Psychological and Brain Sciences, [3]University of Louisville Department of Otolaryngology-Head and Neck Surgery & Communicative Disorders, [4]Christine M. Kleinert Institute for Hand & Microsurgery, [5]Institute for Cellular Therapeutics; Department of Microbiology & Immunology, [6]University of Louisville Department of Otolaryngology-Head and Neck Surgery & Communicative Disorders; Department of Psychological & Brain Sciences

C065: AJCC 8TH EDITION HPV POSITIVE OROPHARYNGEAL CANCER STAGING SYSTEM: HOW OFTEN WILL THE CLINICAL AND PATHOLOGICAL STAGING SYSTEMS DISAGREE? Scott R Hall, MD, Gregory S Neel, MD, Brent A Chang, MD, Brittany E Howard, MD, Thomas H Nagel, MD, David G Lott, MD, Richard E Hayden, MD, Michael L Hinni, MD; Mayo Clinic Arizona Department of Otolaryngology - Head and Neck Surgery

C066: ANALYSIS OF SURGICAL THERAPY VERSUS CHEMORADIATION IN ADVANCED HYPOPHARYNGEAL CANCER Viran J Ranasinghe, Jason G Newman, MD, Jason A Brant, MD; University of Pennsylvania

C067: LARYNGEAL SUBSITE PREDICTS DEGREE OF DYSPHASIA AND ASPIRATION AFTER CONCURRENT CHEMORADIATION THERAPY. William A Stokes, MD, James Ingles, Sijn Wen, PhD, Rusha Patel, MD; West Virginia University

C068: IMPACT OF FREE FLAP RECONSTRUCTION AND NECK DISSECTION IN TOTAL LARYNGECTOMY: ANALYSIS OF THE VETERANS AFFAIRS SURGICAL QUALITY IMPROVEMENT PROGRAM (VASQIP) DATABASE Jasmina Pailet, Alia Mowery, Daniel R Clayburgh, MD, PhD; Oregon Health and Science University

C069: IMPLEMENTATION OF SUBMANDIBULAR GLAND TRANSFER: A MULTI-INSTITUTIONAL STUDY OF FEASIBILITY AND TIME TO TREATMENT. John Pang, MD[1], Harry H Ching, MD[2], Ryan H Sobel, MD[3], Ryan K Orosco[1], Joseph A Califano III, MD[1], Robert C Wang, MD[2], Charles S Coffey, MD[1]; [1]University of California - San Diego, Head and Neck Surgery, [2]University of Nevada Las Vegas School of Medicine, [3]Johns Hopkins Head & Neck Surgery at Greater Baltimore Medical Center

C070: MUCOCUTANEOUS FISTULA AND TIMING OF POSTOPERATIVE ORAL FEEDING AFTER HEAD AND NECK FREE FLAP RECONSTRUCTION Anirudh Saraswathula, BS[1], Brian Nuyen, MD[1], Ryan Orosco, MD[2], Vasu Divi, MD[1], Eben Rosenthal, MD[1], Heather Starmer, MA, CCCSLP, BCSS[1]; [1]Department of Otolaryngology-Head and Neck Surgery, Stanford University School of Medicine, [2]Division of Otolaryngology-Head and Neck Surgery, Department of Surgery, University of California, San Diego School of Medicine

C071: TRENDS IN TONSIL CANCER INCIDENCE RATES IN THE US: 2000-2014 Elizabeth Handorf, Miriam Lango, MD; Fox Chase Cancer Center

Quality of Care and Clinical Pathways

C072: NATIONAL VARIATIONS IN COST AND SURGICAL COMPLICATION RATES IN SALIVARY GLAND CARCINOMA Rance J Fujiwara, BS, Elliot Morse, BS, Saral Mehra, BS; Yale University School of Medicine

C073: ASSOCIATION BETWEEN ORAL HUMAN PAPILLOMAVIRUS AND HISTORY OF CANCER AMONG US ADULTS IN THE NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY (2009-2014) Janet S Choi, MD, MPH, Alison J Yu, BA, Caitlin Bertelsen, MD, Niels C Kokot, Uttam K Sinha; University of Southern California

C074: IMPACT OF NECK DISSECTION ON SURVIVAL IN ADENOID CYSTIC CARCINOMA Zhen J Qian, MD, Michelle M Chen, MD, Vasu Divi, MD, Uchechukwu C Megwalu; Stanford University

C075: FRAGMENTED CARE IS ASSOCIATED WITH MORTALITY IN HEAD AND NECK CANCER Michelle M Chen, MD, Uchechukwu C Megwalu, MD, MPH, Davud Sirjani, MD, Eben L Rosenthal, MD, Vasu Divi, MD; Stanford University

Poster Listing

C076: 60-DAY READMISSION FOLLOWING TRANSORAL ROBOTIC SURGERY FOR OROPHARYNGEAL SQUAMOUS CELL CARCINOMA Harman S Parhar, MD[1], Elizabeth Gausden, MD, MPH[2], Jayendrakumar Patel, MD[2], Eitan Prisman, MD[1], Donald W Anderson, MD[1], J S Durham, MD[1], Barret Rush, MD, MPH[1]; [1]University of British Columbia, [2]Harvard University

C077: FACTORS ASSOCIATED WITH NOT RECEIVING ADJUVANT RADIATION THERAPY IN RESECTED HEAD AND NECK SQUAMOUS CELL CARCINOMA: A CONTEMPORARY ANALYSIS Cheryl C Nocon, MD[1], Gaurav S Ajmani, MHS[2], Mihir K Bhayani, MD[1]; [1]NorthShore University HealthSystem, [2]University of Chicago Pritzker School of Medicine

