

# Comments on From a sore throat to Lemierre syndrome. A case report and literature review

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Dear Editor,

A recent publication by Drei *et al.*<sup>1</sup> discusses a case involving a young male patient diagnosed with Lemierre Syndrome (LS), who was successfully treated with prolonged antibiotic therapy and anticoagulants without the need for surgery, resulting in a complete clinical recovery. The article provides a comprehensive overview of the epidemiology, aetiology, and treatment options for LS. It highlights the concerning link between a patient's young age and the potential for severe complications, which could lead to a fatal outcome if diagnosis and treatment are delayed.

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We would like to share a similar experience to underscore the critical role of emergency doctors in the early diagnosis and treatment of LS, which is essential for preventing fatal consequences.

Recently, we diagnosed LS in a 27-year-old male patient who presented to our emergency department with fever, sore throat, and neck pain persisting for 4 days, unresponsive to NSAIDs. He had minimal trismus and a left peritonsillar swelling with initial fistulisation. Portable endoscopy showed moderate medialization of the left lateral oropharyngeal wall, bulging of the left hemipalate, and a normal larynx. Exploratory punctures at several sites yielded purulent material. A color Doppler ultrasound (US) of the neck was immediately performed, revealing complete thrombosis of the left internal jugular vein with normal flow in the homolateral subclavian vein (video 1). A total-body CT scan with contrast confirmed the rhino-pharyngeal abscess (Figure 1) with the thrombosis of both left internal and external jugular vein (Figure 2) and revealed septic emboli in both lungs (Figure 3). An MRI of the neck ruled out spondylodiscitis and osteomyelitis. Colour Doppler echocardiography excluded endocarditis and pericardial effusion. HIV, HCV, HBV, and tuberculosis infections were excluded. On admission, laboratory tests showed neutrophil leucocytosis (WBC 20,270/mm<sup>3</sup>, neutrophils 92%), slight thrombocytopenia (84,000/mm<sup>3</sup>), and increased values of C-reactive protein (44 mg/dL, normal value <0.5), procalcitonin (23 ng/mL), D-dimer (62,000 ng/mL), and transaminases (AST 41 U/L, ALT 39 U/L, normal values 10-37). Empiric antibiotic therapy with piperacillin/tazobactam (4.5 g IV q6h) and subcutaneous anticoagulation with low molecular weight heparin (100 U/Kg q12h) were started immediately. After 12 hours, the blood cultures resulted positive for multisensitive *Fusobacterium necrophorum* and *nucleatum*.

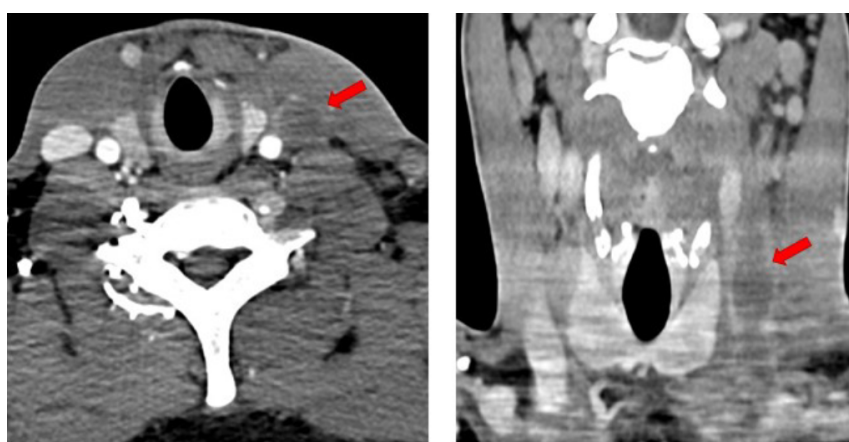
The patient's clinical course showed progressive improvement without severe complications such as pleural empyema, pulmonary abscesses, or mediastinitis. Surgical treatment, mechanical ventilation, or vasoactive agents were not necessary. The patient was discharged after 18 days of recovery, prescribed oral amoxicillin/clavulanate (875/125 mg, one tablet every 8 hours) and edoxaban (60 mg, one tablet daily). The follow-up CT scans of the neck and chest, performed 2 and 3 weeks later, respectively, showed a complete resolution of the abscess with the partial recanalization of the left internal jugular vein and a remarkable reduction in pulmonary septic emboli. Consequently, antibiotic therapy was discontinued, while oral anticoagulant was continued due to persistent jugular vein thrombosis with partial recanalization observed on US. Laboratory tests showed normal full blood counts, hepatorenal function, and C-reactive protein levels.

We would like to emphasize three key points regarding the role of emergency doctors in the diagnosis and management of patients with LS.

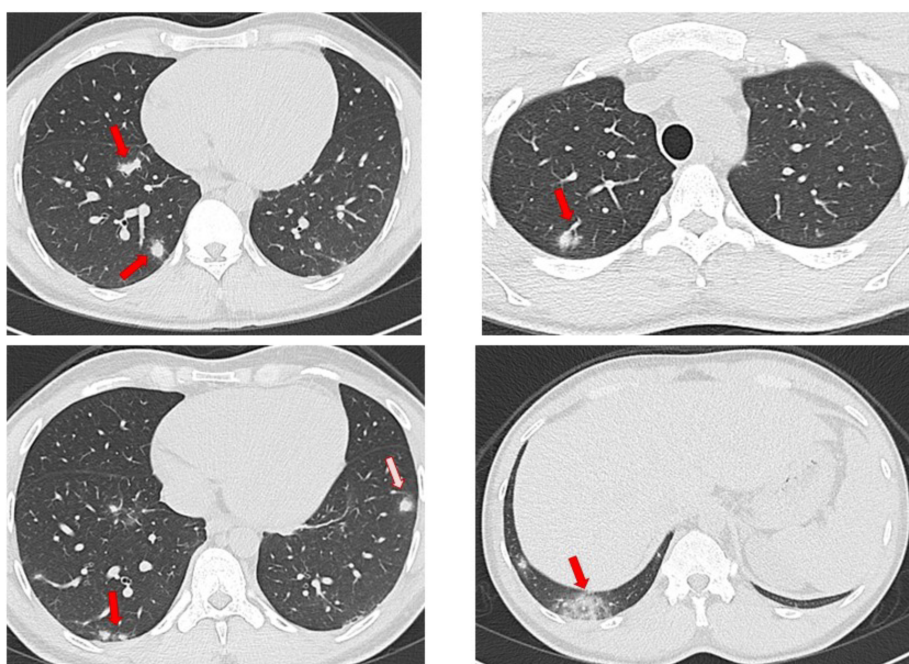
First, it is crucial to promptly identify *Fusobacterium necrophorum* for appropriate antibiotic treatment. We strongly recommend alerting the laboratory for the identification of this pathogen, as it is not routinely detected - particularly in the pharyngeal swabs - and blood cultures could result false negatives unless



**Figure 1.** CT scan of the neck showing rhino-faryngeal abscess (red arrows).



**Figure 2.** CT scan of the neck showing complete thrombosis of the left jugular vein (red arrows).



**Figure 3.** Chest CT scan with contrast showing septic emboli in both the lungs (red arrows).

a direct PCR method is used.<sup>2</sup>

Second, because septic emboli can spread to various organs, including the brain, lungs, kidneys, and heart, a brain and total-body CT scan with contrast is imperative in all cases. We are aware that the brain involvement is rare, but over 10% of the patients suffer from permanent neurological sequelae,<sup>3</sup> which can include cranial nerves and limb paresis, blindness, and decreased visual acuity. Given this evidence, a comprehensive neurological evaluation is essential upon admission to the emergency department and should be repeated throughout the recovery process.

Finally, as emergency doctors, we recommend using bedside US to investigate possible jugular vein thrombosis in all young patients presenting with pharyngotonsillitis. We believe that the incidence of LS is underestimated due to incomplete evaluations. Therefore, assessments should always include neck color Doppler US to ensure early diagnosis of vein thrombosis. This approach can not only help to treat LS correctly but also prevent the progression from a localized infection to multiorgan failure, which has a high mortality rate.

In conclusion, emergency doctors should always consider LS when evaluating a young patient with an oropharyngeal infection.

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## References

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### Supplementary Materials

*Video 1. US performed at bedside on admission in the emergency department showing a left jugular vein thrombosis.*