

Breaking Boundaries: Reimagining the definition of Lemierre syndrome in an Irish context

K O'Brien¹, C White², C McCoy², O Buckley³, M O'Sullivan³, S Waqas^{1,4}

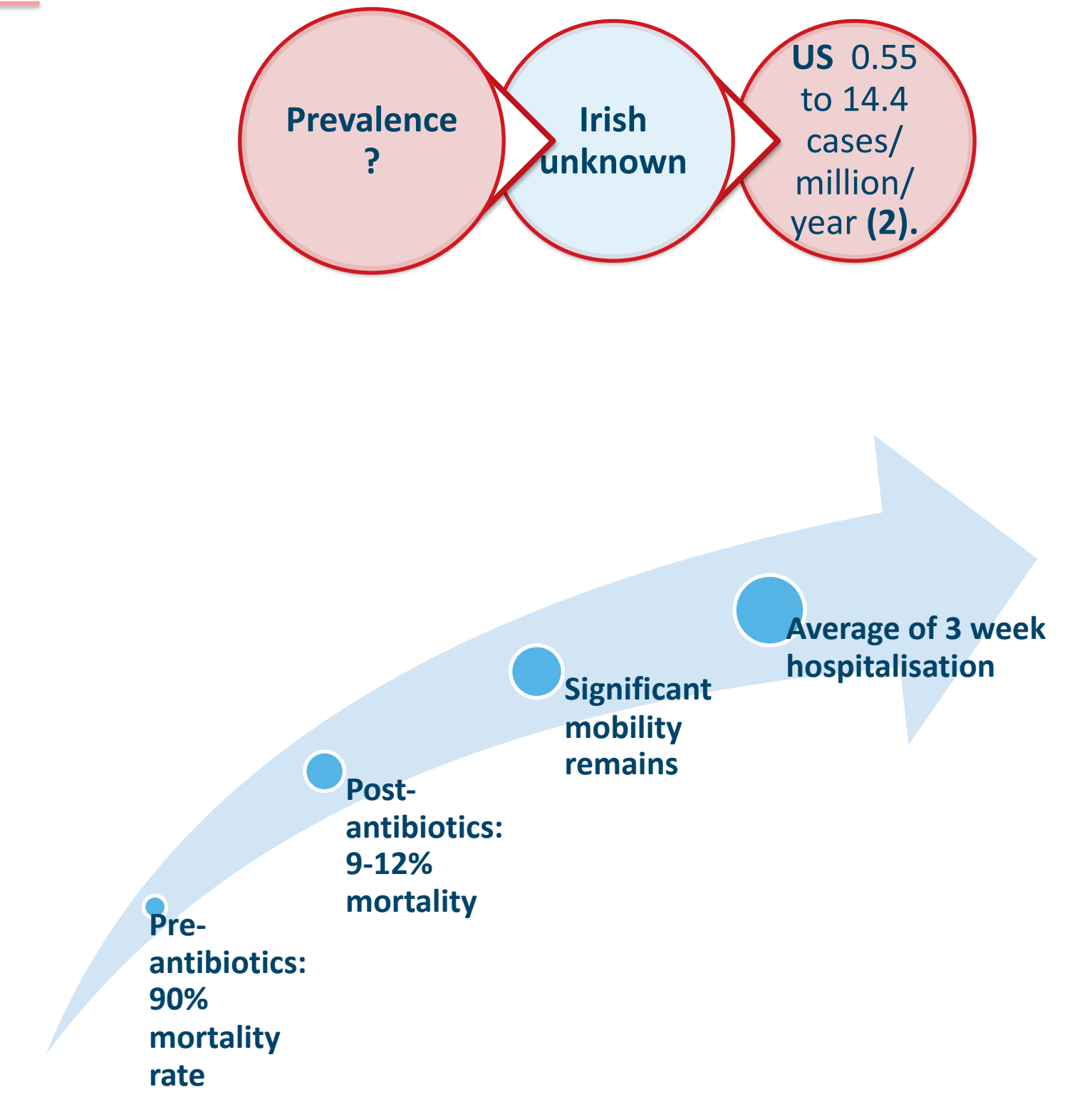
Departments of 1. Infectious Diseases2. Nephrology and 3. Radiology, Tallaght University Hospital 4: Clinical Medicine TUH, School of Medicine, Trinity College Dublin, Dublin, Ireland.



Tallaght University Hospital
Ospidéal Ollscoile Thamhlachta
An Academic Partner of Trinity College Dublin

Introduction:

Lemierre syndrome (LS) was first described in 1936 by Andre Lemierre who noted the presence of oropharyngeal abscess with IJV (internal jugular vein) thrombophlebitis and septic emboli (1). LS is typically attributed to the gram negative anaerobic bacteria *Fusobacterium necrophorum*; however, other organisms such as *Streptococci*, *Staphylococci* and *Klebsiella* species have been noted as etiological agents in the literature (3). This case report underscores the importance of considering LS without radiological evidence of IJV thrombophlebitis and in the presence of other diagnostic features.



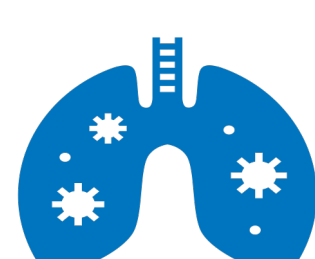
Typical presentation



Sore throat

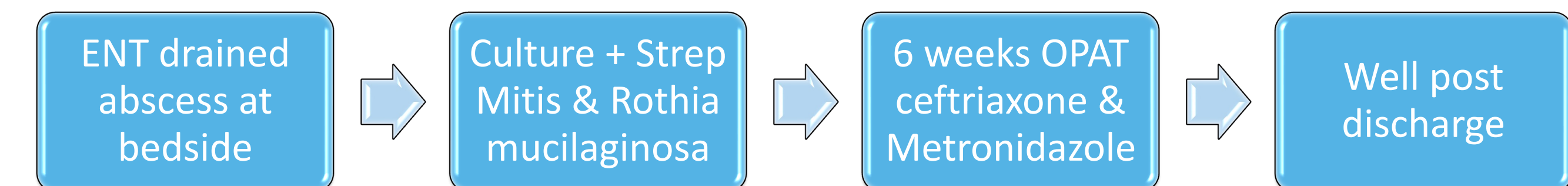


Fever



Symptoms associated with Septic emboli

Patient outcome:



Discussion:

- Lemierre syndrome (LS) is a relatively rare condition in the post-antibiotic era, occurring primarily in young, otherwise healthy patients.
- While the definition of LS was established in 1936, a limited number of recent studies have expanded the definition to encompass patients without radiological evidence of IJV thrombophlebitis (2,4,5).
- Given that the management and outcomes of patients with or without evidence of IJV thrombosis or thrombophlebitis is similar and largely unaffected by whether they receive anticoagulation (6,7); an overly stringent definition may be detrimental to patient outcomes by delaying diagnosis and management.
- The presentation of LS may differ in modern populations with widespread antibiotic use (4).

Conclusion

This case highlights the need for clinicians to consider a broad differential for cavitating lung lesions such as Lemierre syndrome (LS) in a young patient. The absence of IJV involvement on imaging should not exclude LS and given the rise in antimicrobial resistance worldwide this once rare disease may become more prevalent in the general population.

Author email: obriek18@tcd.ie
Patient written consent obtained prior to publishing

Case report

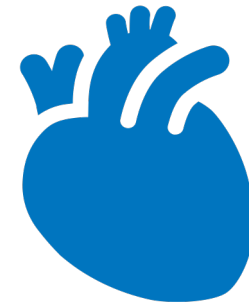
21 male with no previous medical history presented with a 10 day history of fever, severe unilateral pleuritic chest pain, 5kg weight loss, hemoptysis and odynophagia. Previously attended his GP and completed a 5 day course of amoxicillin with no improvement. Clinically, a large inflamed right sided tonsil with white exudate was noted. Lymph node examination noted a painful large right submandibular node. Respiratory examination revealed decreased air entry bibasally.