C078: LARGE SCALE EDUCATIONAL INTERVENTION TO IMPROVE LARYNGECTOMY PATIENTS SAFETY: A PROSPECTIVE MULTI-INSTITUTIONAL PILOT PATIENT SAFETY PROJECT IN A PUBLIC HOSPITAL SETTING Sarah Gitomer, MD, Rayna W Bohman, MA, CCCSLP, Sandeep Markan, MD, MBBS, FCCP, Nadia G Mohyuddin, MD, FACS; Baylor College of Medicine

C079: ORAL CAVITY CANCER MANAGEMENT GUIDELINES FOR LOW RESOURCE REGIONS B Cervenka[1], P Pipkorn[2], J Fagan[3], M Zafereo[4], J Aswani[5], C Macharia[6], I Kundiona[7], V Mashamba[8], C Zender[9], M Moore[1]; [1]University of California at Davis, [2]Washington University, [3]The University of Cape Town, [4]The University of Texas, MD Anderson Cancer Center, [5]University of Nairobi, [6]AIC Kijabe, [7]The University of Zimbabwe, [8]Muhimbili National Hospital, [9]Case Western Reserve Medical Center

C080: THE INCIDENCE AND PREDICTORS OF NEUROPATHIC PAIN FOLLOWING NECK DISSECTION Hunter D Archibald, BS[1], Katrina Harrill, RN, BSN, OCN[2], Chad Zender, MD[2]; [1]Case Western Reserve University School Of Medicine, [2]University Hospitals

C081: RISK FACTORS AND COMPLICATIONS FOR READMISSION FOLLOWING LARYNGECTOMY WITH AND WITHOUT FLAP RECONSTRUCTION Michael K Ghiam, MD[1], Zoukaa Sargi, MD[1], Alex Langerman, MD[2], Sarah Rohde[2]; [1]University of Miami School of Medicine, [2]Vanderbilt University School of Medicine

C082: PERIOPERATIVE BRIEFING COMMUNICATION AND TREATMENT PLANNING: IMPLEMENTATION AND EARLY RESULTS Christopher H Rassekh, MD, Joshua H Atkins, MD, Bert W O'Malley, Jr., MD, Ara A Chalian, MD, Ellen A. Paul, BSE, Gregory S Weinstein, MD; University of Pennsylvania

C083: QUALITY OF LIFE ROLE OF MARIJUANA IN HEAD AND NECK CANCER PATIENTS Han Zhang, MD, FRCSC[1], Michael Xie, BHSc[2], Stuart D Archibald, MD, FRCSC[1], B. Stanley Jackson, MBBS, FRCSC[1], Michael K Gupta, MD, MSc, FRCSC[1]; [1]Division of Otolaryngology-Head and Neck Surgery, McMaster University, [2]DeGroote Faculty of Medicine, McMaster University

C084: TREATMENT DELAYS IN OROPHARYNGEAL CANCER TREATED WITH PRIMARY RADIATION: ESTABLISHMENT OF NATIONAL BENCHMARKS AND ASSOCIATION WITH SURVIVAL Elliot Morse, Shayan Cheraghlou, Benjamin Judson, MD, Saral Mehra, MD, MBA; Yale University Department of Surgery, Division of Otolaryngology

C085: REFUSAL OF ADJUVANT RADIATION TREATMENT IN HEAD AND NECK SQUAMOUS CELL CARCINOMA PATIENTS Marcus L Elias, BS, Joseph S Weisberger, MS, Meghan M Crippen, MS, Jean A Eloy, MD, FACS, Soly Baredes, MD, FACS, Richard C Park, MD, FACS; Rutgers New Jersey Medical School

C086: SOCIOECONOMIC STATUS AND RURALITY AMONG PATIENTS WITH HEAD AND NECK CANCER Lauren Lawrence, MD, Mitchell Heuermann, Pardis Javadi, MD, Arun Sharma, MD, MS; Southern Illinois University School of Medicine

C087: ORAL MORPHINE EQUIVALENT (OME) USAGE IN HEAD AND NECK MICROVASCULAR RECONSTRUCTION Elizabeth Cedars, MD, Ivan El-Sayed, MD, Jonathan George, MD, Patrick Ha, MD, Philip D Knott, MD, William R Ryan, MD, Rahul Seth, MD, Chase Heaton, MD; University of California, San Francisco

Poster Listing

C088: PROSPECTIVE SCREENING OF HEAD AND NECK CANCER PATIENTS USING THE OPIOID RISK TOOL Kate Clancy, MD[1], Emily Ahadizadeh, BS[2], Jason E Thuener, MD[1], Kathryn Hoppe, MD[1], Katrina Harrill, RN[1], Nicole Fowler, MD[1], Rod Rezaee, MD[1], Pierre Lavertu, MD[1], Chad A Zender, MD[1]; [1]University Hospitals Cleveland Medical Center, [2]Case Western Reserve School of Medicine

C089: INTERPRETING INDETERMINATE POST-TREATMENT PET/CT RESULTS IN PATIENTS WITH HEAD AND NECK SQUAMOUS CELL CARCINOMA Valeda Yong, BA[1], Mustafa Ascha, MS[2], Musaddiq Awan, MD[3], Chad Zender, MD, FACS[2]; [1]Case Western Reserve University School of Medicine, [2]University Hospitals Cleveland Medical Center - ENT Institute, [3]University Hospitals Cleveland Medical Center - Radiation Oncology

C090: NARCOTIC USE AND PAIN PERCEPTION FOLLOWING MAJOR HEAD AND NECK SURGERY Eugenie Du, MD, Zainab Farzal, MD, Elizabeth D Stephenson, BA, April M Tanner, MD, Katherine N Adams, BS, Douglas R Farquhar, MD, MPH, Bhishamjit S Chera, MD, Brien R Pace, ACNPBC, Mark C Weissler, MD, Maryam Jowza, MD, Samip B Patel, MD, Jeffrey Blumberg, MD, Trevor G Hackman, MD, Adam M Zanation, MD; University of North Carolina at Chapel Hill

