AMSER Case of the Month September 2023

25-year-old female with worsening neck pain

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LOMA LINDA UNIVERSITY
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AMSER

Patient Presentation

HPI: 25-year-old female with 3 days of worsening left sided neck pain and new odynophagia. Neck strain was suspected on outside c-spine x-ray performed one day prior, however treatment with a muscle relaxant provided no relief. No history of recent trauma, fever or neurologic deficit.

Past Medical History: Hypertension

Current Medications: None

Vital Signs: BP 167/114, Temp 97.8F, Pulse 84

Physical Exam: TTP along left lateral neck and c-spine

What Imaging Should We Order?

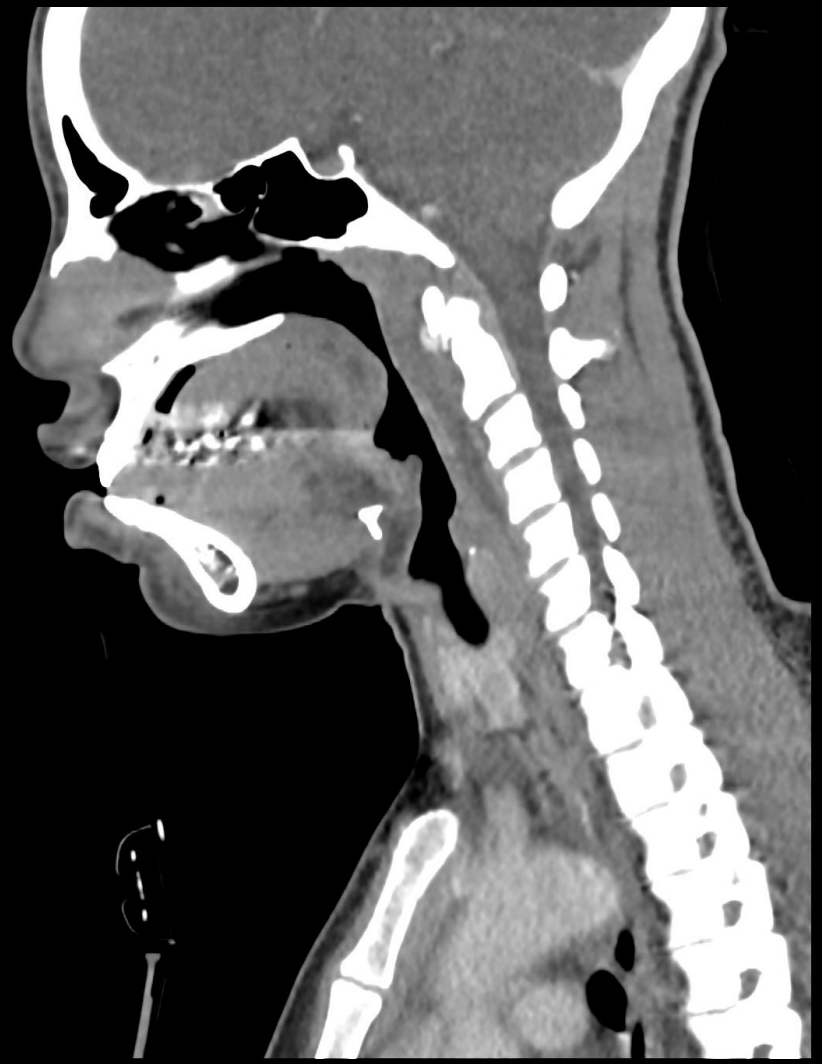
Select the applicable ACR Appropriateness Criteria

Variant 4: **Suspicion for infection with new or increasing nontraumatic cervical or neck pain or radiculopathy. Initial imaging.**

Procedure	Appropriateness Category	Relative Radiation Level
MRI cervical spine without and with IV contrast	Usually Appropriate	O
CT cervical spine with IV contrast	May Be Appropriate	☢☢☢
MRI cervical spine without IV contrast	May Be Appropriate	O
CT cervical spine without IV contrast	May Be Appropriate (Disagreement)	☢☢☢
MRI cervical spine with IV contrast	May Be Appropriate (Disagreement)	O
Radiography cervical spine	May Be Appropriate (Disagreement)	☢☢
CT cervical spine without and with IV contrast	Usually Not Appropriate	☢☢☢
FDG-PET/CT skull base to mid-thigh	Usually Not Appropriate	☢☢☢☢
Bone scan whole body with SPECT or SPECT/CT neck	Usually Not Appropriate	☢☢☢
CT myelography cervical spine	Usually Not Appropriate	☢☢☢☢
Gallium scan whole body	Usually Not Appropriate	☢☢☢☢
WBC scan whole body	Usually Not Appropriate	☢☢☢☢
CTA neck with IV contrast	Usually Not Appropriate	☢☢☢
Discography cervical spine	Usually Not Appropriate	☢☢
Facet injection/medial branch block cervical spine	Usually Not Appropriate	☢☢
MRA neck with IV contrast	Usually Not Appropriate	O
MRA neck without IV contrast	Usually Not Appropriate	O
Radiographic myelography cervical spine	Usually Not Appropriate	☢☢☢

This imaging modality was ordered by the ER physician

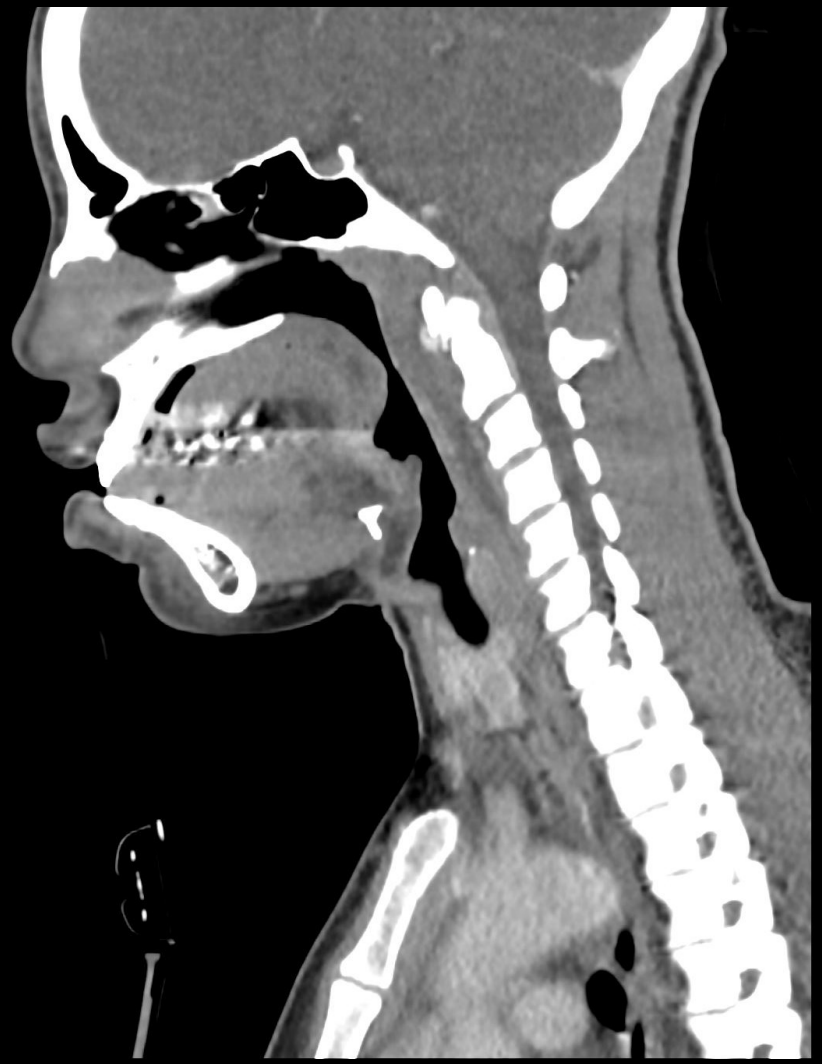
Findings (unlabeled)

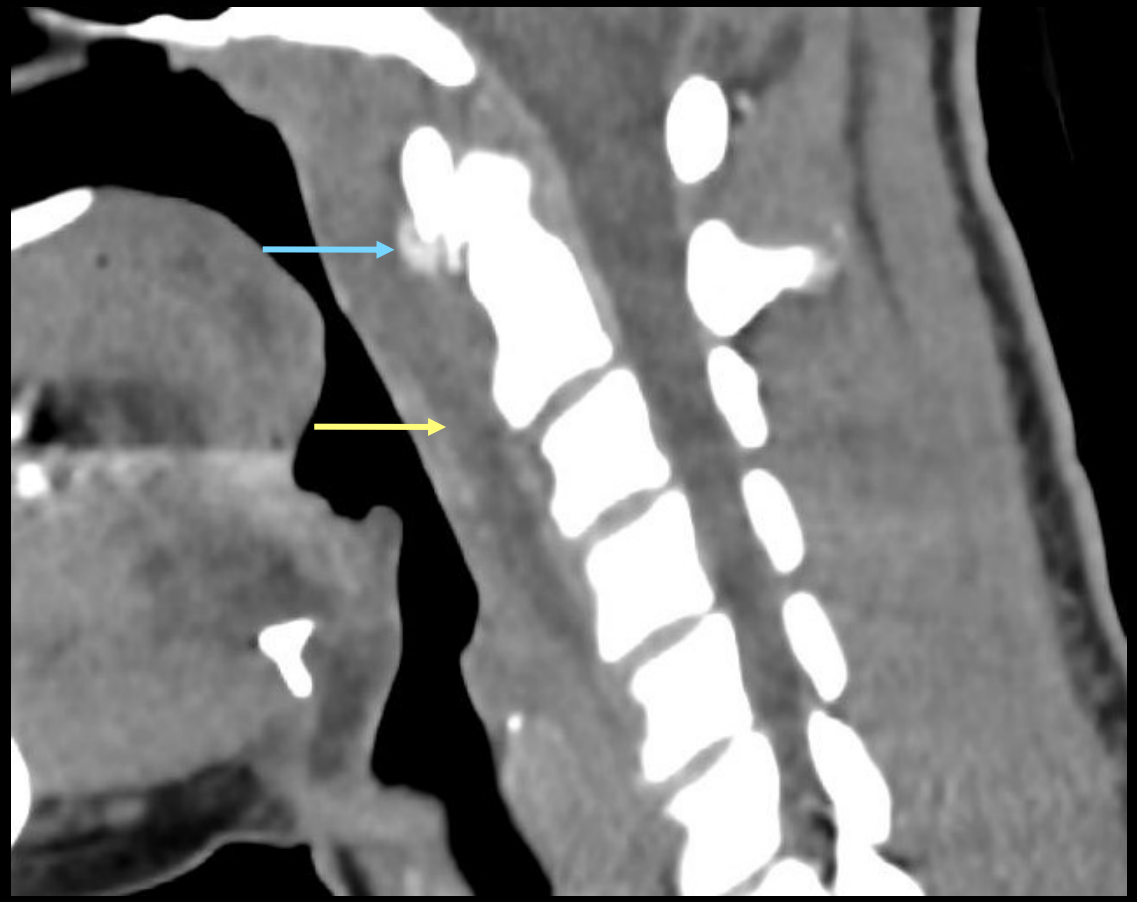


Findings: (labeled)

Retropharyngeal fluid/edema with focus of calcification along the anterior margin of the c1-2 articulation.

No associated contrast enhancement.





Final Dx:

Acute calcific tendinitis of the longus colli

Case Discussion

- Epidemiology
  - Acute calcific tendinitis of the longus colli is a rare, benign disease with an incidence of perhaps 1.31 per 100.000 person-years. Most commonly affecting people aged 30 to 70 years irrespective of gender.
- Etiology and pathophysiology
  - It is suspected that calcium deposition occurs in order to compensate for tendon weakness due to chronic factors such as repetitive trauma, ischemia, necrosis and degeneration of the longus colli tendon. Rupture and consecutive release of hydroxyapatite crystals cause an acute inflammatory response in the surrounding soft tissue.

Case Discussion

- Clinical Presentation
  - The most common symptoms include neck pain, neck stiffness, odynophagia. Mild leukocytosis and fever can also be present.
- Imaging Findings
  - Focal calcifications in the retropharyngeal space, almost exclusively at the C1-C3 level, along with soft tissue swelling, fluid collection and decreased attenuation of the longus colli muscle. These findings are best seen on CT and MRI, with calcifications best seen on CT and soft tissue edema/effusion best seen on MRI. An x-ray of the lateral cervical spine is less sensitive but might be sufficient to establish diagnosis if prevertebral calcification and soft tissue swelling are visible.

Case Discussion

- Differential Diagnosis
  - Clinical symptoms resemble more serious pathologies such as retropharyngeal abscess, cervical tumor, trauma or disc herniation.
  - Other conditions that can present with cervical calcifications include Calcium Pyrophosphate Dihydrate deposition disease and Diffuse Skeletal Hyperostosis. Fluid/edema in the retropharyngeal space can also be found in osteomyelitis, foreign body ingestion and Kawasaki disease.
  - Knowledge of characteristic features on imaging is crucial to avoid misdiagnosis and inadequate treatment.
- Treatment
  - NSAIDs and analgesics. Calcifications usually resolve within 2 weeks.

References:

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