Lemierre's Syndrome in 15-year-old female

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INTRODUCTION

A 15-year-old female initially presented to her primary care physician with sore throat, fever, difficulty swallowing, and neck swelling. A rapid strep test was performed and was positive. A CT of the neck was ordered and demonstrated moderate enlargement of the tonsils bilaterally, but no evidence of abscess (**Image 1).**

Image 1. CT of the neck demonstrating bilateral tonsilar enlargement, but no abscess.

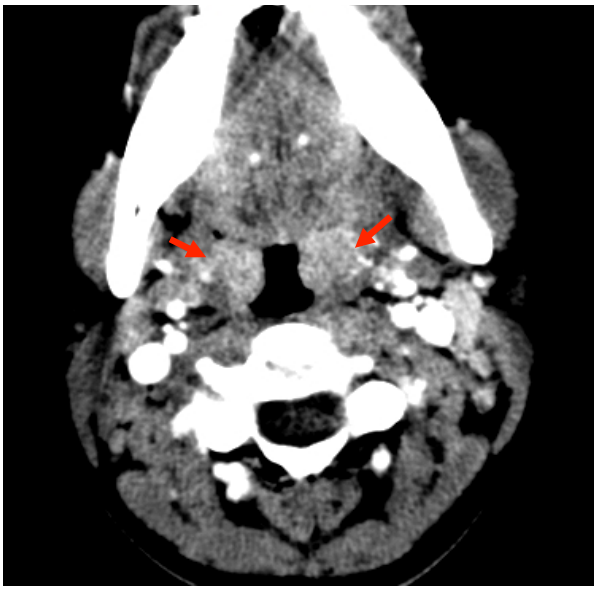
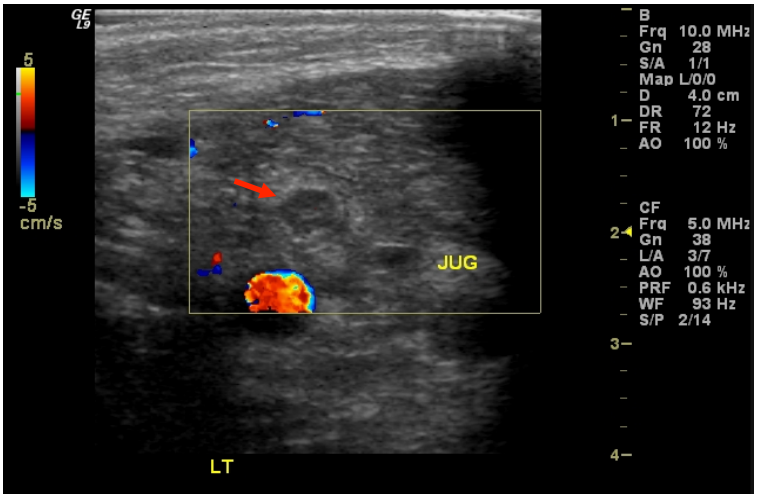


Image 2. Ultrasound of the neck demonstrating left internal jugular thrombosis.

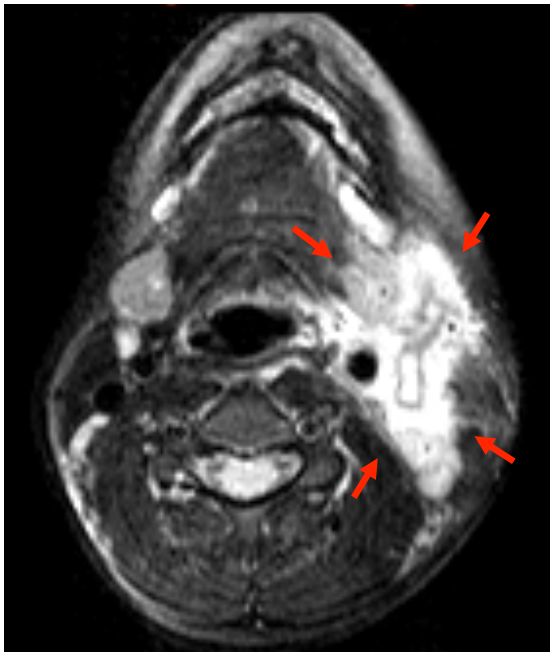


The patient was admitted to the hospital and started on clindamycin 900 mg q8h IV, with improvement. She was switched to oral clindamycin 600 mg q8h, discharged on hospital day three, and instructed to complete an 18-day course of antibiotics as an outpatient. Blood cultures obtained during the initial hospitalization were negative.

Three days following discharge, the patient returned to her primary care physician with continued sporadic fevers and increasing left neck pain. Physical exam demonstrated an asymmetrically swollen left neck. A neck ultrasound was also ordered and demonstrated left internal jugular thrombophlebitis (**Image 2**).

The patient was readmitted to the hospital. An MRI/MRA of the neck and face was ordered to further characterize the ultrasound findings and demonstrated thrombosis within the middle 3rd of the left internal jugular vein. There was severe soft tissue inflammation from the level of the left pterygoid musculature down to the level of C5/6. There was diffuse left sided cervical lymphadenopathy. The remainder of the vasculature throughout the neck was patent (**Image 3**).