C091: USE OF SURVEILLANCE CARE PATHWAY AFTER HEAD AND NECK CANCER TREATMENT WITH CURATIVE INTENT, PATIENT S AND PROVIDER S ADHERENCE Moran Amit, Samantha Tam, Karen Y Choi, Beth Beadle, Randal Weber, Amy Hessel; MD Anderson Cancer Center

C092: OPIOID PRESCRIPTION PATTERNS FOR PATIENTS WITH HEAD AND NECK CANCER Rosh K Sethi, MD, MPH[1], Neelima Panth, BS[2], Sidharth V Puram, MD, PhD[1], Mark A Varvares, MD[1]; [1]Massachusetts Eye and Ear Infirmary, [2]Duke University

C093: POSITIVE SURGICAL MARGINS IN MAJOR SALIVARY GLAND CANCER Elliot Morse, BS, Rance Fujiwara, BS, Benjamin Judson, MD, Saral Mehra, MD, MBA; Yale University Department of Surgery, Division of Otolarynology

C094: SURGICAL HANDICAP OF THE OROPHARYNX (SHOP): A NOVEL QUALITY OF LIFE TOOL FOR TRANSORAL ROBOTIC SURGERY (TORS) PATIENTS Brittany Barber, MD, MSc, FRCSC, Jonathan Garneau, MD, MSc, FRCSC, Marita Teng, MD, FACS, Joshua Rosenberg, MD, FACS, Michael Yao, MD, FACS, Vishal Gupta, MD, FACS, Richard Bakst, MD, Cathy Lazarus, PhD, CCCSLP, Eric Genden, MD, FACS, Brett Miles, MD, DDS, FACS; Icahn School of Medicine at Mount Sinai

C095: MORBIDITY AND MORTALITY AMONG HEAD AND NECK CANCER PATIENTS IN THE EMERGENCY DEPARTMENT: A NATIONAL PERSPECTIVE Maxwell P Kligerman, MD, MPH[1], Rosh K.V. Sethi, MD, MPH[2], Elliot D Kozin, MD[2], Stacey T Gray, MD[2], Mark G Shrime, MD, MPH, PhD[2]; [1]Stanford University, [2]Massachusetts Eye and Ear Infirmary

C096: POST-OPERATIVE PAIN ASSESSMENT IN HEAD AND NECK SURGERY Emily N Ahadizadeh, BS[1], Kate Clancy, MD[2], Jason Thuener, MD[2], Katrina Harrill, RN, OCN[2], Kathryn Hoppe, MD[2], Chad A Zender, MD[2]; [1]Case Western Reserve University School of Medicine, [2]University Hospitals Cleveland Medical Center

C097: IMPACT OF STANDARDIZED TRACHEOSTOMY CARE PROTOCOL IMPLEMENTATION ON THE PREVENTION OF LIFE THREATENING RESPIRATORY EVENTS Maheer M Masood, BA[1], Douglas R Farquhar, MD, MPH[1], Christopher Biancaniello, BS[2], Trevor G Hackman, MD[1]; [1]Department of Otolaryngology/Head and Neck Surgery, University of North Carolina School of Medicine, Chapel Hill, NC, [2]Department of Respiratory Therapy, University of North Carolina School of Medicine, Chapel Hill, NC

C099: COMPLICATIONS ASSOCIATED WITH MORTALITY IN PATIENTS UNDERGOING LARYNGECTOMY FOR LARYNGEAL CANCER Alexander N Goel, BA, Jason J Yang, BS, Jennifer L Long, MD, PhD; Department of Head and Neck Surgery, David Geffen School of Medicine at University of California, Los Angeles, Los Angeles, California, USA

Poster Listing

C100: A MODEL FOR IMPROVED TIMELY ACCESS AND UTILIZATION OF SUPPORTIVE CARE FOR HEAD AND NECK CANCER PATIENTS. Debra M DeMille, MS, RD, CSO[1], Meredith Pauley, MA, CCCSLP[2], Tiffany Hogan, MA, CCCSLP[2], Jason G Newman, MD, Associate, Professor[3], Mary Pat Lynch, CRNP, MSN, AOCNP[1]; [1]Abramson Cancer Center at Pennsylvania Hospital, [2]Good Shepard Penn Partners, [3]Otorhinolaryngology- University of Pennsylvania

C101: RADIOGRAPHIC SURVEILLANCE IN PATIENTS WITH HEAD AND NECK CANCER USING SEER-MEDICARE DATA: 2002-2011 Samantha Tam, MD, Zhannat Nurgalieva, MD, PhD, Hui Zhao, PhD, Sharon H Giordano, MD, MPH, Carol M Lewis, MD, MPH; University of Texas MD Anderson Cancer Center

Reconstruction and Rehabilitation

C102: COMPARISON OF BONE RESORPTION IN FIBULA VERSUS SCAPULA TIP FREE FLAPS IN MANDIBULAR RECONSTRUCTION Peter S Vosler, MD, PhD[1], Jeffery Blumberg, MD[2], Tuija Ylä-Kotola, MD, PhD[3], Stephanie Johnson-Obaski, MD[4], Paul C Walker, MD[5], Stephen Hofer, MD[1], John R de Almeida, MD[1], Douglas B Chepeha, MD[1], Ralph W Gilbert, MD[1], David P Goldstein, MD[1]; [1]University of Toronto, [2]University of North Carolina, [3]Helskinki University Central Hospital, [4]University of Ottawa, [5]Loma Linda University

C103: PREDICTORS OF FUNCTIONAL OUTCOMES FOLLOWING FREE TISSUE RECONSTRUCTION FOR TRANSORAL ROBOTIC SURGERY Ernest D Gomez, MD, MTR, Alan D Workman, BA, William W Thomas, MD, Jason G Newman, MD, Gregory S Weinstein, MD, FACS, Steven B Cannady, MD; Hospital of the University of Pennsylvania

C104: AN EVALUATION OF CLINICAL OUTCOMES AND COST OF FREE OSTEOCUTANEOUS FIBULA FLAP FOR RECONSTRUCTION OF HEAD AND NECK SURGICAL DEFECTS Pratyusha Yalamanchi, BA[1], Alan Workman, BA[1], William W Thomas, MD[2], Karthik Rajasekaran, MD[2], Rabie M Shanti, DMD, MD[2], Ara C Chalian, MD[2], Jason G Newman, MD, FACS[2], Steven B Cannady, MD[2]; [1]Perelman School of Medicine at the University of Pennsylvania, [2]Department of Otorhinolaryngology–Head and Neck Surgery, Hospital of the University of Pennsylvania

C105: FIBULAR FLAP RECONSTRUCTION OF THE DISARTICULATED MANDIBLE: A REVIEW OF 25 CASES Nicholas F Callahan, MPH, DMD, MD, Steven Caldroney, DDS, MD, Michael Nagai, DDS, MD, Joshua E Lubek, DDS, MD, FACS, Donita Dyalram, DDS, MD, FACS; University of Maryland

C106: THE VALUE OF LARGE-SCALE HEAD AND NECK RESECTIONS AND RECONSTRUCTIONS Rebecca W Gao, MS[1], Brian Nuyen, MD[2], Eben L Rosenthal, MD[2]; [1]Stanford School of Medicine, [2]Department of Otolaryngology - Head and Neck Surgery, Stanford University

C107: ORAL FUNCTION AND QUALITY OF LIFE OUTCOMES AFTER MANDIBULAR RECONSTRUCTION IN PATIENTS WITH OSTEORADIONECROSIS A K Badhey, MD, A Roche, MD, H H Huang, MD, C Ganz, MS, M Urken, MD, D Buchbinder, DDS, D Okay, DDS, C Lazarus, PhD, I Likhterov, MD; Mount Sinai Health System

C108: SURGICAL MANAGEMENT OF PATIENTS WITH EAGLE SYNDROME Frances M Hardin, MD[1], Roy Xiao, BA[2], Brian B Burkey, MD[2]; [1]University of Missouri School of Medicine, [2]Cleveland Clinic

C109: THE EFFECT OF TRACHEOSTOMY ON DISCHARGE IN PATIENTS UNDERGOING MICROVASCULAR HEAD AND NECK RECONSTRUCTION Jenny F Ma, BA, Michael C Topf, MD, Larissa Sweeny, MD, Timothy Ortlip, MD, Richard Goldman, MD, Adam Luginbuhl, MD, Howard Krein, MD, Ryan Heffelfinger, MD, Joseph M Curry; Thomas Jefferson University

Poster Listing

C110: DUAL PHASE COMPUTED TOMOGRAPHY FOR PRE-SURGICAL PLANNING IN VESSEL DEPLETED PATIENTS Eugenie Du, MD, Sagar Patel, Samip N Patel; UNC - Chapel Hill

C111: MICROVASCULAR FREE FLAP RECONSTRUCTION BY OTOLARYNGOLOGISTS: CURRENT TRENDS IN PERIOPERATIVE CARE Kevin J Kovatch, MD, John E Hanks, MD, Jayne R Stevens, MD, Chaz L Stucken, MD; University of Michigan, Department of Otolaryngology-Head and Neck Surgery

C112: RESPIRATORY-SWALLOW PATTERN IN TOTAL LARYNGECTOMY Amy Fullerton, SLP, BCSS, Neil Chheda, MD, Natalie Silver, MS, MD, Peter Dziegielewski, MD, FACS, Karen Hegland, SLP, PhD; University of Florida

C113: PROGNOSTIC FACTORS ASSOCIATED WITH ACHIEVING TOTAL ORAL DIET AFTER GLOSSECTOMY WITH MICROVASCULAR FREE TISSUE TRANSFER Diane Chen, MD[1], Jonathan S Ni, BA[2], Tao Wang, PhD[1], Evan Graboyes, MD[2], Mitchell Worley, MD[2], Andrew T Huang, MD[1]; [1]Baylor College Of Medicine, [2]The Medical University of South Carolina

C114: QUANTIFYING EPIGENETIC AND CLINICAL IMPACTS OF EXTERNAL BEAM RADIATION ON WOUND HEALING AND DEVELOPMENT OF ANIMAL MODELS Michelle C Chen, BS[1], Jonathan D Bornstein, BA[1], Natalie A Ridge[2], Alban Linnenbach, PhD[2], Ulrich Rodeck, MD, PhD[2], Adam Luginbuhl, MD[3]; [1]Sidney Kimmel Medical College at Thomas Jefferson University, [2]Department of Dermatology and Cutaneous Biology at Thomas Jefferson University, [3]Department of Otolaryngology at Thomas Jefferson University

C115: LATE FREE FLAP FAILURE IN MICROVASCULAR HEAD AND NECK RECONSTRUCTION Michael C Topf, MD[1], Larissa Sweeny, MD[1], Ralph C Zohn, BS[1], Adam Luginbuhl, MD[1], Ryan Heffelfinger, MD[1], Howard Krein, MD, PhD[1], Benjamin J Greene, MD[2], Eben L Rosenthal, MD[3], Mark K Wax, MD[4], Joseph M Curry, MD[1]; [1]Thomas Jefferson University Hospital, [2]University of Alabama at Birmingham, [3]Stanford University, [4]Oregon Health and Science University

