



American Head and Neck Society - Journal Club

Volume 19, March 2018, Issue 1

Table of Contents – [click the page number to go to the summary and full article link.](#)

<i>Management of the lateral neck compartment in patients with sporadic medullary thyroid cancer</i>	<i>page 1</i>
<i>Management of paratracheal lymph nodes in laryngeal cancer with subglottic involvement</i>	<i>page 2</i>
<i>Fluorodeoxyglucose-Positron Emission Tomography/ Computed Tomography After Concurrent Chemoradiotherapy in Locally Advanced Head-and-Neck Squamous Cell Cancer: The ECLYPS Study</i>	<i>page 2</i>
<i>Impact of Primary Tracheoesophageal Puncture on Outcomes after Total Laryngectomy</i>	<i>page 4</i>
<i>Osteoradionecrosis of the mandible in patients with oropharyngeal carcinoma treated with intensity-modulated radiotherapy</i>	<i>page 5</i>

[Management of the lateral neck compartment in patients with sporadic medullary thyroid cancer](#)

Pena I, Clayman GL, Grubbs EG, Bergeron JM Jr, Waguespack SG, Cabanillas ME, Dadu R, Hu MI, Fellman BM, Li Y, Gross ND, Lai SY, Sturgis EM, Zafereo ME.

From *Head & Neck*, January 2018

Total thyroidectomy and central compartment dissection are considered the standard treatment for patients with sporadic medullary carcinoma (MTC) by ATA and BTA guidelines. Lateral neck dissection is indicated when cervical imaging demonstrates metastatic disease or in patients with T2-T4 disease or patients with palpable disease in the central compartment. Contralateral side when calcitonin level exceeds 200pg/ml. On the other side, the indication of neck dissection increases the operative time, cost and risk of complications. The aim of this retrospective case series analysis was to evaluate the potential benefit of an elective neck dissection in patients with sporadic MTC and cN0 neck.

This is a retrospective series of 66 patients treated in a single institution from 1992 to 2014. All patients had sporadic MTC and clinically negative neck (after radiographic examination). They were submitted to total thyroidectomy with elective neck dissection (22 patients) (ELND group) or without elective dissection (44 patients, 67%) (no ELND group). There were no significant differences in both groups of patients, except that the patients not submitted to elective neck dissection tended to be the ones treated on the most recent years. Final pathology examination showed level VI positive lymph nodes in 27% of the ELND group and 32% in the no ELND group. The ELND group had lateral neck metastasis in 7/32 cases (32%). Central compartment disease was associated with the risk of lateral lymph node metastasis ($p=0.04$). However, there was no differences in biochemical cure, loco-regional recurrence rates and distant metastasis rates according to observation versus elective dissection of the lateral compartment. Five-year OS rates were 84% for the ELND group and 100% for the no ELND group ($p=0.156$).

This is a significant series of patients with sporadic MTC submitted to sensitive imaging confirming cN0 neck and not submitted to ELND. The study did not showed benefit of the indication of ELND in the highly selected group of patients. Longer follow-up and external validation or, ideally, a prospective



randomized trial are warranted in order to confirm the validity of the observation of the lateral neck in patients with cN0 stage.

[back to top](#)

Management of paratracheal lymph nodes in laryngeal cancer with subglottic involvement

Lucioni M, D'Ascanio L, De Nardi E, Lionello M, Bertolin A, Rizzotto G

*From **Head & Neck**. January 2018*

Several studies had shown the frequency and pattern of lymph node metastasis in the lateral neck in patients with larynx SCC. However, metastasis at the central compartment (level VI) and its association with the risk of stomal recurrences is usually underestimated. The reported prevalence of level VI metastasis varies from 9% up to 27%.

