SELF ASSESSMENT QUESTIONS WITH CODING, RATIONALE & REFERENCES

Lecture 1 & 2: Suprahyoid Extramucosal Spaces of the Head & Neck Parts 1 & 2, Laurie A. Loevner, MD

QUESTION 1: The mandibular division of the trigeminal nerve (V3) courses through what skull base foramen?
   a) Foramen rotundum
   b) Pterygopalatine fossa
   c) Foramen ovale
   d) Palatine foramen
   e) Vidian canal

Correct Answer = c

Rationale: The third division (mandibular division) of the trigeminal nerve courses through foramen ovale and provides a conduit of spread of tumor between the masticator space and the intracranial compartment. The second division of the trigeminal nerve, the maxillary division, courses through foramen rotundum. Foramen rotundum provides a conduit of spread of tumor and infection to the orbital apex and cavernous sinus. The palatine foramen carries the palatine nerves, and the vidian artery and nerves course through the vidian canal.

References:

QUESTION 2: The retropharynx is located between what two anatomical structures?
   a) Prevertebral muscles and the spine
   b) Pharyngeal mucosa and the pharyngeal constrictor muscles
   c) Pharyngeal constrictors and prevertebral muscles
   d) The internal carotid artery and the lateral pytergoid muscle
   e) The internal carotid artery and the medial pytergoid muscle

Correct Answer = c

Rationale: The retropharyngeal space extends from the skull base to the upper mediastinum at approximately the T4 vertebral level. The retropharyngeal space is bounded by the buccopharyngeal fascia anteriorly and the alar fascia posteriorly. The retropharynx is located between the pharyngeal constrictors (anterior) and the prevertebral muscles (posterior). The danger space is located between the alar fascia and the prevertebral fascia and extends from the cranial skull base to the level of the crura of the diaphragm. The retropharynx contains lymph nodes which are especially abundant at and above the hyoid bone, and has adipose tissue, other connective tissue, lymphatics, nerves and blood vessels. This space is important as it is a potential route for the spread of infection and malignancy. It is a potential space, and is more readily identified when it is affected by a pathologic process. The retropharyngeal space, similar to the prestyloid parapharyngeal space, is more commonly secondarily infiltrated by a process involving an adjacent space or the mucosal surface (such as peritonsillar abscess) rather than affected by lesions intrinsic to this space.
Los Angeles Radiological Society
64th Annual Midwinter Radiology Conference
January 21-22, 2012 – Pasadena Convention Center

HEAD & NECK IMAGING: SUPRAHYOID EXTRAMUCOSAL SPACES AND THE SALIVARY GLAND

References:

QUESTION 3: A lobulated heterogeneously enhancing mass in the parapharyngeal space in a 45-year-old patient most likely represents?
   a. Mucoepidermoid carcinoma
   b. Benign mixed tumor (Pleomorphic Adenoma)
   c. Schwannoma
   d. Adenopathy

Correct Answer = b

Rationale: Pleomorphic adenoma [Benign Mixed Tumor (BMT)] is the most common benign tumor of the salivary glands, and the most common cause of a mass in the pre-styloid parapharyngeal space. Pleomorphic Adenomas having no clear gender or age predilection, but are occur most often in caucasian women in the 4th to 6th decades of life. In the parapharyngeal space, BMTs are frequently incidental findings incidentally detected on brain MR imaging being performed for unrelated symptoms. Lesions arising with the deep parotid lobe/parapharyngeal space can produce symptoms associated with displacement of the adjacent oropharyngeal airway (e.g. dysphagia, snoring), referred ear pain or fullness, or symptoms referable to the TMJ. Benign mixed tumors are typically well marginated lesions with lobulated borders reflecting benign neoplastic growth. On MR imaging, most BMTs are hyperintense on T2-weighted imaging, and demonstrate heterogenous enhancement if over 2 cm in size. Smaller tumors often demonstrate homogenous enhancement.

References:

QUESTION 4: Which statement is true regarding masses of the suprahyoid post-styloid parapharyngeal space (carotid space)?
   a. They displace the internal carotid artery anteriorly
   b. They displace the internal carotid artery posteriorly
   c. They do not displace the internal carotid artery
   d. They occlude the internal carotid artery
   e. They displace the styloid process posteriorly.

Correct Answer = a

Rationale: Because the pathology of the post-styloid parapharyngeal space is different than that of the pre-styloid compartment, these regions are considered individually when evaluating extra-mucosal pathology at the skull base. The carotid artery, jugular vein, sympathetic nervous system plexus, jugular chain lymph nodes, and cranial nerves 9 through 12 are all included in the contents of the suprahyoid post-styloid parapharyngeal space (carotid space). Lesions of this space displace the fat in the pre-styloid parapharyngeal space anteriorly. The stylohyoid process and its musculature are also be displaced anteriorly. Since the neurovascular bundle sits behind the internal carotid artery, masses arising from these structures such as schwannomas and paraganglioms when large enough displace the internal carotid artery anteriorly too.
References:

Lecture 3: Salivary Gland Imaging: Normal Anatomy & Pathology, Bronwyn E. Hamilton, MD

QUESTION 5: Causes of a “cyst & micronodular” appearance with punctate calcifications in both parotid glands favors:
1. Bilateral warthins tumors
2. Lymphoma
3. HIV-lymphoeithelial lesions
4. Sjogren’s disease
5. Viral parotitis

Correct Answer = 4

Rationale: Sjogren’s disease, because calc++ help distinguish from HIV-LEL.

References:

QUESTION 6: Bilateral wharton’s duct dilation most suggests:
1. Calculus disease
2. Bilateral strictures
3. Floor of mouth squamous carcinoma
4. Kuttner tumor
5. Lymphoma

Correct Answer = 3

Rationale: Floor of mouth SCCa commonly causes wharton duct obstruction. Lack of obvious obstructing calculus should prompt search for a mucosal primary (small lesions are easily missed). Calculus and stricture are common cause of unilateral obstruction. Kuttner tumor and lymphoma are more likely to causes SMG masses not duct obstruction.

References: