

What a Pain in the Neck, Complicated Lemierre's Syndrome

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Introduction

- Lemierre's syndrome (LS) is an uncommon complication of pharyngitis that results in thrombophlebitis of the ipsilateral internal jugular vein (IJV) [1,4].
- Incidence ranges between 0.8-1.5 cases in a million and typically afflicts adolescents and young adults [1].
- Death rates prior to the introduction of antibiotics reached 90%, whereas mortality rates now are 4-22% [1-3].
- LS is characterized by pharyngitis with localized neck pain and sepsis associated with organisms from the oropharynx.
- Major organism is *Fusobacterium necrophorum* (FN), but can be caused by others, such as *Pneumococcus*, *Proteus*, *Bacteroides*, or polymicrobial [1,2].
- FN is difficult to culture and can take 6-8 days to grow and cultures can be falsely negative [1,3].
- Treatment is typically with metronidazole with a penicillin for 3-6 weeks.
- Anticoagulation is controversial with possible benefit by preventing embolization; however, there is no evidence of a positive effect [1,2].

Case Description

- 23 yo male initially presented to the ED with pyrexia, malaise, and pharyngitis for the past three days.
- Returned three days later with persistent fever and new-onset pleuritic flank pain, dyspnea, and bloody sputum.
- Temperature was 100.2 °F, blood pressure 100/61, pulse 99, respiratory rate 41.
- In distress with posterior oropharyngeal erythema, enlarged tonsils, and bilateral tender submandibular lymphadenopathy
- Labs significant for: WBC 3.5/uL, Platelet 45/uL, Creatinine 1.6 mg/dL, C-reactive protein 265 mg/dL, Procalcitonin 5.13 ng/mL.
- CT scan with contrast of the neck shown in figures 1-3.
- Intubated due to refractory hypotension and tachypnea due to septic shock with gram negative rod bacteremia
- Started Metronidazole and Piperacillin/Tazobactam with heparin anticoagulation
- Blood cultures grew *Fusobacterium* species.
- Abscess drainage was not indicated as he was improving.
- Developed new onset pleuritic chest pain, dyspnea, and fever
- CT scan of the chest shown in figures 4-5.
- Anticoagulation was not restarted as repeat imaging demonstrated no new extension of intramural thrombus and improving clinical status after a thoracentesis.
- On discharge, patient was put on amoxicillin/clavulanate and Metronidazole for 8 weeks.

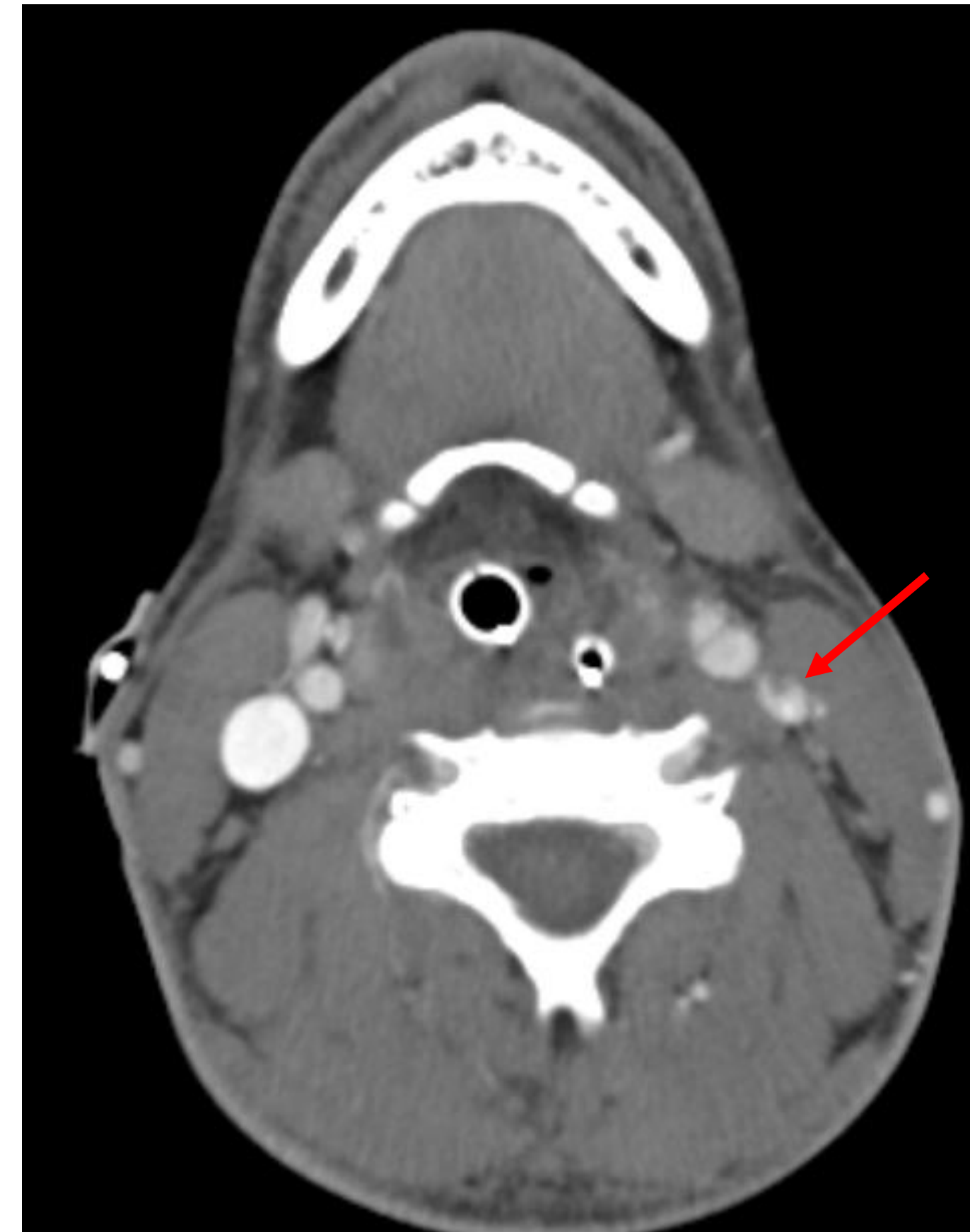


Figure 1. CT of the neck with IV contrast on axial image showing a filling defect in the left IJV (arrow) that is consistent with an intraluminal thrombus.

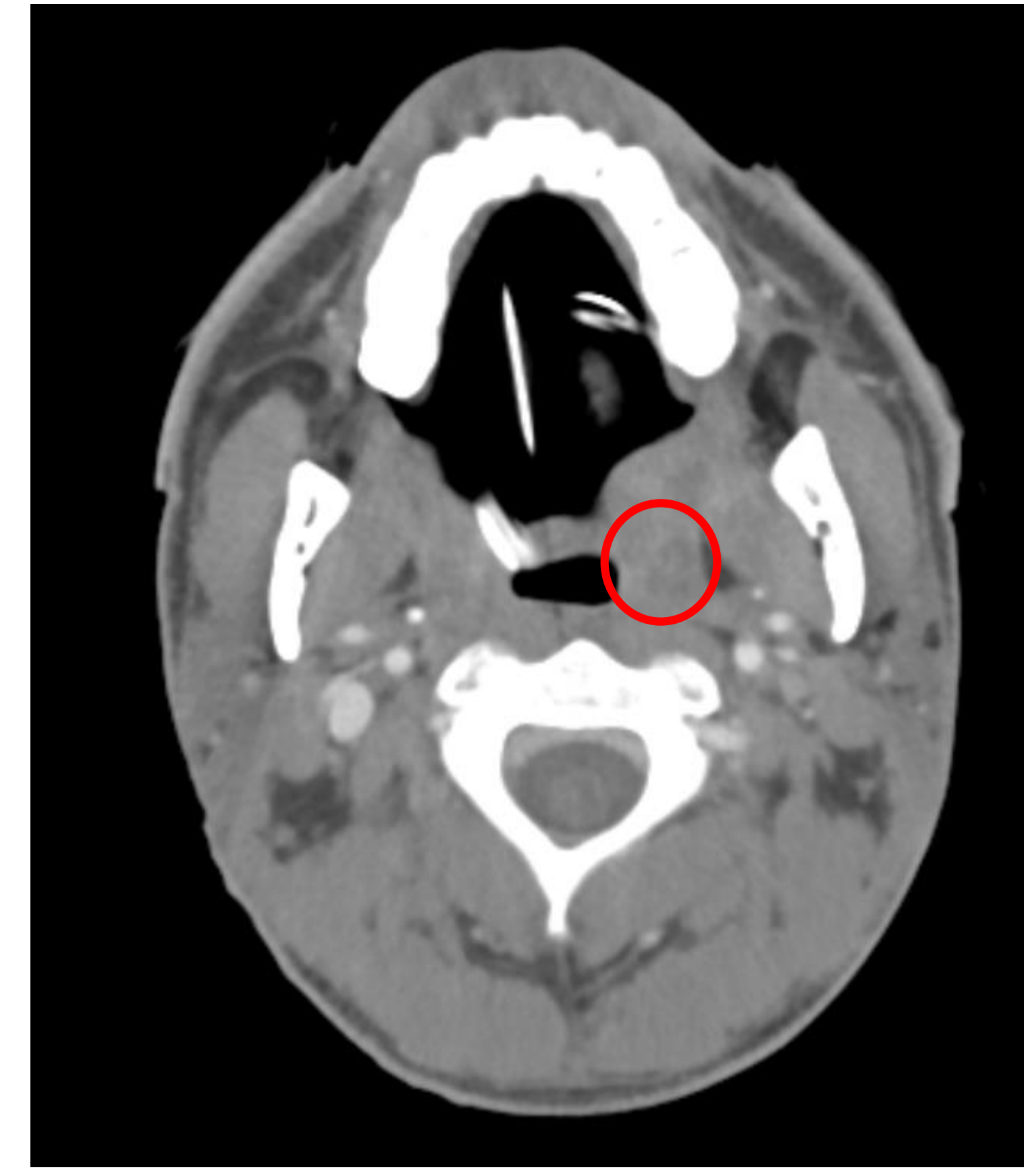


Figure 2. In the left parapharyngeal space there is a rim-enhancing collection (measuring 8.2mm x 10.7mm) (red circle), suggestive of a peritonsillar abscess.