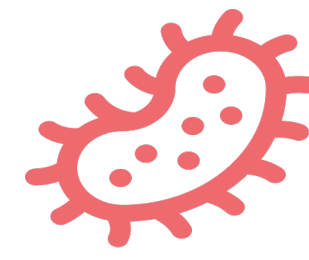
CRP 174, deranged LFTs (GGT 182, ALP 170)



D dimer and Fibrinogen were raised 0.82 ug/ml and 6.17 g/l,

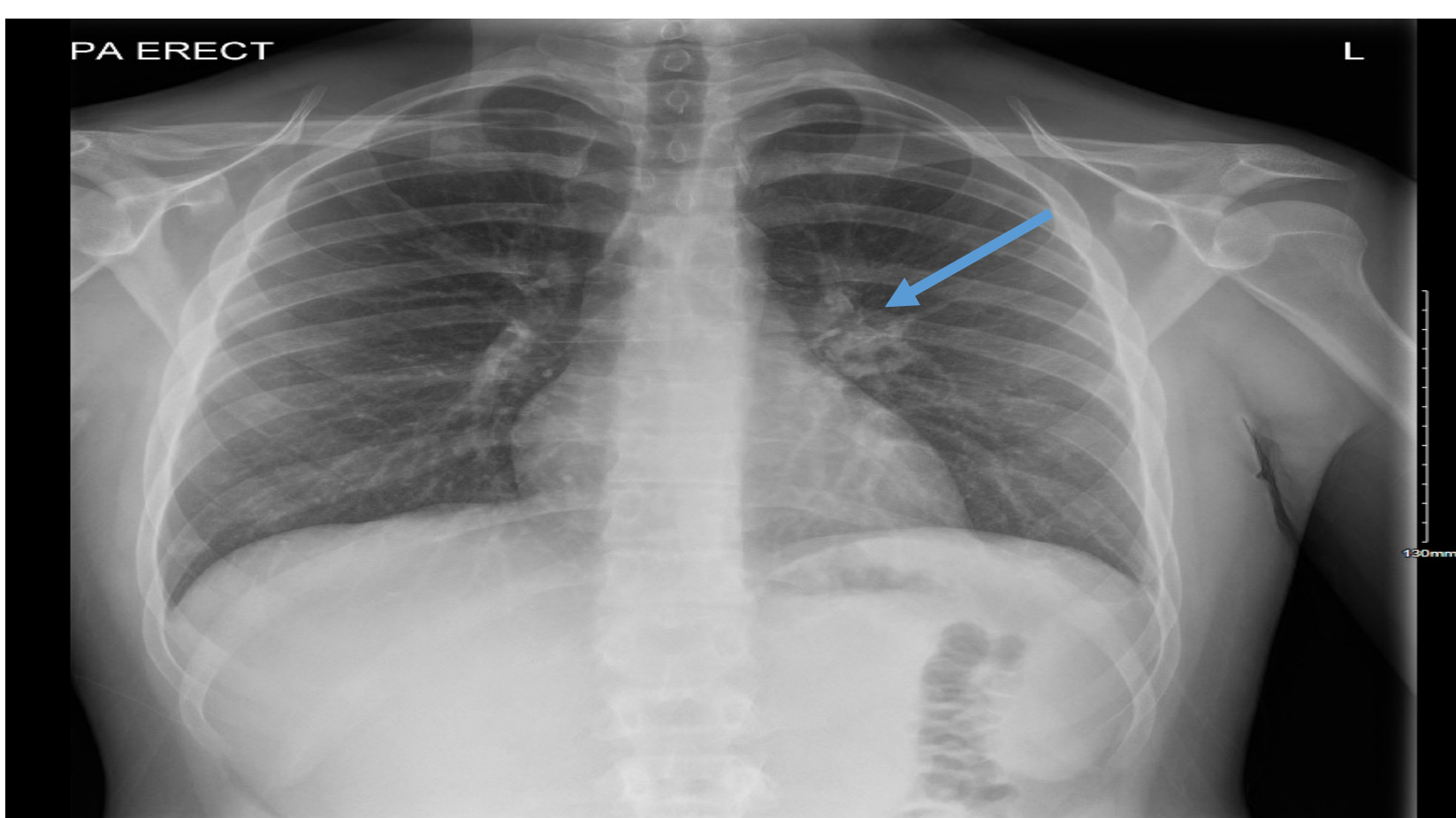


