Parapharyngeal Space Neoplasms

Grand Rounds Presentation
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Introduction

- Anatomy
- PPS Neoplasms
- Presentation and Evaluation
- Surgical Approaches
- Complications
Introduction

- PPS neoplasms account for approx. 0.5% of head and neck tumors
- PPS anatomy is complex with many important neurovascular structures
- most PPS neoplasms are benign
- surgical resection mainstay of therapy
- systematic preoperative evaluation essential for proper treatment planning
Anatomy

- potential space lateral to upper pharynx
- inverted pyramid shape
- fascial compartmentalization
Anatomy

- superior-small portion of temporal bone
- inferior-junction of post. belly of digastric m. and greater cornu of hyoid bone
- posterior-fascia overlying vertebral column and paravertebral mm.
- medial-pharyngobasilar fascia/superior pharyngeal constrictor m. complex
- lateral-med. pterygoid fascia, mandibular ramus, retromandibular parotid, post. belly digastric m.
Anatomy

- fascial compartmentalization
- fascia from tenson veli palatini to styloid process and its muscle complex
- prestyloid region-deep lobe of parotid, fat, and lymph nodes
- poststyloid region-internal carotid a., internal jugular v., CNs IX-XII, sympathetic chain, and lymph nodes
- stylomandibular ligament and tunnel
**PPS Neoplasms**

- primary neoplasms—approx. 80% benign and 20% malignant
- approx. 50% from deep lobe of parotid or minor salivary gland tissue and 20% of neurogenic origin
Salivary Gland Neoplasms

- majority are benign pleomorphic adenomas
- intraparotid origin-retromandibular portion of gland, deep lobe, or tail of gland
- extraparotid origin-ectopic rests of salivary gland tissue
Neurogenic Neoplasms

- Most common—neurilemmoma or schwannoma arising from vagus n. or sympathetic chain (usu. do not affect n. of origin)
- Paraganglioma or chemodectoma from vagal or carotid bodies (approx. 10% malignant and 10-20% multicentric)
- Neurofibroma (typically multiple and intimately asso. with n. of origin)
Presentation and Evaluation

- Signs and symptoms often subtle until tumor has substantially enlarged
- Asymptomatic mass, lump in throat, fullness of neck and/or pharynx, cranial n. deficits
- Delay in diagnosis not uncommon
- Detailed Hx with complete head and neck exam
Presentation and Evaluation

- radiographic imaging (CT, MRI, angiography)
- assessment of catecholamine production
- embolization
- fine needle aspiration bx
Surgical Approaches

- external most common
- adequate exposure for complete tumor removal
- identification, preservation, and control of vital neurovascular structures
- minimize morbidity and mortality
- approach design should allow for extension to provide additional exposure as necessary
Surgical Approaches

- cervical or cervical-parotid
- cervical or cervical-parotid with midline mandibulotomy
- cervical approach adequate for removal of majority of tumors
Complications

- neurovascular injury
- mandibulotomy complications
- tumor recurrence
- other complications
Conclusions

- PPS is complex anatomical region containing many vital structures
- Majority of PPS neoplasms are salivary or neurogenic tumors
- Surgical resection treatment of choice
- Careful preoperative planning essential
- Cervical approach adequate for majority of tumors
- Flexible approach with minimal M&M