Image 3. A T2 weighted image from an MRI/MRA of the neck demonstrating thrombosis of the left internal jugular vein and ipsilateral soft tissue inflammation.



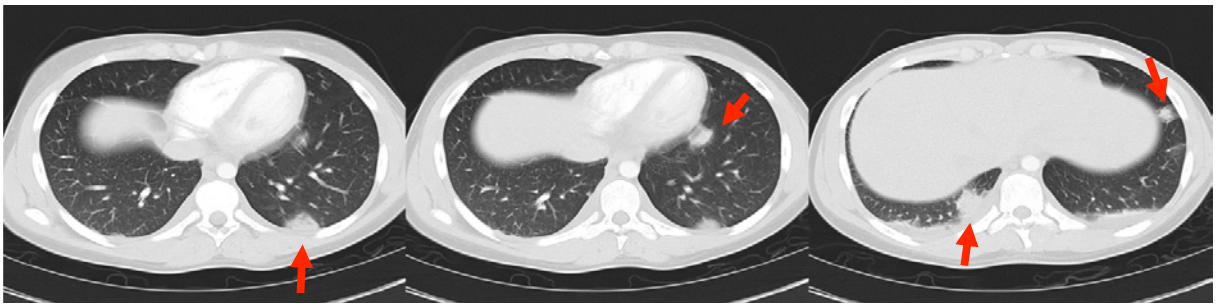


Image 4. CTPE study demonstrating septic emboli at the lung bases.

ENT, pediatric surgery and hematology/oncology teams were consulted for the left jugular vein thrombophlebitis. Medical management with Lovenox was initiated. An MRI/MRA of the head was obtained to rule out sagittal sinus thrombosis and was normal. A cardiac echo was obtained to rule out vegetation and was also normal.

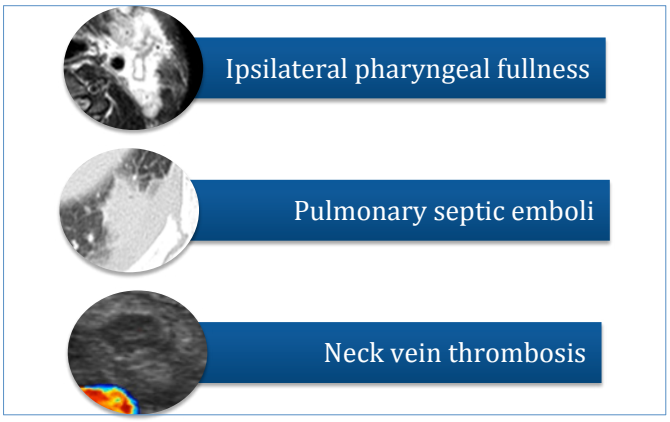
One day after admission to the hospital, the patient developed sudden severe chest pain. A CT pulmonary embolus study was ordered and demonstrated multiple nodular and wedge-shaped opacities in a peripheral distribution in both lower lobes, suggestive of septic emboli (**Image 4**).

DISCUSSION

Lemierre's syndrome (synonyms: Jugular vein suppurative thrombophlebitis, postanginal sepsis, necrobacillosis, and "Forgotten Disease") is a potentially lethal condition in a young and healthy patient population. The syndrome consists of pharyngitis progressing to jugular vein thrombophlebitis. Infection progresses from the oropharynx to the parapharyngeal or lateral pharyngeal space, typically in less than one week. The disease affects otherwise healthy young adults with a mean age of onset of 20 years. As such, the disease is frequently unsuspected and imaging findings often precede clinical suspicion. The disease was more common in the pre-antibiotic era, but there has been a reemergence of cases due to antibiotic resistance.

The clinical presentation of a young patient with persistent fever despite antibiotic therapy and neck pain should raise suspicion. Occasionally, the patient will present with tonsil abscess or even purulent drainage of the involved vessel. Septic emboli to the lung is a hallmark of the disease and occurs in 80-97% of cases.

Figure 1. Classic imaging triad of Lemierre's disease.



When the diagnosis is suspected in a patient older than 14 years, a CT of the neck with contrast is the imaging study of choice. For the pediatric population under 14 years of age, an ultrasound of the neck can be ordered first. Diagnosis is established with imaging demonstrating jugular vein thrombosis in the appropriate clinical setting. The classic imaging triad, as present in the case above, consists of 1) ipsilateral pharyngeal fullness, 2) pulmonary septic emboli, and 3) neck vein thrombosis (**Figure 1**).

Patients may have metastatic infection elsewhere and the clinician should be aware of empyema, septic arthritis, and/or osteomyelitis as possible complications. Intracranial complications include meningitis, abscess, and cavernous sinus thrombosis. Additional diagnostic studies should be tailored to the signs and symptoms of these manifestations.

Treatment consists of antibiotics for at least 4 weeks. The benefits of anticoagulation and surgery are uncertain, but are frequently employed. Mortality from the disease remains at 5-8%.

References

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