Transthoracic echo- Nil infective endocarditis



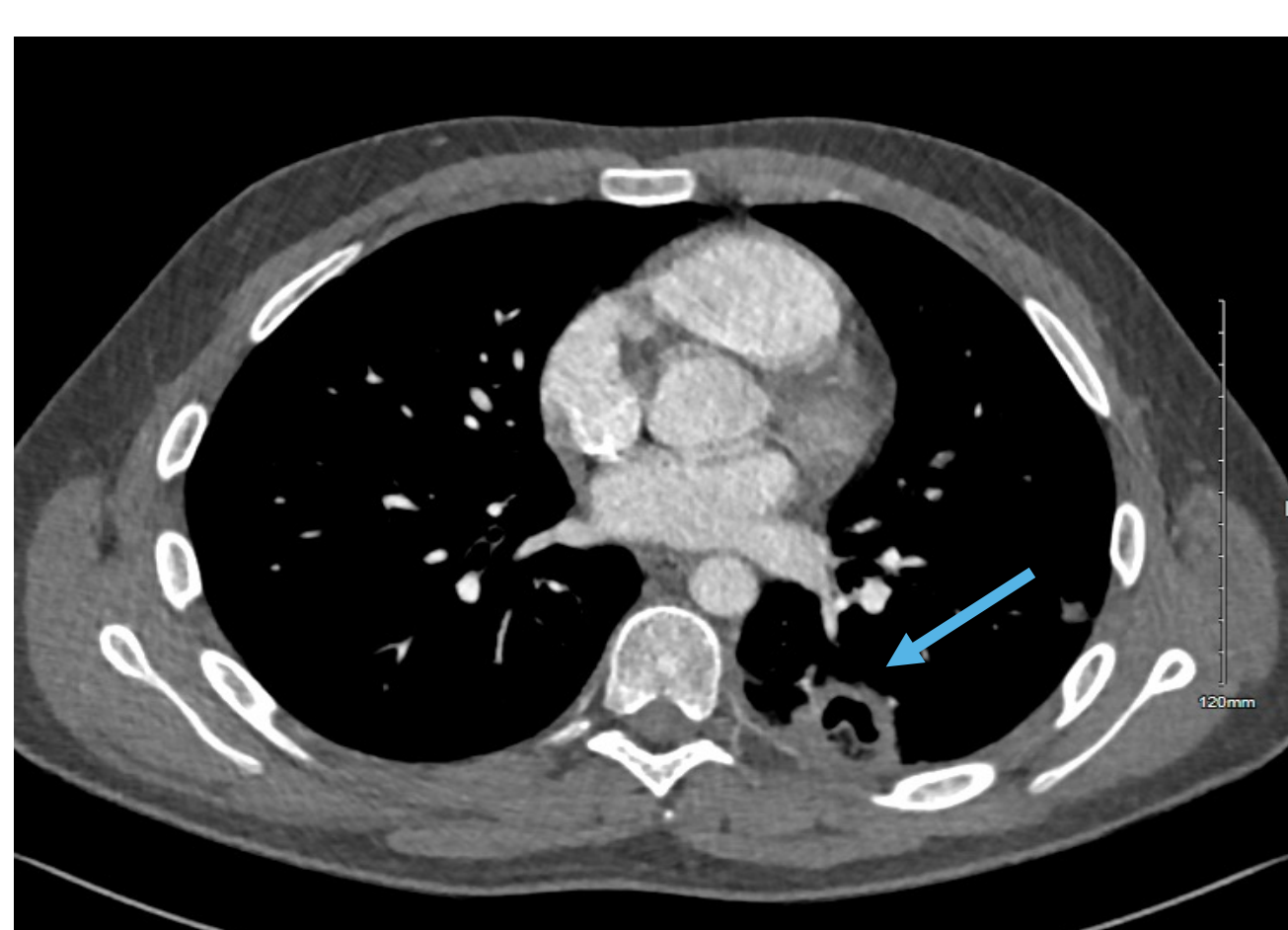
Blood cultures, HIV, EBV, CMV serology, quantiferon and throat swabs for monospot- all negative

