Peritonsillar Abscess

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7/21/2020

Rad 4001

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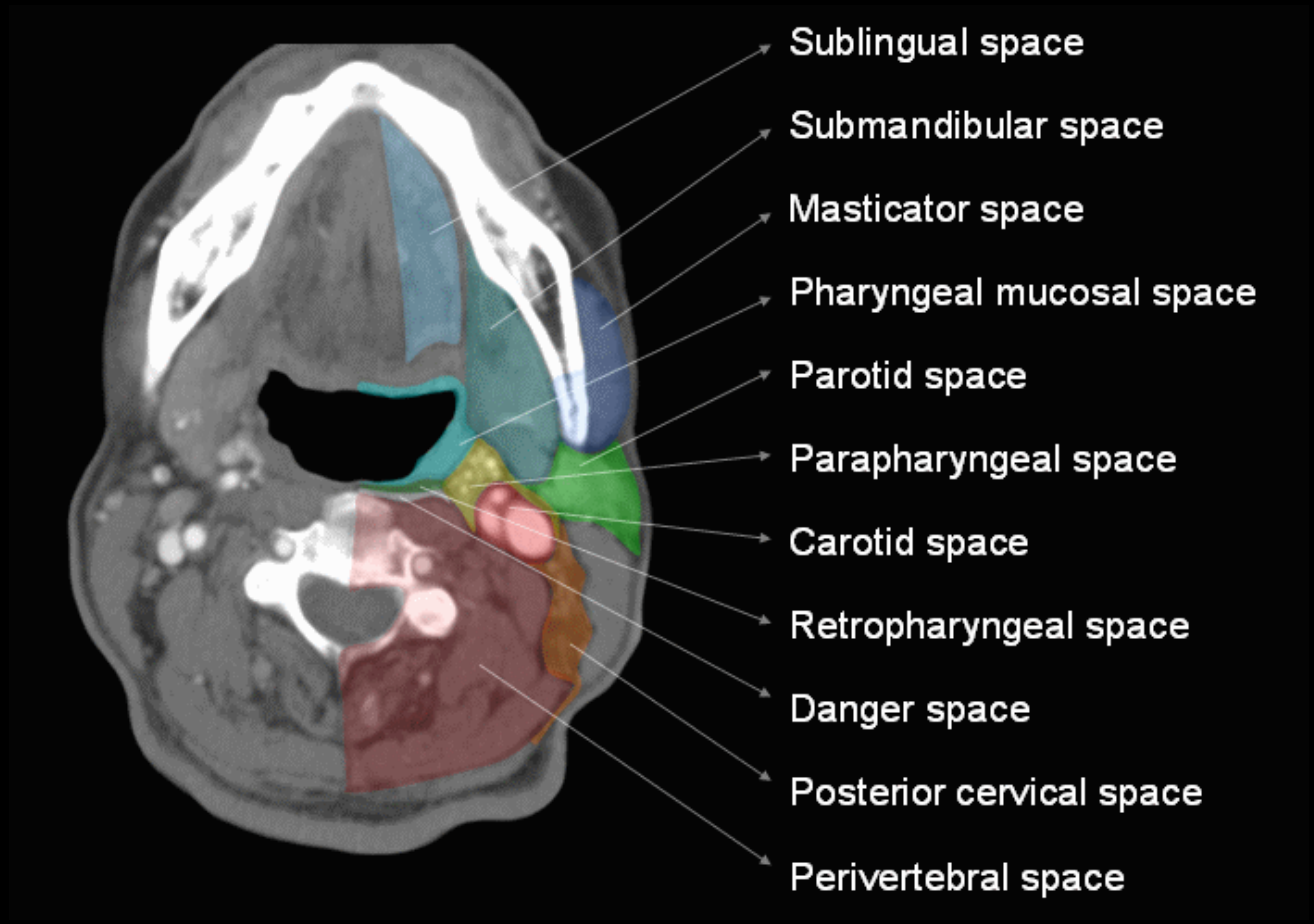
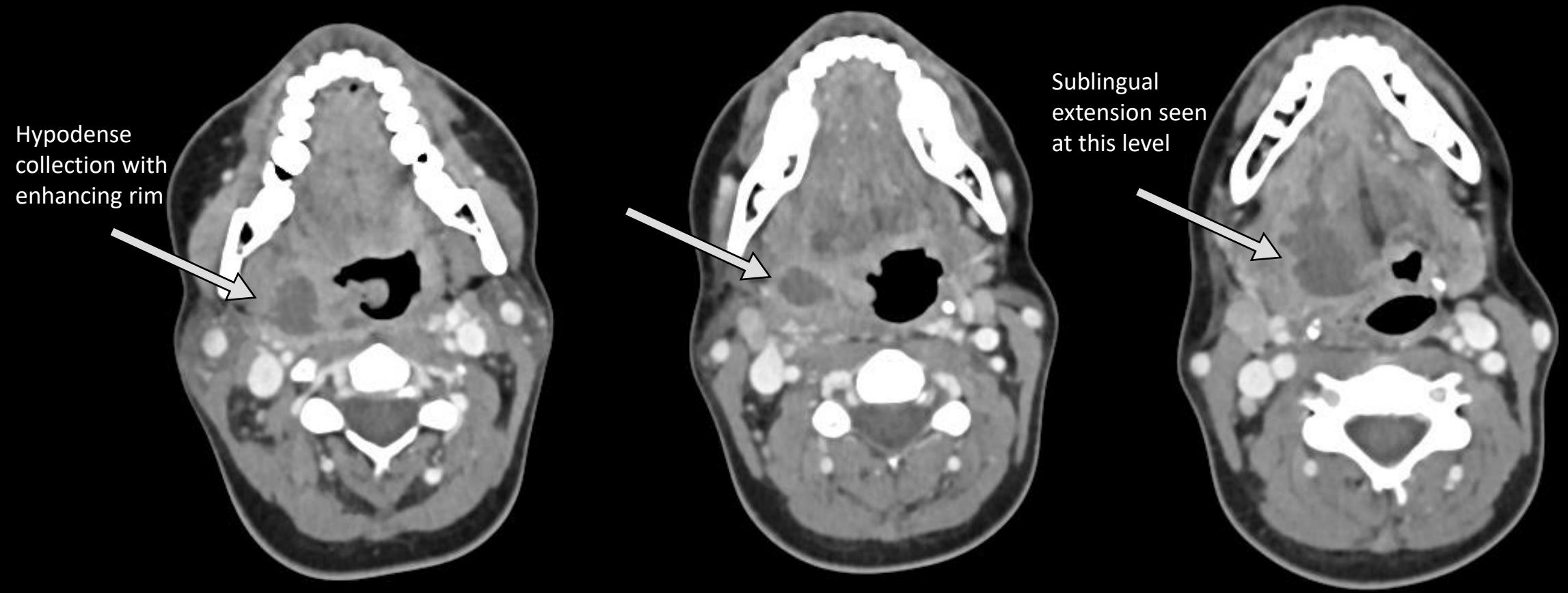
Clinical History

- 40F w/ PMH of gastritis, diverticulitis, hiatal hernia, and Barrett's esophagus presents with sore throat and vocal changes.
  - Patient initially presented to outside urgent care with sore throat and vocal changes. Neck CT at that time showed no signs of infection.
  - Patient returns 2 days later with worsening symptoms and found to have an abscess. I&D was performed, pt given Augmentin and steroids.
  - Her symptoms continued to progress until she presented here 5 days after initial symptoms with worsening sore throat, swelling, odynophagia and vocal changes.
- Physical Exam
  - Posterior pharyngeal erythema, R peritonsillar swelling, leftward uvula deviation, and slight hoarseness
  - Vitals were WNL

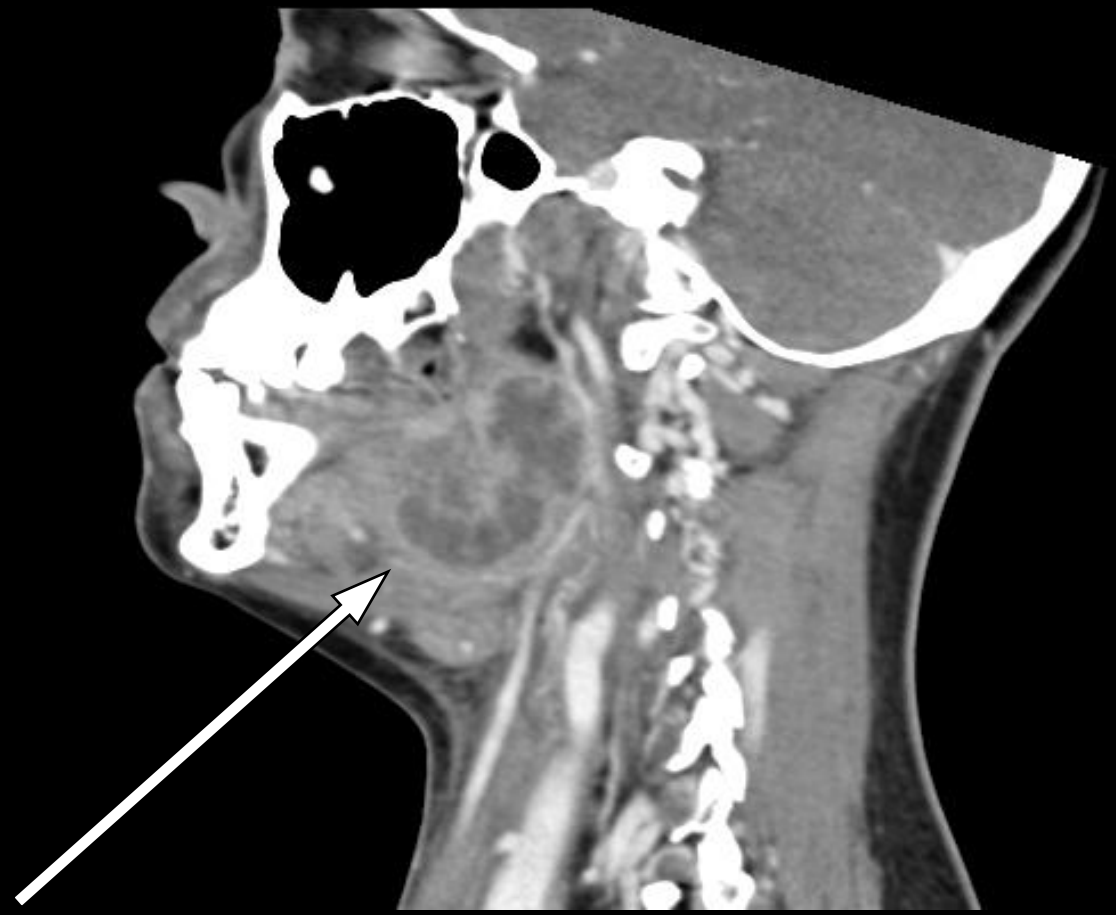
Neck Spaces


Sublingual space
Submandibular space
Masticator space
Pharyngeal mucosal space
Parotid space
Parapharyngeal space
Carotid space
Retropharyngeal space
Danger space
Posterior cervical space
Perivertebral space

Relevant imaging



Relevant Imaging



Multiloculated hypodensity
with sublingual extension

Key H&P and Imaging Findings

- Sore throat, vocal changes and unilateral pharyngeal swelling with uvular deviation in the setting of known abscess.

- Multiloculated hypodense fluid collection surrounded by an enhancing rim in the peritonsillar area with extension into the sublingual space.

Differential Diagnosis

- Peritonsillar Abscess –
  - Accumulation of pus that extends through the fibrous capsule of the tonsil and superior pharyngeal constrictor muscle. Can extend into the parapharyngeal, masticator, and/or submandibular spaces.
- Intratonsillar Abscess
  - Accumulation of pus within the tonsillar parenchyma (within the capsule).
- Tonsillitis with Phlegmon
  - suppurative cellulitis (no pus) occurring between the tonsil capsule and pharyngeal wall
- Retropharyngeal Abscess
  - Accumulation of pus within the potential space bounded between the Alar fascia, Buccopharyngeal fascia, base of the skull, and superior mediastinum.

Discussion

- Peritonsillar Abscess
  - Accumulation of pus that extends through the fibrous capsule of the tonsil and superior pharyngeal constrictor muscle. Can extend into the parapharyngeal, masticator, and/or submandibular spaces.
  - Peritonsillar abscess is thought to occur in stepwise progression from
    - Tonsillitis > Pharyngitis/Cellulitis (Phlegmon) > Abscess

- Presentation
  - Unilateral severe sore throat, fever, peritonsillar swelling, muffled voice, uvular deviation and salivary pooling.
  - Trismus (limited jaw ROM) distinguishes between PTA and pharyngitis/tonsillitis
  - PTA is a clinical diagnosis

Discussion

- Microbiology
  - Peritonsillar Abscesses are usually polymicrobial with common pathogens including:
    - GAS (S. Pyogenes), S. aureus, S. anginosus, H. Influenza, respiratory anaerobes (Fusobacteria, Prevotella, and Veillonella species).
    - Abscesses can include aerobes and anaerobes if cultured properly

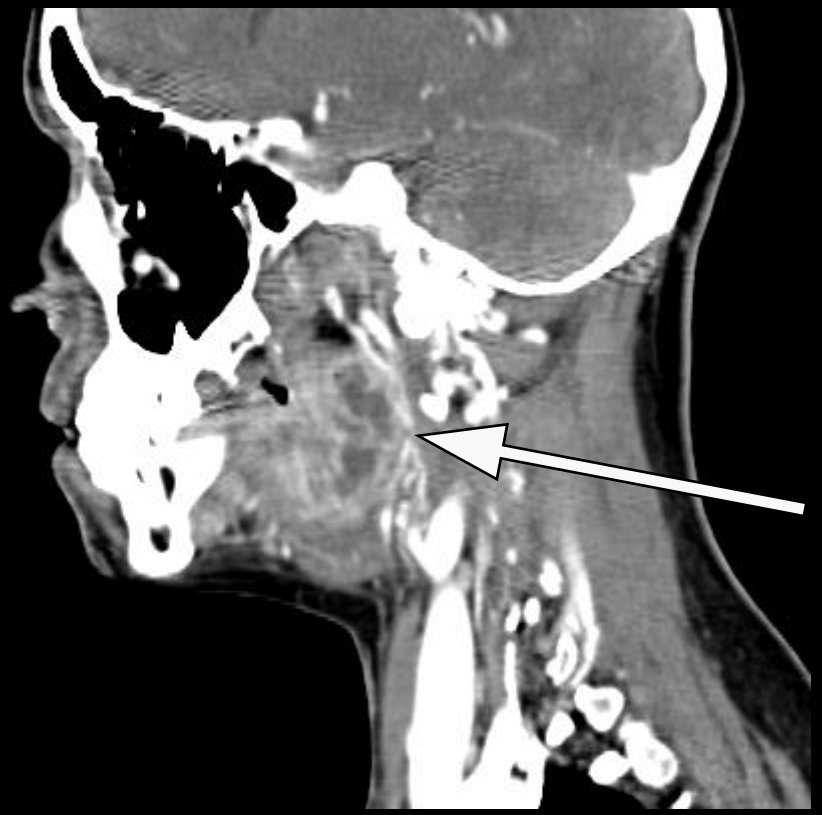
- Complications
    - Airway compromise
    - Spread into deeper neck spaces (retropharyngeal/"danger space") or vasculature (IJV thrombosis, Lemierre's syndrome, Carotid artery pseudoaneurysm/rupture)
    - Sepsis

Discussion

- Treatment
  - PTAs should be drained with needle aspiration or I&D.
  - All patients with peritonsillar infections require antibiotics and should cover GAS, S. Aureus, and respiratory anaerobes. Regimens include:
    - IV Ampicillin, IV Clindamycin, or Oral Amoxicillin-Clavulanate

Work Up and Treatment

- Patient was taken to OR for operative drainage. Purulence was drained and sent for culture and came back positive for gamma streptococcus, alpha streptococcus, and Prevotella Salivae
- Patient was placed on IV Clindamycin
- Repeat CT was performed on admission day 3 showing marginal improvement of PTA. I&D was performed on the same day however no purulence was found despite adequate surgical exploration.



Final Diagnosis

- Multiloculated peritonsillar abscess with extension into the sublingual space

ACR appropriateness Criteria

American College of Radiology
ACR Appropriateness Criteria®
Neck Mass/Adenopathy

Variant 1: **Nonpulsatile neck mass(es). Not parotid region or thyroid. Initial imaging.**

Procedure	Appropriateness Category	Relative Radiation Level
CT neck with IV contrast	Usually Appropriate	☢☢☢
MRI neck without and with IV contrast	Usually Appropriate	O
MRI neck without IV contrast	May Be Appropriate	O
US neck	May Be Appropriate	O
CT neck without IV contrast	May Be Appropriate	☢☢☢
CT neck without and with IV contrast	Usually Not Appropriate	☢☢☢
CTA neck with IV contrast	Usually Not Appropriate	☢☢☢
FDG-PET/CT skull base to mid-thigh	Usually Not Appropriate	☢☢☢☢
FDG-PET/MRI skull base to mid-thigh	Usually Not Appropriate	☢☢☢
MRA neck without and with IV contrast	Usually Not Appropriate	O
Arteriography cervicocerebral	Usually Not Appropriate	☢☢☢
MRA neck without IV contrast	Usually Not Appropriate	O

- Initial scan was in accordance with ACR guidelines for a neck abscess.
- However, it must be noted that the patient underwent at least 3 CT neck w contrast.

Cost of Imaging

- Average cost of CT Neck with contrast at Memorial Hermann
  - Uninsured $4,450
  - Insured $931 x3 = ($2793)

Take Home Points / Teaching points

- A peritonsillar abscess is an accumulation of pus that extends through the capsule of the tonsil and pharyngeal constrictor muscle
- Presents with sore throat, fever, vocal changes, unilateral swelling with uvular deviation
- Imaging will show a hypodense collection with an enhancing rim in the peritonsillar area
- Treatment includes drainage and antibiotics

References

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Questions?