

Case History

Chief complaint

"Sore throat and neck swelling"

History of present illness

65 year old male with past medical history of hypertension presented for evaluation of neck pain and swelling. Symptoms initially began on right side of neck 4 days prior to presentation and became progressively more severe and spread bilaterally. No associated chills, fever, voice changes, difficulty swallowing or speaking, no shortness of breath. Did report some chest discomfort and pain in right shoulder and scapula. Went to outside hospital initially, where CT scan was done and revealed the findings seen in accompanying photos and was sent for further workup by ENT.

Pertinent physical exam

- Vitals- Temp 37.7, HR 110, SpO2 90, BP 119/83, RR 20
- HEENT- normal tonsils, no exudates, no voice changes or drooling
- Neck- supple, mild neck swelling bilaterally, no lymphadenopathy, no crepitation
- CV- regular rate and rhythm
- Lungs- clear
- Abdomen- soft, nontender, nondistended

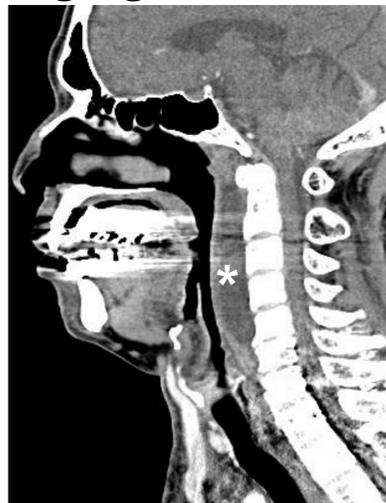
Pertinent laboratory data

- CBC: 9.6>14.4/31.9<171
- BMP: 135/4.2/100/26/15/1.11<89
- LFT: AST 17, ALT 19, AlkPhos 61, TBili 0.8, TProtein 7.4, Alb 3.1
- Coags: PT 12, INR 1.2, PTT 26
- Cardiac: Trop <0.02

Questions

1. How can you differentiate types of retropharyngeal fluid collections?
2. What underlying conditions could cause this presentation?

Imaging Results



Discussion

A CT neck study performed at an outside hospital initially reported a retropharyngeal abscess. A repeat CT neck with IV contrast performed at our institution described a retropharyngeal fluid collection (star) which was thought to represent simple sterile fluid rather than an abscess. The absence of an enhancing wall or capsule suggests that this was a reactive effusion rather than a mature abscess. The CT also showed complete absence of contrast filling of the right internal jugular vein and only partial filling of the left internal jugular vein with sharp cut-off (arrows). As this CT was performed in the venous phase, this findings is consistent with thrombosis of bilateral internal jugular veins. In light of this finding, the retropharyngeal effusion or pseudo-abscess was thought to be secondary to venous occlusion and associated venous hypertension.

Briefly, the retropharyngeal space is a potential space in the mid-line deep neck soft tissues located just posterior to the pharynx and anterior to the prevertebral space and separated from these regions by layers of fascia. Normally, this place is thin and does not contain significant structures other than lymph nodes. There are various causes for retropharyngeal effusions. Most commonly these are seen in patients with an upper respiratory infection such as pharyngitis or tonsillitis. In such cases it is important to distinguish an effusion from an abscess. Another cause for retropharyngeal effusion is acute calcific tendonitis of the longus colli muscle which is an uncommon idiopathic inflammatory condition. Venous occlusions are a less common cause for retropharyngeal effusions.

Differentiating the types of deep space fluid collections is important as their causes and treatments can vary extensively. Hoang et al. outline an approach for distinguishing deep space fluid collections by looking at fluid distribution, configuration and mass effect, the presence of enhancing rim, and ancillary findings (1).

	EDEMA	ABSCCESS	SUPPURATIVE NODE
DISTRIBUTION	Side to Side	Side to side	Unilateral
CONFIGURATION*	Rectangle/Bow Tie	Round/Ovoid	Round/Ovoid
MASS EFFECT	Mild	Moderate to Severe	Variable
RIM	None	Thick Enhancing**	Thick Enhancing
ANCILLARY FINDINGS	- Calcifications anterior to C1-C2 - Thrombus - Mass	- ENT infective signs - Trauma	- ENT infective signs - Trauma

* In axial view
** Phlegmon may not have rim

The causes of internal jugular vein thrombosis are numerous, but are similar to causes of thrombosis in other sites: recent trauma or surgery, malignancy, and underlying hypercoagulopathy from factor deficiency. There are a few unique causes unique to the internal jugular vein. Lemierre's syndrome refers to thrombophlebitis as a result of adjacent bacterial pharyngitis (2). The presence of a central venous catheter is another risk factor for internal jugular vein thrombus.

The patient in this case underwent CT scans to evaluate for underlying malignancy, which were initially negative. He followed up with hematology for coagulopathy workup which was unremarkable. After initial discharge from hospital he began to experience abdominal pain and hematuria, was found to have elevated LFTs and imaging consistent with cholecystitis. He underwent cholecystectomy and pathology was consistent with cholangiocarcinoma, ultimately metastatic. This previously occult malignancy is most likely the underlying etiology of the extensive deep vein thrombosis present in this patient, a phenomenon known as Trousseau's syndrome. The patient's symptoms of neck swelling and discomfort resolved shortly after starting anticoagulation.

Pearls

1. Fluid collections in the retropharyngeal space can be evaluated in terms of fluid distribution, configuration of fluid, extent of mass effect, presence of enhancing rim, and ancillary findings.
2. Differential diagnosis of patient with thrombosis of central veins should include occult malignancy, trauma, coagulopathy, neck infections.

References

1. Hoang JK, Branstetter BF 4th, Eastwood JD, Glastonbury CM. Multiplanar CT and MRI of collections in the retropharyngeal space: is it an abscess? AJR Am J Roentgenol. 2011 Apr;196(4):W426-32. doi: 10.2214/AJR.10.5116. Review. PubMed PMID: 21427307.
2. Leci-Tahiri L, Zherka-Saracini H, Tahiri A, Koshi A. Bilateral internal jugular vein thrombosis due to malignant tumor. J Med Case Rep. 2018 Feb20;12(1):42. doi: 10.1186/s13256-017-1556-0. PubMed PMID: 29458414; PubMedCentral PMCID: PMC5819279.