Lucioni et al., present a retrospective case series of 196 patients with laryngeal SCC involving the subglottis who underwent open laryngeal surgery (supratracheal laryngectomy, total laryngectomy or glottis-subglottic laryngectomy) with or without paratracheal dissection from 1999 to 2011 in a single institution. A total of 21 patients (10.7%) were previously submitted to radiation therapy. Most patients (90.8%) had cN0 neck and in 79% pathological examination of the specimen was negative (pN0). Level VI lymph nodes were observed in 12.9% of the 178 cases with cN0 neck. There was a marginally significant correlation among level VI metastasis and anterior subglottic involvement ($p=0.064$) and it was significant in cases with positive lymph nodes in the lateral levels ($p<0.01$). A total of 44 (22.4%) of the patients had local recurrences: 18 cases had true stomal (endoluminal mucosa) relapse, 19 (9.6%) had peristomal/paratracheal recurrences and 7 (3.5%) had a parastomal/submucosal recurrence. No one of the patients with paratracheal relapse survived beyond 36 months.

In the opinion of the authors, the high rate of stomal recurrences, suggests the indication of central compartment dissection in all patients with laryngeal SCC with subglottic extension and cN+ neck.

However, this is a retrospective series that included patients with primary and recurrent laryngeal carcinoma. Other factors can also affect the risk of stomal recurrences, and one of the most significant is previous tracheostomy, what is quite common in clinical practice in advanced larynx cancer with subglottic involvement. However, considering the high incidence of stomal recurrences, further studies are needed to clarify the role of routine elective dissection of the central compartment. The possible benefit of this dissection must be balanced with the possibility of increasing risk of local complications that could delay postoperative radiation therapy.

[back to top](#)

Fluorodeoxyglucose-Positron Emission Tomography/ Computed Tomography After Concurrent Chemoradiotherapy in Locally Advanced Head-and-Neck Squamous Cell Cancer: The ECLYPS Study

Tim Van den Wyngaert, Nils Helsen, Laurens Carp, Sara Hakim, Michel J. Martens, Isabel Hutsebaut, Philip R. Debruyne, Annelies L.M. Maes, Joost van Dinther, Carl G. Van Laer, Otto S. Hoekstra, Remco De Bree, Sabine A.E. Meersschout, Olivier Lenssen, Jan B. Vermorcken, Danielle Van den Weyngaert, and Sigrid Stroobants on behalf of the ECLYPS investigators

*From **The Journal of Clinical Oncology**, October 2017*

Purpose To assess the standardized implementation and reporting of surveillance [18F]fluorodeoxyglucosepositron emission tomography/computed tomography (FDG-PET/CT) scan of the neck in locoregionally advanced head-and-neck squamous cell carcinoma (LAHNSCC) after concurrent chemoradiotherapy (CCRT).

Patients and Methods We performed a prospective multicenter study of FDG-PET/CT scanning 12 weeks after CCRT in newly diagnosed patients with LAHNSCC (stage IVa/b) that used standardized reconstruction and Hopkins reporting criteria. The reference standard was histology or >12 months of clinical follow-up. The primary outcome measure was the negative predictive value (NPV) of FDG-PET/CT scans and other supporting diagnostic test characteristics, including time dependency with increasing follow up time.

Results Of 152 patients, 125 had adequate primary tumor control after CCRT and entered follow-up (median, 20.4 months). Twenty-three (18.4%) had residual neck disease. Overall, NPV was 92.1% (95% CI, 86.9% to 95.3%; null hypothesis: NPV = 85%; P = .012) with sensitivity of 65.2% (95% CI, 44.9% to 81.2%), specificity of 91.2% (95% CI, 84.1% to 95.3%), positive predictive value of 62.5% (95% CI, 45.5% to 76.9%), and accuracy of 86.4% (95% CI, 79.3% to 91.3%). Sensitivity was time dependent and high for residual disease manifesting up to 9 months after imaging but lower (59.7%) for disease detected up to 12 months after imaging. Standardized reporting criteria reduced the number of equivocal reports (95% CI for the difference, 2.6% to 15.0%; P = .003). Test characteristics were not improved with the addition of lymph node CT morphology criteria.