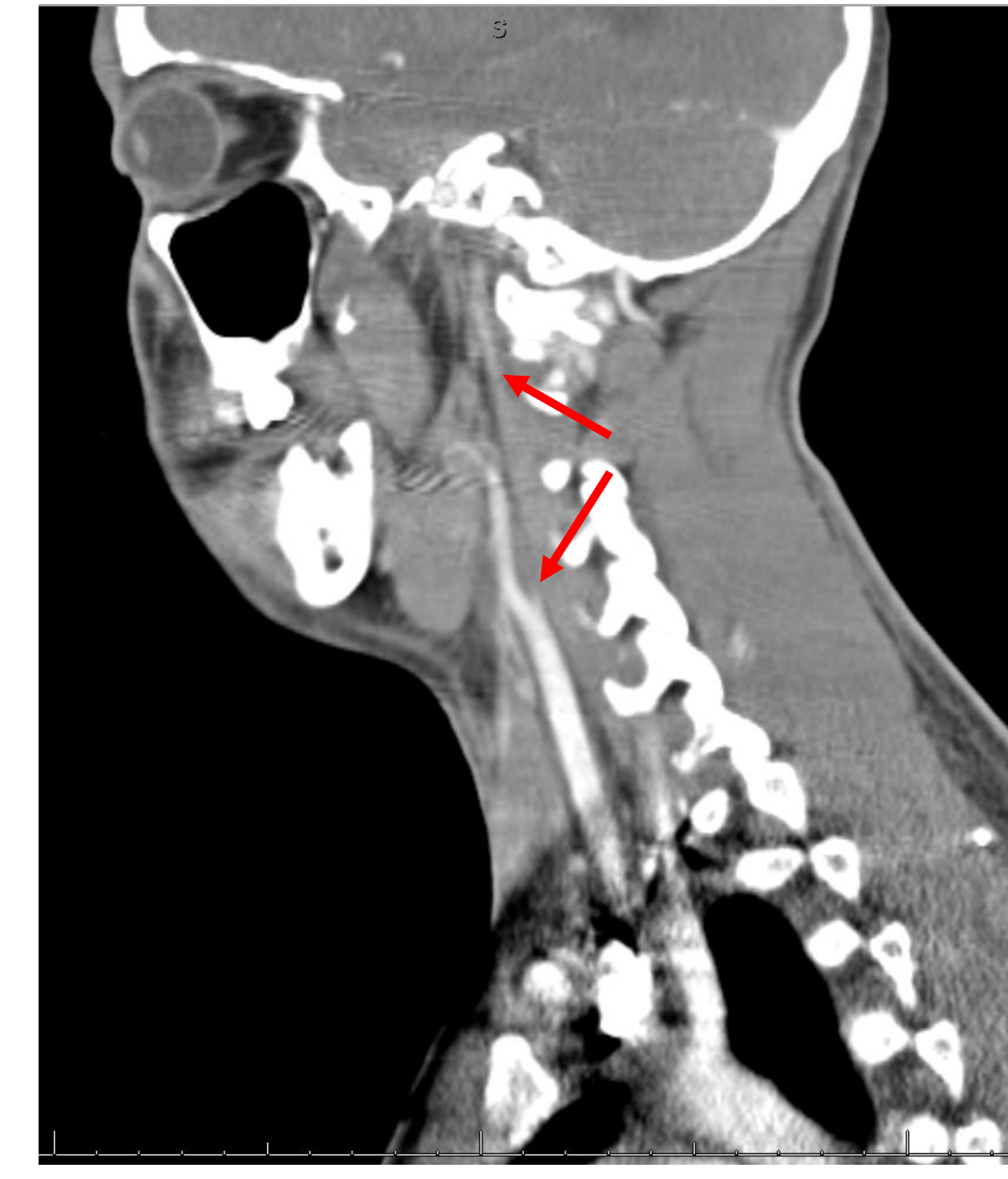


Figure 3. Sagittal image demonstrating left IJV intramural thrombus filling defect with no opacification from the mid- to upper level (arrows showing filling defect).



Figure 4. Peripheral pulmonary nodule showing cavitation compatible with septic pulmonary emboli (arrow).

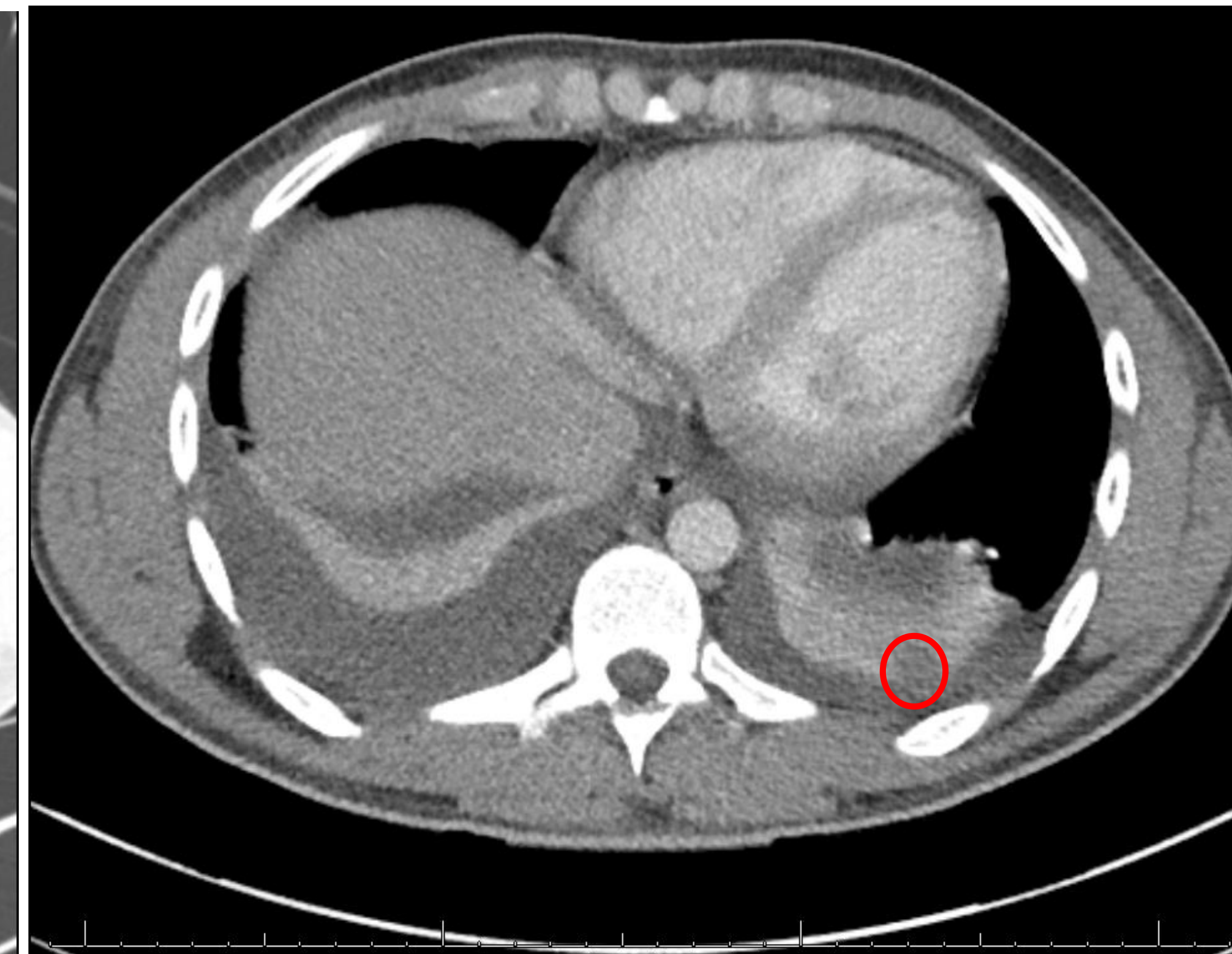


Figure 5. Bilateral pleural effusion with low attenuation (11.6mm x 11.6 mm) hypodensity (red circle) demonstrating developing ischemia from septic emboli.

Discussion

- LS is an uncommon complication of pharyngitis that can have devastating consequences if not considered in patients who appear toxic on initial presentation.
- Here the patient with left IJV thrombophlebitis with subsequent septic pulmonary emboli needed a thoracentesis and thoracostomy tube.
- Controversy about the epidemiology of LS as there is a concurrent rise in its incidence with the decrease in antibiotic use, unless for Group A *Streptococcus*-proven pharyngitis [4].
- In a study of college-aged patients, 11% of pharyngitis was attributed to *Fusobacterium necrophorum* [4].
- Controversy regarding anticoagulation in LS.
- Here, anticoagulation was maintained in the ICU; however, when the patient complained of acute onset pleuritic chest pain there was no evidence of intramural thrombus extension, so anticoagulation was not restarted.
- Anticoagulation was not studied in these cases, but is reserved for those with a refractory course or underlying thrombophilia [4,5].
- Metronidazole expressed good penetration into tissue and takes 6 weeks for adequate fibrin clot penetration, and Penicillins are used to cover for mixed infections [1,5].
- Although LS is rare, it merits recognition for its rapid course.
- Once its pattern of illness is recognized, it is remarkably characteristic.
- The pattern being subacute onset of pyrexia and rigors in a patient with history of pharyngitis with associated jugular vein thrombosis and metastatic lesions [5].

References

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