C116: COMORBIDITY AS A PREDICTOR FOR SUBMENTAL ISLAND PEDICLED FLAP COMPLICATIONS IN HEAD AND NECK SURGERY Peter W Kahng, BA[1], Marc A Polacco, MD[2], Wenyan Zhao, PhD[3], Joseph A Paydarfar, MD[2]; [1]Geisel School of Medicine at Dartmouth, [2]Dartmouth-Hitchcock Medical Center, [3]The Dartmouth Institute for Health Policy and Clinical Practice

C117: FASCIOCUTANEOUS FREE FLAPS VERSUS ISLANDED FACIAL ARTERY MYOMUCOSAL FLAP IN ORAL TONGUE AND FLOOR OF MOUTH DEFECT RECONSTRUCTION- A COMPARATIVE STUDY Shawn Joseph, MCh, Naveen BS, Jose Tharayil, FRCS, Mihir Mohan, DNB; VPS Lakeshore Hospital

C118: PET/CT OR MRI: WHAT IS THE BEST SURVEILLANCE IMAGING MODALITY FOLLOWING MICROVASCULAR HEAD AND NECK RECONSTRUCTIVE SURGERY Joanna Jacobs, BA[1], Ilya Likhterov, MD[2], Spencer Behr, MD[3], Christine Glastonbury, MD[3], Rahul Seth, MD[4], Chase Heaton, MD[4], P. Daniel Knott, MD[4]; [1]UCSF Medial Center, [2]Mt. Sinai Medical Center, Department of Otolaryngology/Head and Neck Surgery, [3]UCSF Medical Center, Department of Radiology, [4]UCSF Medical Center, Department of Otolaryngology/Head and Neck Surgery

C119: VERSATILITY OF ISLANDED FACIAL ARTERY MYOMUCOSAL FLAP IN HEAD AND NECK RECONSTRUCTION Shawn Joseph, Mihir Mohan, Naveen B S, Jose Tharayil; VPS Lakeshore Hospital, Kochi, Kerala

C120: ANGULAR VESSELS FOR FREE-TISSUE TRANSFER HEAD AND NECK RECONSTRUCTION: CLINICAL OUTCOMES Andrea L Hanick, MD, Peter J Ciolek, MD, Michael A Fritz, MD; Cleveland Clinic Foundation

C121: AESTHETIC OUTCOMES IN PATIENTS WITH FUNCTIONAL MANDIBULAR RECONSTRUCTION Sherif Idris[1], Johan Wolfaardt[2], Martin Osswald[2], Suresh Nayar[2], Kal Ansari[1], Jeffrey Harris[1], Vincent Biron[1], David Côté[1], Daniel O'Connell[1], Hadi Seikaly[1]; [1]Division of Otolaryngology - Head and Neck Surgery, Department of Surgery, University of Alberta, Edmonton, Alberta, Canada, [2]Institute for Reconstructive Sciences in Medicine, Misericordia Community Hospital, Edmonton, Alberta, Canada

Skin Cancer

Poster Listing

C122: CUTANEOUS MERKEL CELL CARCINOMA OF THE HEAD & NECK: A POPULATION-BASED ANALYSIS Zain H Rizvi, MD, Jose E Alonso, MD, Maie St. John, MD, PhD; Department of Head and Neck Surgery, University of California Los Angeles

C123: PATTERNS OF RECURRENCE AND RE-TREATMENT OUTCOMES AMONG CLINICAL STAGE I AND II HEAD AND NECK MELANOMA PATIENTS Arya W Namin, MD[1], Georgeanne E Cornell[2], Robert P Zitsch III, MD[1]; [1]University of Missouri, [2]Kansas City University of Medicine and Biosciences

C124: RISK FACTORS AND OUTCOMES OF METASTATIC CUTANEOUS SQUAMOUS CELL CARCINOMA IN THE HEAD AND NECK REGION: SYSTEMATIC REVIEW AND META-ANALYSIS Axel Sahovaler, MD[1], Rohin Krishnan, Msc[1], David Yeh, MD[1], Qi Zhou, PhD[2], Kevin Fung, MD[1], John Yoo, MD[1], Anthony Nichols, MD[1], Danielle MacNeil, MD, Msc[1]; [1]Western University, [2]MacMaster University

C125: ORBITAL EXENTERATION: SURVIVAL AND PROGNOSTIC FACTORS FOR OCULAR ADNEXAL, PERIOCULAR AND SINONASAL MALIGNANCY Jean-Michel Bourque, MD[1], Yvonne Molgat[2], Nathalie Audet[2]; [1]Department of Ophthalmology, Otolaryngology Head and Neck Surgery, Université Laval, [2]CHU de Québec

Skull Base Cancer

C126: OHNGREN'S LINE: A RELIC IN THE MODERN ERA Meghan T Turner, MD[1], Mathew N Geltzeiler, MD[2], Andrea M Hebert, MD[3], Jad Ramadan, BS[1], Juan C Fernandez-Miranda, MD[4], Paul A Gardner, MD[4], Eric W Wang, MD[4], Carl H Snyderman, MD, MBA[4]; [1]West Virginia University Medical Center, [2]Oregon Health Sciences University, [3]University of Maryland Medical Center, [4]University of Pittsburgh Medical Center

C127: EFFECT OF ELDERLY STATUS ON POST-OPERATIVE COMPLICATIONS AND COST OF CARE OF SINONASAL MALIGNANCY PATIENTS Shreya Patel, BS, Suat Kilic, BA, Wayne D Hsueh, MD, Soly Baredes, MD, Richard Chan Woo Park, MD, Jean Anderson Eloy, MD; Rutgers New Jersey Medical School

C128: RECONSTRUCTION OF LATERAL SKULL BASE DEFECTS: COMPARISON OF REGIONAL AND FREE FLAPS Jordyn P Lucas, MD[1], Nicholas Guys, BA[1], Peter F Svider, MD[1], Houmehr Hojjat, MD[1], Hani Rayess, MD[1], Eleanor Chan, MD[2], Syed N Raza, MD[1]; [1]Department of Otolaryngology βHead and Neck Surgery, Wayne State University School of Medicine, [2]Michigan Ear Institue

C129: ACINIC CELL CARCINOMA OF THE PAROTID: CLOSE MARGINS AND ADJUVANT THERAPY Joseph Zenga, MD, Anuurag Parikh, MD, Derrick Lin, MD, Daniel Deschler, MD; Massachusetts Eye and Ear Infirmary, Harvard Medical School

C130: CHANGING INDICATIONS FOR BIFRONTAL CRANIOTOMY IN THE MANAGEMENT OF ESTHESIONEUROBLASTOMA Madeleine P Strohl, MD, Ivan H El-Sayed, MD, FACS; University of California San Francisco

Survivorship

C131: MEASURING THE MENTAL HEALTH STATUS OF PATIENTS WITH HEAD AND NECK MALIGNANCIES: A RETROSPECTIVE STUDY USING A LARGE CLAIMS-BASED DATABASE Ji Hyae Lee, BA[1], Djibril Ba, MPH[1], Guodong Liu, PhD[1], Douglas Leslie, PhD[1], Brad Zacharia, MD, MS[2], Neerav Goyal, MD, MPH[2]; [1]Penn State College of Medicine, [2]Penn State Milton S. Hershey Medical Center

C132: STATE OF SURVIVORSHIP IN HEAD AND NECK CANCER: A NATIONAL SURVEY David M Cognetti, MD[1], Vikki M Villafor, MD[2], Carole Fakhry, MD[3], Matthew Miller, MD[4], Kelly M Malloy, MD[5]; [1]Sidney Kimmel Cancer Center at Thomas Jefferson University, [2]Northwestern Medicine, Robert H Lurie Comprehensive Cancer Center of Northwestern University, [3]Johns Hopkins Medicine, [4]University of Rochester, [5]University of Michigan

C133: PROGNOSTIC VALUE OF SITE-SPECIFIC METASTASES IN ORAL CAVITY AND OROPHARYNGEAL CANCER SURVIVAL Monica C Azmy, BS, Aparna Govindan, BA, Nirali M Patel, BA, Eveylene Kalyoussef, MD, FACS; Rutgers New Jersey Medical School

Poster Listing

C134: PATTERNS OF FAILURE AND SECOND PRIMARY CANCERS IN OROPHARYNGEAL CANCER-IMPLICATIONS FOR SURVEILLANCE IN THE HPV ERA. Ryan Holstead, MD[1], Keara Barnaby, PA[1], Trisha Shroff[2], Doru Paul, MD[1], Steven Savona, MD[1], Douglas Frank, MD[1], Dev Kamdar, MD[1], Lucio Pereira, MD[1], John Fantasia, DDS[1], Maged Ghaly, MD[1], Jed Pollack, MD[1], Sewit Teckie, MD[1], Nagashree Seetharamu, MD[1]; [1]Hofstra Northwell School of Medicine, [2]Monter Cancer Center, Northwell Health

C135: TRANSORAL ROBOTIC SURGERY-ASSISTED ENDOSCOPY WITH PRIMARY SITE DETECTION FOR OCCULT MUCOSAL PRIMARIES 2 YEAR SURVIVAL Karthik Rajasekaran, MD, Neslihan Yarpkak, MD, Jason Adleberg, BSE, Bert W O'Malley, MD, Jason Newman, MD, Steven Cannady, MD, Ara Chalian, MD, Christopher Rassekh, MD, Alexander Lin, MD, John Lukens, MD, Samuel Swisher-Mcclure, MD, Roger Cohen, MD, Charu Aggarwal, MD, Joshua Bauml, MD, Gregory S Weinstein, MD; University of Pennsylvania

C136: COMMUNICATIVE PARTICIPATION AND QUALITY OF LIFE IN PRE-TREATMENT HNC PATIENTS Tanya Eadie, PhD, Susan Bolt, MSP, Mara Kapsner-Smith, MS, Cara Sauder, MA, Eduardo Mendez, MD, MS, Neal Futran, MD; University of Washington

C137: VALIDATION OF THE AMERICAN JOINT COMMITTEE ON CANCER 8TH EDITION T-STAGING FOR HEAD AND NECK SOFT TISSUE SARCOMA AND PROPOSAL OF NEW STAGE GROUPINGS Katherine E Hicks, MD, MS[1], John D Cramer, MD[2], Urjeet Patel, MD[1], Sandeep Samant, MD[1]; [1]Northwestern Memorial Hospital, [2]University of Pittsburgh Medical Center

C138: PRIORITIES OF HEAD AND NECK CANCER PATIENTS AT DIAGNOSIS AND AFTER TREATMENT Melina J Windon, MD, Carole Fakhry, MD, MPH, Farhoud Faraji, PhD, Christine Gourin, MD, MPH, Ana Kiess, MD, PhD, Wayne Koch, MD, David Eisele, MD, Gypsyamber D'Souza, PhD; Johns Hopkins University School of Medicine

C139: MUCOEPIDERMOID CARCINOMA OF THE PAROTID GLAND: A NATIONAL CANCER DATA BASE STUDY Karthik Rajasekaran, MD, Vanessa Stubbs, MD, Jinbo Chen, PhD, Pratyusha Yalamanchi, BA, Steven Cannady, MD, Jason Brant, MD, Jason Newman, MD; University of Pennsylvania

Technology and Implementation

C140: ACADEMIC PRODUCTIVITY WITHIN AMERICAN HEAD AND NECK SOCIETY FELLOWSHIPS ACROSS THE US: REGIONAL AND GENDER DISPARITIES Meghan E Garstka, MD, MS, Antoine B Haddad, MD, Kareem Ibraheem, MD, Mahmoud Farag, MD, Neal Deot, Markus A Hoof, Emad Kandil, MD, MBA; Tulane University School of Medicine