Conclusion

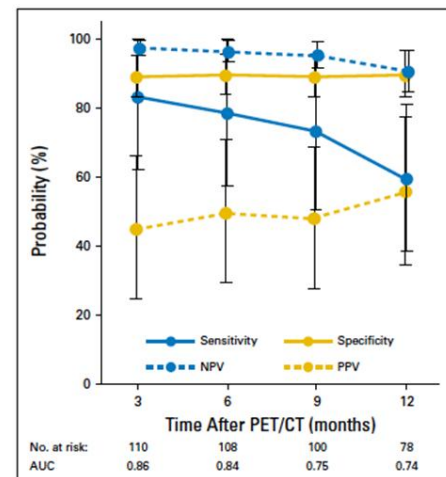
FDG-PET/CT surveillance using Hopkins criteria 12 weeks after CCRT is reliable in LAHNSCC except for late manifesting residual disease, which may require an additional surveillance scan at 1 year after CCRT to be detected.

Strengths

- Prospective, multicenter trial utilizing standardized PET/CT judging criteria (Hopkins)
- Strict follow up criteria with required histologic confirmation of recurrence or at least confirmation of residual nodal involvement by two different imaging modalities. At 1 year after completion of CCRT, a comprehensive imaging assessment of the neck was mandatory to rule out subclinical residual disease. If the patient declined, an additional year of clinical follow-up was required.
- High specificity and NPV,
- More balanced numbers of p16 + and – tumors than the PET-NECK trial
- Significant prognostic difference seen between PET + vs PET -

Limitations

- Low sensitivity, which appears to be time dependent: PET/CT can identify residual disease in patients who relapse up to a 9-month horizon after imaging with high sensitivity, but it is less able to do so for patients in whom residual disease was detected up to 12 months after imaging (sensitivity, 59.7%) (see below)





- Overall low number of patients with a positive neck (23 total) thus making the study slightly underpowered to assess all the variables within the Hopkins criteria (i.e. necrosis, lymph node size cutoff)
- Few p16 + patients with residual neck disease, thus difficult to make definitive conclusions about optimal imaging surveillance

[back to top](#)

[Impact of Primary Tracheoesophageal Puncture on Outcomes after Total Laryngectomy](#)

Aru Panwar, MD, Oleg Militsakh, MD, Robert Lindau, MD, Andrew Coughlin, MD, Harlan Sayles, MS, Katherine R. Rieke, MPH, MA, William Lydiatt, MD, Daniel Lydiatt, MD, DDS, and Russell Smith, MD

*From **Otolaryngology**, January 2018*

Objectives. To identify differences in postoperative wound complications associated with a primary tracheoesophageal puncture (TEP) at the time of laryngectomy versus no TEP.

Study Design. Retrospective review of large national data set.

Setting. Academic and nonacademic health care facilities in United States, contributing de-identified, risk-adjusted clinical data to the American College of Surgeons National Surgical Quality Improvement Program.

Subjects and Methods. The National Surgical Quality Improvement Program data set for years 2006 to 2012 identified 430 patients who underwent total laryngectomy with or without a primary TEP. Patients who underwent a TEP at the time of laryngectomy (n = 68) were compared with patients who underwent laryngectomy without a TEP (n = 362). Postoperative wound complications and secondary outcomes, including medical complications and length of hospitalization, were compared between the groups.

Results. The incidence of “superficial” and “deep or organ space” surgical site infection, medical complications, return to the operating room, and length of hospitalization were similar between the groups. Patients in the TEP group had a higher overall wound complication rate (relative risk, 2.02; 95% CI = 1.06-3.84; attributable risk, 8.17%; number needed to harm, 12).

Conclusions. Performance of a primary TEP concurrent to total laryngectomy contributed to a small increase in attributable risk for overall wound complications but did not add substantial risk for “superficial” or “deep or organ space” surgical site infection, medical complications, or increased burden for resource utilization. These data may help inform patient choice and physician recommendations for primary alaryngeal speech rehabilitation.

Strengths

- National database incorporating data from both academic and nonacademic centers
- Strict inclusion criteria to decrease heterogeneity in data
- Minimal difference in complications noted thereby suggesting that a primary TEP is a largely safe procedure



Limitations

- Retrospective data with inherent selection biases
- No multivariable analysis performed. Significant because there were increased comorbidities in the primary TEP group. Suggests that there may be minimal to no difference in overall wound complication after taking into account the increased rates of diabetes and HTN in the primary TEP group
- NSQIP only able to exclude those who had recently completed CRT (<90 days). Thus, there could be a fair number of patients who are undergoing salvage surgery from a more remote primary treatment course. These patients are at higher risk for wound complication and may be confounding the results.

