Lemierre's Syndrome: Enhancing Early Diagnosis and Management Through Thoracic Imaging

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Background

- Lemierre's syndrome is a rare but important complication of bacterial pharyngitis or tonsillitis in otherwise healthy, young individuals, characterised by septic thrombophlebitis of the internal jugular vein (IJV).
- The inflamed and thrombosed IJV may shower emboli into the systemic circulation, which most commonly deposit in the lungs[1].
- Cross-sectional imaging plays a crucial role in early diagnosis by identifying IJV thrombosis and associated septic emboli.

Case Review

Day 0

- 29 female nurse presented to ED
- Fever, sore throat and neck swelling
- FNE by ENT team - left lateral hypopharyngeal wall swelling → tonsilitis
- Given IV antibiotics and IV fluids

Day 1

- Inflammatory markers continue rising despite antibiotics
- CT neck and thorax → Left superior peritonsillar space collection with ipsilateral thrombophlebitis involving the IJV. Associated multiple pulmonary infiltrates compatible with septic emboli.
- Collection aspirated by ENT and antibiotics amended

Day 4

- Clinical improvement
- Discharged with midline for OP antibiotics and anticoagulation

Figure 1: Timeline of patient admission.

ED: Emergency department; FNE: Flexible Nasendoscopy; ENT: Ear, Nose & Throat; IV: Intravenous; CT: Computed Tomography

Imaging Findings

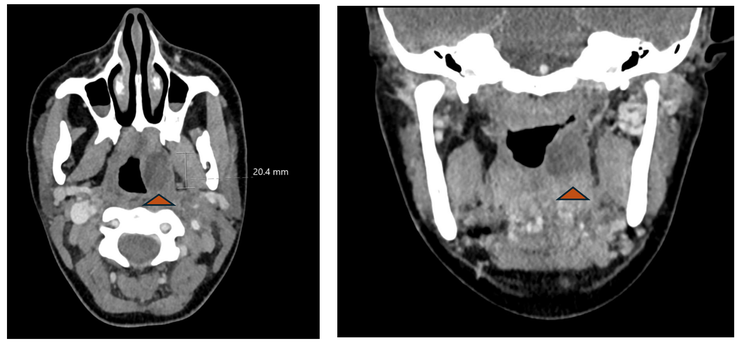

Figure 2 - Axial (left) and coronal (right) contrast-enhanced CT neck.
A 1.9 cm collection within the left superior peritonsillar space ( )

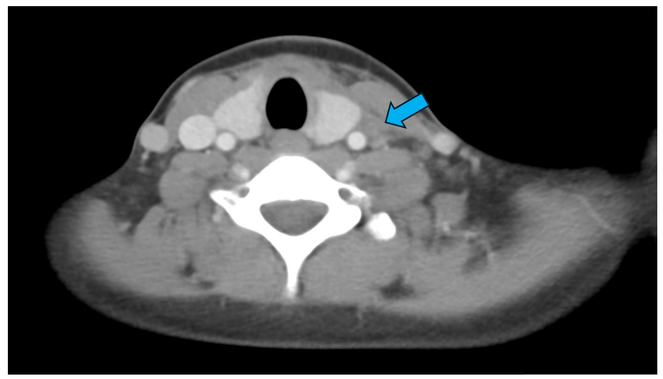

Figure 3 - Axial view contrast-enhanced CT neck at the level of the thyroid gland
The left internal jugular vein is thrombosed ( ), peripherally enhances and is associated with perivascular stranding suggestive of thrombophlebitis.

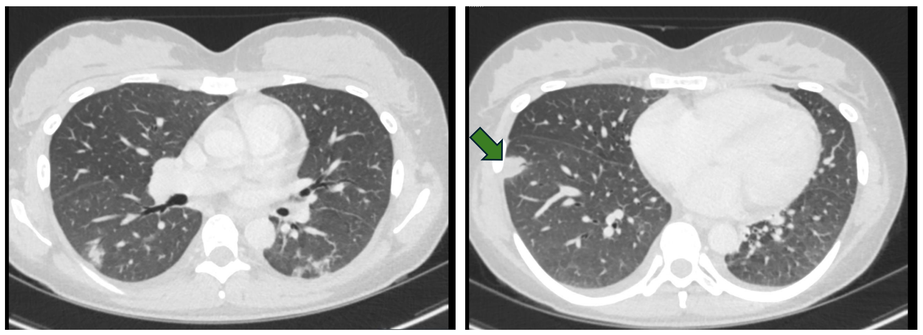

Figure 4 - Axial view contrast-enhanced CT thorax
Multiple peripheral foci of nodular consolidation with some surrounding ground glass opacification. The largest measured 20 mm ( ) within the right lower lobe. Findings are compatible with septic emboli.

Discussion

- Lemierre's syndrome can be an elusive diagnosis, as highlighted by this case where the patient did not exhibit respiratory symptoms and had a normal admission chest radiograph (Figure 4).
- The most common causative organism is Fusobacterium necrophorum[1], however 10% of cases have negative blood cultures, as in this case[2].
- A low threshold for thoracic imaging should be reserved in patients with atypical symptoms or increasing severity despite standard therapy.

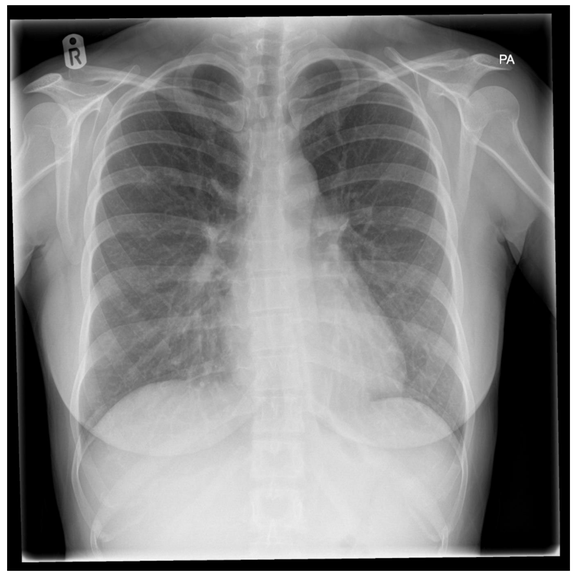

Figure 5 – Chest radiograph
Normal appearances.

Learning Points

- Lemierre's syndrome should be suspected in young patients with pharyngitis/ tonsilitis when the clinical picture is out of keeping with examination findings.
- Cross-sectional imaging of the head and neck is crucial in the early diagnosis and management of Lemierre's syndrome.

References

1 Allen BW, Anjum F, Bentley TP. Lemierre syndrome. InStatPearls [Internet] 2023 Jul 31. StatPearlsPublishing.
2 Righini CA, Karkas A, Tourniaire R, N'Gouan JM, Schmerber S, Reyt E, Atallah I. Lemierre syndrome: study of 11 cases and literature review. Head & neck. 2014 Jul;36(7):1044-51.