C141: NOVEL TRANSORAL ROBOTIC SURGERY (TORS) HEMORRHAGE MODEL IMPLEMENTED IN A NATIONWIDE OTOLARYNGOLOGY EMERGENCIES BOOTCAMP: IMPORTANCE AND OUTCOMES. Axel Sahovaler, MD[1], Kevin Fung, MD[1], Uma Duvvuri, MD[2], David Eibling, MD[2], Kathryn Roth, MD[1]; [1]Western University, [2]University of Pittsburgh Medical Center

C142: RAMAN SPECTROSCOPY-BASED ENDOSCOPY: A NOVEL TECHNIQUE FOR DETECTION OF OROPHARYNGEAL CANCER C. Burton Wood, MD, Giju Thomas, PhD, Justin R Shinn, MD, Krystle L Kuhs, PhD, MPH, Anita Mahadevan-Jansen, PhD, Young J Kim, MD, PhD; Vanderbilt University Medical Center

C143: USE OF AN ADJUSTABLE AND REUSABLE UNIVERSAL CUTTING GUIDE FOR FIBULAR CONTOURING IN FREE OSTEOCUTANEOUS TISSUE TRANSFER Alan D Workman, William W Thomas, MD, Pratyusha Yalamanchi, Karthik Rajasekaran, MD, Ara A Chalian, MD, Rabie M Shanti, DMD, MD, Jason G Newman, MD, Steven B Cannady, MD; University of Pennsylvania

C144: STEREOTACTIC BODY RADIOTHERAPY (SBRT) FOR MEDICALLY UNFIT HEAD AND NECK CANCER H. AL-Assaf[1], I. Karam[2], J. W. Lee[2], K. Higgins[3], D. Enepekides[3], I. Poon[2]; [1]Department of Radiation Oncology, Comprehensive Cancer Center, King Fahad Medical City, Riyadh, Kingdom of Saudia Arabia, [2]Department of Radiation Oncology, Odette Cancer Centre, Sunnybrook Health Sciences Centre, University of Toronto, Toronto, ON, Canada, [3]Department of Otolaryngology - Head and Neck surgery, Odette Cancer Centre, Sunnybrook Health Sciences Centre, University of Toronto, Toronto, ON, Canada

Poster Listing

C145: VIBROACOUSTOGRAPHY IMAGE GUIDANCE IN HEAD AND NECK SUBSITES: A PRE-CLINICAL ANALYSIS OF EX VIVO TISSUES Nikan K Namiri[1], Karam W Badran, MD[2], Nathan C Francis, PhD[1], Ashkan Maccabi, PhD[3], Zachary D Taylor, PhD[1], Warren S Grundfest, MD[1], George N Saddik, PhD[1], Maie A St. John, MD, PhD[2]; [1]Department of Bioengineering, University of California, Los Angeles, Los Angeles, CA, USA, [2]Department of Head and Neck Surgery, David Geffen School of Medicine at University of California, Los Angeles, Los Angeles, California, USA, [3]Department of Electrical Engineering, University of California, Los Angeles, Los Angeles, CA, USA

Thyroid Cancer

C148: UTILITY OF THYROID IMAGING REPORTING AND DATA SYSTEM IN DETERMINING THYROID CANCER Michael Xie, BHSc[1], Han Zhang, MD, FRCSC[2], Stuart D Archibald, MD, FRCSC[2], B. Stanley Jackson, MD, FRCSC[2], Michael K Gupta, MD, MSc, FRCSC[2]; [1]Michael G. DeGroote School of Medicine, McMaster University, [2]Division of Otolaryngology-Head and Neck Surgery, McMaster University

C149: EFFICACY OF DIFFERENT MODALITIES OF CONCORDANT IMAGING IN THE SURGICAL MANAGEMENT OF PRIMARY HYPERPARATHYROIDISM. Robert E Reed, MD, Ellen Shaffrey, MS, David Shonka, MD; UVA

C150: AIRWAY MANAGEMENT IN SUBSTERNAL GOITER Kendall K Tasche, MD, Nitin A Pagedar, MD, MPH; University of Iowa Hospital

C151: SHOULD WE WORK UP INCIDENTAL THYROID NODULES FOUND ON CT? A COST-EFFECTIVENESS ANALYSIS Matthew G Crowson, MD, Jenny K Hoang, MBBS, MHS, Evan Myers, MD, MPH, Daniel J Rocke, JD, MD; Duke University Medical Center

C152: DECODING THYROID NODULES: GENETIC TESTING AND ARFI ELASTOGRAPHY Meghan E Garstka, MD, MS, Antoine B Haddad, MD, Kareem Ibraheem, MD, Hosham Shalaby, MD, Neal Deot, Markus A Hoof, Emad Kandil, MD, MBA; Tulane University School Of Medicine

C153: COMPARATIVE ANALYSIS OF TRANSORAL ROBOTIC THYROIDECTOMY VERSUS BILATERAL AXILLO-BREAST APPROACH ROBOTIC THYROIDECTOMY: A RETROSPECTIVE STUDY WITH PROPENSITY SCORE MATCHING Hong Kyu Kim, MD[1], Young Jun Chai, MD, PhD[2], Gianlorenzo Dionigi, MD[3], Eren Berber[4], Ralph P. Tufano, MD[5], Hoon Yub Kim, MD, PhD[1]; [1]Korea University College of Medicine, [2]Seoul National University Boramae Medical Center, [3]Department of Human Pathology in Adulthood and Childhood "G. Barresi", University Hospital βG. Martinoβ [4]Center for Endocrine Surgery, Cleveland Clinic, [5]The Johns Hopkins University School of Medicine

C154: MICROVASCULAR CLAMP TECHNIQUE FOR IDENTIFYING PARATHYROID ADENOMAS Noah Syme, Garth Olson, Michael Spafford, Nathan Boyd; University Of New Mexico HSC

