

# To treat or not to treat?

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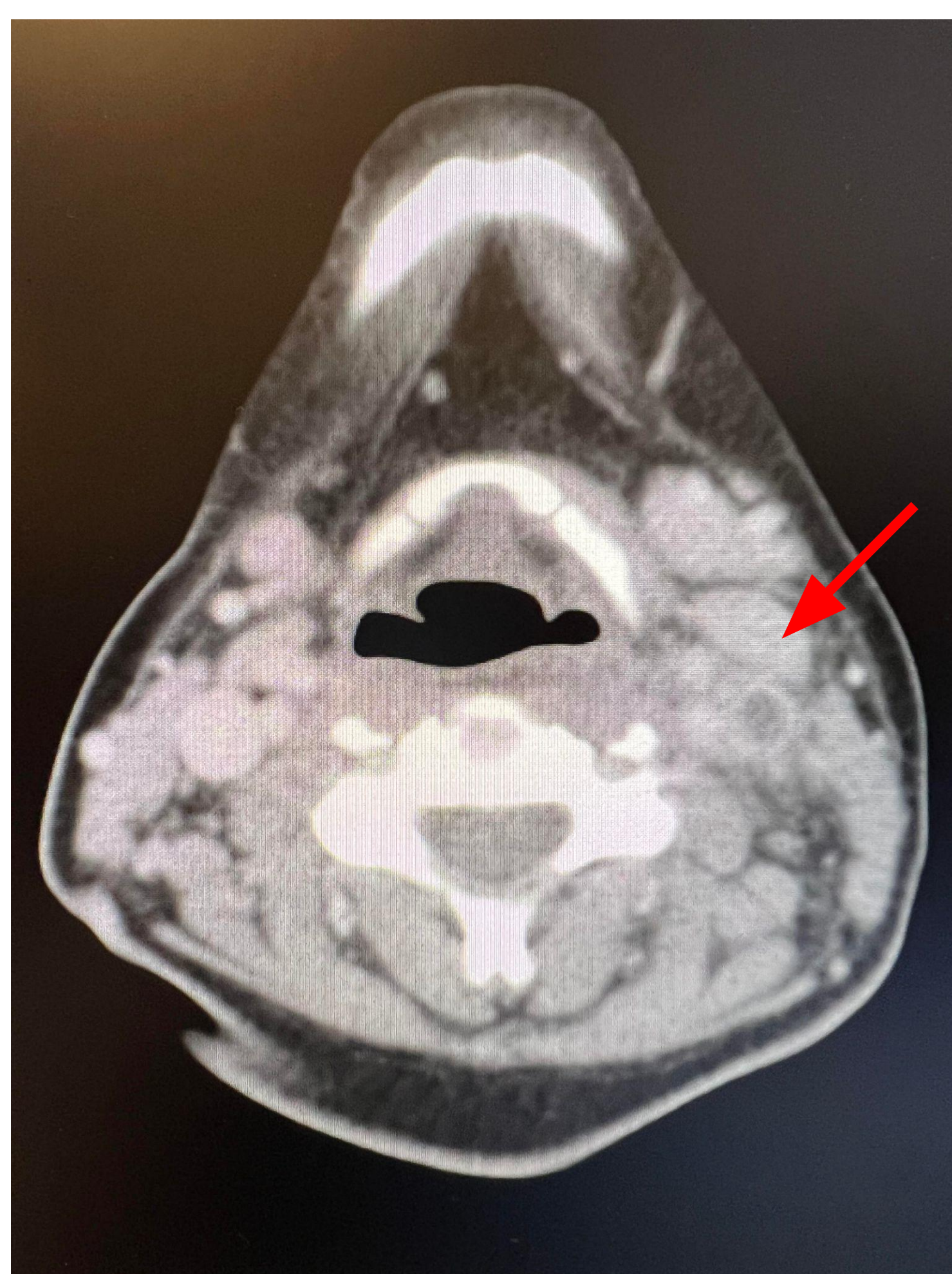
## ABSTRACT

### INTRODUCTION:

Lemierre syndrome is a condition where a septic thrombophlebitis develops in the internal jugular vein, usually secondary to a *Fusobacterium* infection. This condition can be complicated by septic emboli, hematogenous spread, or even direct extension of the thrombophlebitis, which can rarely present as a cavernous vein thrombosis (CVT). COVID-19 is another infection that predisposes to higher rates of thromboses, including a cavernous vein thrombosis. Depending on the etiology, treatment of cavernous vein thrombosis sometimes varies.

### CASE:

A 23-year-old woman presented to the ED for the fourth time in a week with worsening left-sided neck pain, headaches, nausea, and vomiting. She tested positive for COVID-19 one week prior to the onset of these symptoms, but never developed a fever, chills, or cough. Her exam on arrival was notable for a tender left-sided neck mass, with CT of the neck revealing a left pharyngeal abscess and an internal jugular (IJ) vein thrombosis, concerning for Lemierre syndrome. Blood cultures were promptly collected, and she was started on broad spectrum antibiotics for empiric coverage of typical anaerobes associated with Lemierre syndrome.