[back to top](#)

[Osteoradionecrosis of the Mandible in Patients With Oropharyngeal Carcinoma Treated With Intensity-Modulated Radiotherapy](#)

Caparrotti F, Huang SH, Lu L, Bratman SV, Ringash J, Bayley A, Cho J, Giuliani M, Kim J, Waldron J, Hansen A, Tong L, Xu W, O'Sullivan B, Wood R, Goldstein D, Hope A.

From *Cancer*, October 2017

BACKGROUND: Osteoradionecrosis (ORN) of the mandible is a late toxicity affecting patients treated with radiotherapy for head and neck malignancies. To the authors' knowledge, ORN has no standardized grading system and its reporting is based on retrospective findings in heterogeneous patient populations. The rate of ORN in the era of intensity-modulated radiotherapy (IMRT) still is unknown.

METHODS: The authors report the incidence of ORN from prospectively collected data regarding 1196 patients who were diagnosed with squamous cell carcinoma of the oropharynx and treated with curative-intent IMRT, with or without concomitant systemic treatment, from January 2005 to December 2014. Each case of ORN was graded according to its severity. Clinical and dosimetric comparisons were performed between patients with ORN and a matched control cohort of patients without ORN.

RESULTS: The actuarial rate of ORN of the mandible was 3% at 1 year, 5% at 3 years, and 7% at 5 years. On multivariable analysis, smoking (hazard ratio, 1.9; 95% confidence interval, 1.07-3.4 [P5.03]) and T classification (hazard ratio, 1.78; 95% confidence interval, 1.02-3.1 [P5.041]) were found to be statistically significant risk factors. The presence of cardiovascular comorbidities, use of bisphosphonates, and pre-IMRT dental extractions were found to be different between the matched cohorts. The mandibular volume receiving 50 grays (Gy) (in cm³) and the volume receiving 60 Gy (in cm³) were found to be associated with ORN on multivariable analysis in the matched cohort patients receiving an IMRT regimen of 2 Gy per fraction.

CONCLUSIONS: ORN is relatively uncommon among patients with oropharyngeal carcinoma who are treated with IMRT, but continues to occur beyond 5 years after treatment. Modifiable risk factors that are associated with higher rates of ORN include smoking and the use of bisphosphonates. Minimizing the volumes of the mandible receiving >50 Gy or >60 Gy also may have an effect on the ORN rate. *Cancer* 2017;123:3691-700. VC 2017 American Cancer Society.

SUMMARY: 1196 patients, diagnosed with SCCA of the OP, treated with curative-intent IMRT, with or without concomitant systemic treatment were prospectively studied over a 10 year period to assess the rate and risk factors for ORN of the mandible. The rate of ORN rose over the study period with a rate of



3% at 1 year and 7% at 5 years. Smoking, T classification, bisphosphonates, pre radiation dental extractions and radiation volumes of >50% to the mandible all had an effect on ORN rate.

Strengths:

- Single institution, over 1000 patients, median follow-up = 5.1 years.
- Important findings:
 - smoking, bisphosphonates, pre radiation dental extraction, radiation volume >50Gy, and T stage were all found to affect (increase) significantly ORN risk
 - ORN was also more common in patients having undergone a neck dissection (all post treatment salvage) (P =.031)
 - tumor subsite (BOT vs tonsil) had no impact on the likelihood of developing ORN in this cohort
 - no statistically significant difference with regard to the incidence of ORN noted between HPV-positive and HPV-negative patients (P = .117)
 - No increased risk in patients undergoing radiation with chemotherapy

Weaknesses:

- Retrospective
- Although not the purpose of the study, the 5 year overall survival rate was only 66% and 73% of all patients in the cohort were HPV positive.

[*back to top*](#)