C155: TOTAL THYROIDECTOMY FOR HYPERTHYROIDISM IS NOT ASSOCIATED WITH INCREASED COMPLICATION RATES Joshua Park, MD[1], Ethan Frank, BS[2], Sara Yang, MD[3], Esther Cha, BS[2], Kelton Messinger, BS[2], Kevin Codorniz, MD[4], Alfred Simental, MD[1]; [1]Loma Linda University Medical Center, Department of Otolaryngology, [2]Loma Linda University School of Medicine, [3]Loyola University Medical Center, Department of Otolaryngology, [4]Loma Linda University Medical Center, Department of Medicine, Division of Endocrinology

C156: PREVALENCE OF LEVEL IIB INVOLVEMENT IN PATIENTS UNDERGOING LATERAL NECK DISSECTION FOR PAPILLARY THYROID CANCER Luis A De Jesus Sanchez[1], Aisnley C Mann[2], James K Hawley[3], Mark E Zafareo, MD[4], Erich M Sturgis, MD, MPH[4]; [1]School of medicine, Medical Science Campus, University of Puerto Rico, San Juan, Puerto Rico, [2]College of Science, Louisiana State University, Baton Rouge, Louisiana, USA, [3]College of Liberal Arts, The University of Texas, Austin, Texas, USA, [4]Department of head and neck surgery, The University of Texas MD Anderson Cancer Center, Houston, Texas, USA

C157: THE IMPACT OF THE NUMBER OF DISSECTED LYMPH NODES IN PATIENTS WITH PAPILLARY THYROID CANCER. Hugo F Kohler, Andressa T Ramos, MD, Luciana A Pimmel, MD, Luiz P Kowalski, MD, PhD; A C Camargo Cancer Center

Poster Listing

C158: CLINICAL COURSE OF LOBECTOMY OF THYROID GLAND FOR T4 CASES OF PAPILLARY THYROID CARCINOMA Morimasa Kitamura, MD, PhD, Ichiro Tateya, MD, PhD, Atsushi Suehiro, MD, PhD, Yo Kishimoto, Takehiro Iki, MD, Nao Hiwatashi, MD, PhD, Hiroyuki Harada, MD, Koichi Omori, MD, PhD; Department of Otolaryngology, Hed and Neck Surgery, Graduate School of Medicine, Kyoto University, JAPAN

Quality of Care and Clinical Pathways

C159: PROSPECTIVE COMPARATIVE ANALYSIS OF PATIENT-REPORTED OUTCOMES IN PATIENTS RECEIVING SURGICAL OR NONSURGICAL TREATMENT FOR OROPHARYNGEAL SQUAMOUS CELL CARCINOMA Moran Amit, Kate Hutcheson, Jhankruti Zaveri, Jan Lewin, Brandon Gunn, Renata Ferraratto, Dave Fuller, Samantha Tam, Neil D Gross; MD Anderson Cancer Center

AHNS 2018 New Members

The AHNS extends a warm welcome to the following new members.

Active

Richard Cannon
Eun Hae Estelle Chang
Alexander Colevas
Jennifer Cracchiolo
Anupam Das
Vaninder Dhillon
Gillian Diercks
John Donovan
Katherine Fedder
Jessica Geiger
Benjamin Greene
Michael Groves
Jeffrey Houlton
Leon Kushnir
Patty Lee
Whitney Liddy
S. Danielle Macneil
Navin Mani
Erin Mckean
Elizabeth Nicolli
Grace Nimmons
Cheryl Nocon
Benjamin Roman
Eugene Son
Han Zhang

Associate

Usama Aboelkheir
Hussain Alsaffar
Ameya Asarkar
Ibrahim Bawab
Nathan Boyd
Dinesh Chhetri
Shyam Rao
Christopher Schmidt
Jumin Sunde
Yoko Takahashi
Majestic Tam
Carole Mckinstry

Candidate

Marianne Abouyared
Jamal Ahmed
Sundeep Alapati
David Ansah-Agyei
Amit Bhojwani
Andrew Birkeland
Erin Buczek
Blair Burton
Lisa Caulley
Brian Cervenka
David Choi
Jennifer Christenson
Deepa Danan
Yusuf Dundar
Joel Fontanarosa
Alexandros Georgolios
Tiffany Glazer
John Gleysteen
Ernest Gomez
Nathan Grohmann
Yarah Haidar
James Hamilton
Mohammad Hararah
Brianna Harris
Angela Haskins
Mohemmed Khan
David Kim
Mark Kubik
Alexander Kurjatko
Nicole Lebo
Jonathan Leeman
Changxing Liu
Shivangi Lohia
Catherine Lumley
Reema Mallick
Anastasios Maniakas
Marco Mascarella
Sean Massa
Adrian Mendez
Rachad Mhawej
Suhael Momin
Kelly Moyer
Misako Nagasaka
Sidharth Puram
Almoaidbellah Rammal
Rohit Ranganath
Dylan Roden
Eugene Sansoni
Stefanie Saunders
David Schoppy
Nolan Seim
Warren Swegal
Paul Swiecicki
Noah Syme
April Tanner
Patrick Tassone
Nirav Thakkar
William Thomas
Melanie Townsend
James Wu
Christopher Yao

Corresponding

Safina Ali
Ioannis Chatzistefanou
Muhammad Faisal
Apurva Garg
Chwee Ming Lim
Aviram Mizrachi
Ozan Ozgursoy
Naomi Rabinovics
Olivier Vanderveken

Notes

Notes

Notes

Notes

SAVE THE DATE!!

AHNS 2019
Annual Meeting

HELD DURING THE COMBINED
OTOLARYNGOLOGY SPRING MEETINGS (COSM)

May 1 - 2, 2019 • JW Marriott Austin • Austin, Texas