Arrow points to the left pharyngeal abscess identified on the patient's CT of the neck

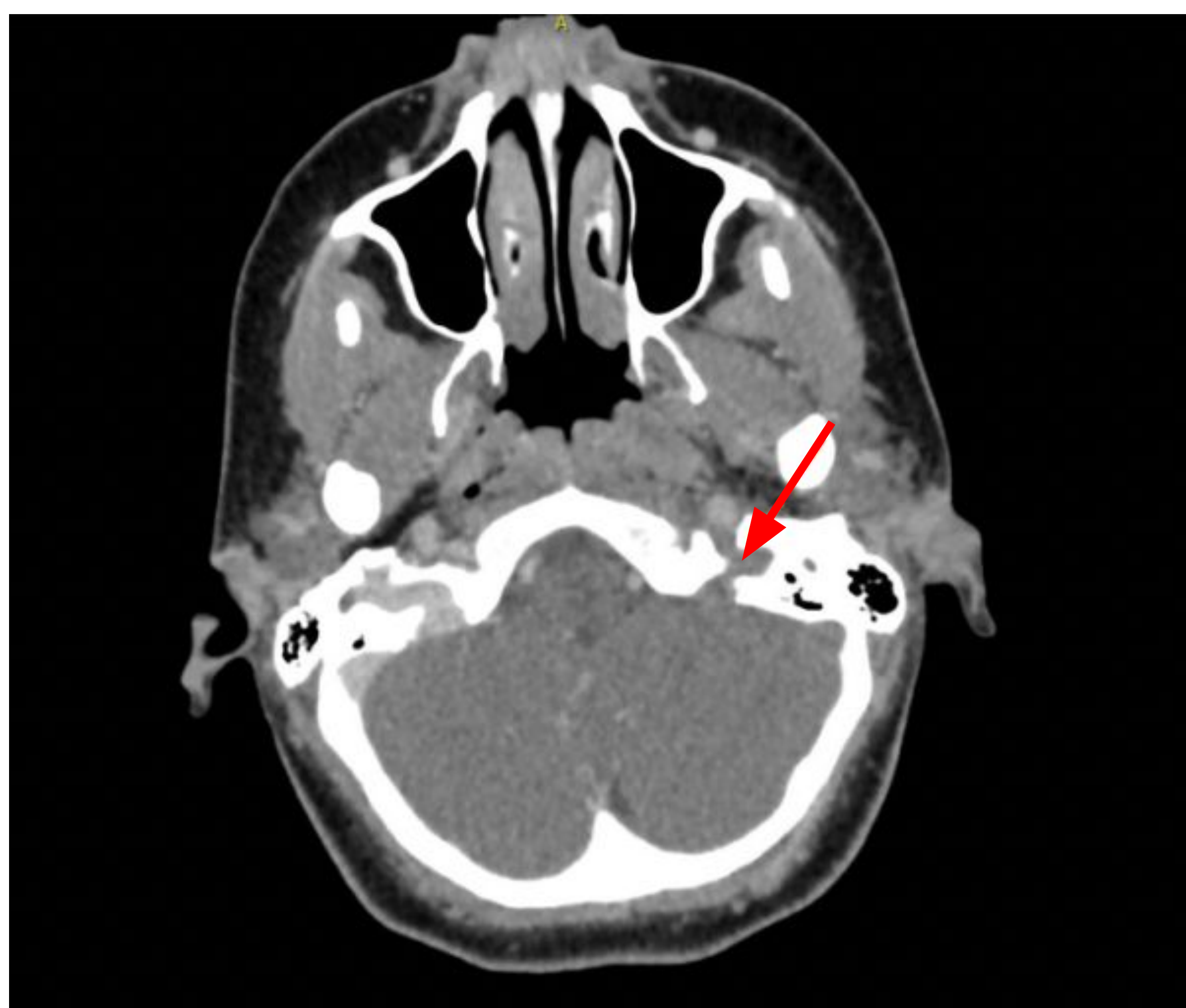
### CASE (Continued):

Her CT of the neck also revealed signs of extending thrombus in the left sigmoid sinus, and thus CTA of the head and neck was obtained which confirmed thrombus in both the left sigmoid sinus and distal portion of the transverse venous sinus. The decision was made to start therapeutic anticoagulation with a heparin drip.

Blood cultures eventually confirmed suspected *Fusobacterium* infection, and after receiving intravenous antibiotics for several days, the patient was discharged home on oral antibiotics and transitioned to a direct-acting oral anticoagulation.

### DISCUSSION:

Management of a cavernous sinus thrombosis is typically treated with prompt initiation of therapeutic anticoagulation, especially when it is associated with a traditional hypercoagulable state, such as infection with COVID-19. However, when thrombosis is thought



### DISCUSSION (Continued):

to be secondary to a septic emboli or thrombophlebitis, such as in this case of Lemierre syndrome, guidelines vary on recommendations.

Generally, it is recommended that cavernous sinus thrombosis presenting concurrently with Lemierre syndrome be treated with both antibiotics and therapeutic anticoagulation, though some studies have shown improvement in symptoms and thrombus burden with antibiotics alone.

### SUMMARY:

- Treatment for cavernous sinus thrombosis typically entails prompt anticoagulation
- Guidelines vary for treatment of cavernous sinus thrombosis secondary to septic emboli or thrombophlebitis, which can be seen in Lemierre syndrome



Two snapshots from the patient's CT angiography of the head and neck that demonstrate a thrombus in the left sigmoid sinus and distal end of the transverse venous sinus, which is from direct extension of left internal jugular vein thrombosis.