



AHNS Skull Base Surgery Section Skull Base Surgery Patient Information

SKULL BASE SURGERY

The skull base is the undersurface of the skull, the border between the brain and the sinuses and neck. This area contains many important parts of the body, including brain, sinuses, eyes, nose, and ear cavities. The nerves and structures that control sight, hearing, smell, taste, speech, swallowing, and facial movement and sensation run through this area. Skull base surgery is a specialized field focused on management of diseases located in this area.

There are many disorders that require skull base surgery, including noncancerous and cancerous tumors of nose and sinuses, of the ear and mastoid bone, salivary glands, skin of the face or neck, and tumors arising from cranial nerves, the brain, or coverings of the brain. Surgery in this area may involve a team of surgeons including head and neck oncologic surgeons, neurotologists (ear specialists), neurosurgeons, oculoplastic (eye) surgeons and vascular surgeons.

The goal of skull base surgery is to treat the underlying problem or tumor with as little disruption of these important structures as possible using minimally invasive approaches.

ANTERIOR SKULL BASE SURGERY

The bone between the frontal lobes (front part of the brain) and the eye sockets, sinuses, and nose is called anterior skull base. Surgery in this area has improved significantly in the past 15 years and minimally invasive techniques are now commonly utilized. The most common minimally invasive technique is called endoscopic surgery, in which a small scope and instruments are used to perform surgery in the area through the nostrils, without an incision on the face or craniotomy (removal of a piece of skull bone to expose the brain). Some of the most common conditions that are treated with endoscopic surgery are tumors of the pituitary gland and benign and cancerous tumors of the sinuses and nasal cavity. Modern skull base surgeons are trained in both endoscopic and the traditional open techniques. The surgeons will review each case and determine the most appropriate treatment plan. The skull base team will always try to utilize the least invasive approach when possible, however, there remain many instances where the open techniques are still required.

LATERAL SKULL BASE SURGERY

The areas around the temporal bone, the part of the skull above and behind the ear, are called lateral skull base. Some tumors of the neck can be removed through this area through a neck incision, preserving nerves and blood vessels. More advanced tumors may require removal of the temporal bone by a neurotologist to allow safe tumor removal with preservation of normal structures or complete removal of a cancer. Overall, tumors of this area are relatively rare. The most common benign tumors of this region are tumors of the nerves of the inner ear (acoustic neuromas or vestibular schwannomas) or lining of the brain (meningiomas). Sometimes skin cancers or tumors of the parotid salivary gland require lateral skull base surgery to remove them completely, or to address the nerves that enter the skull in this region.