Figure 1 chest xray



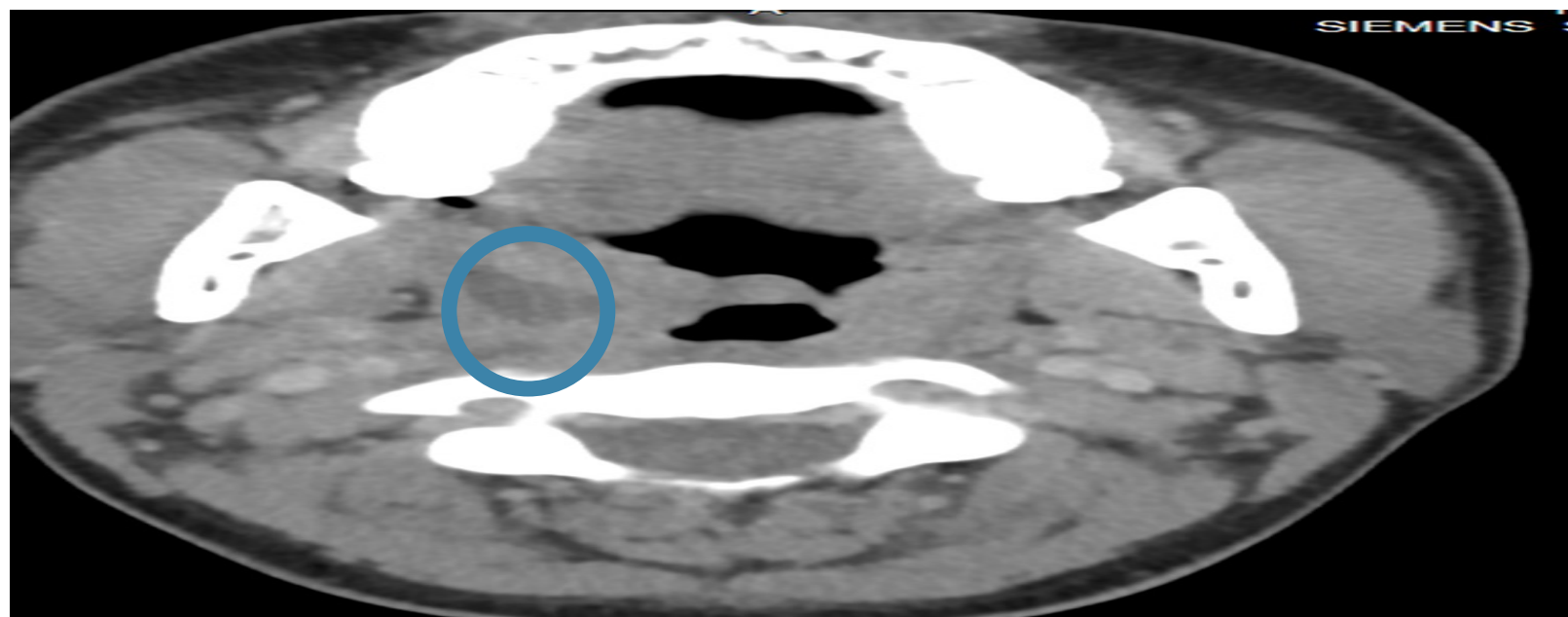
Chest radiograph shows multiple pulmonary nodules including a cavitating left perihilar nodule (see arrow).

Figure 2 CT Pulmonary angiogram



CT pulmonary angiogram demonstrates multiple bilateral pulmonary nodules. The largest cavitating nodule in the medial left lower lobe measures 3 x 2.2 cm (see arrow). No acute pulmonary embolus.

Figure 3 CT neck



No evidence of internal jugular venous thrombosis. Right-sided tonsillar abscess measuring 3 cm (marked by ring) without evidence of retropharyngeal extension.

References:

- Lemierre A. On certain SEPTICÆMIAS due to anaerobic organisms. The Lancet. 1936 Mar;227(5874):701–3.
- Hagelskjær Kristensen L, Prag J. Lemierre's syndrome and other disseminated *Fusobacterium Necrophorum* infections in Denmark: A prospective epidemiological and clinical survey. European Journal of Clinical Microbiology & Infectious Diseases. 2008 Mar 11;27(9):779–89.
- Lee W-S, Jean S-S, Chen F-L, Hsieh S-M, Hsueh P-R. Lemierre's syndrome: A forgotten and re-emerging infection. Journal of Microbiology, Immunology and Infection. 2020 Aug;53(4):513–7.
- MS; JJT. Investigation of postanginal sepsis and Lemierre's syndrome in the South West Peninsula [Internet]. U.S. National Library of Medicine; 2001 [cited 2024 Feb 14]. Available from: <https://pubmed.ncbi.nlm.nih.gov/12109395/>
- Ogunbayo GO. Lemierre's syndrome without internal jugular vein thrombophlebitis: A diagnostic conundrum. Journal of Infectious Diseases and Epidemiology. 2016 Aug 31;2(2). doi:10.23937/2474-3658/1510017
- MS; JJT. Investigation of postanginal sepsis and Lemierre's syndrome in the South West Peninsula [Internet]. U.S. National Library of Medicine; 2001 [cited 2024 Feb 14]. Available from: <https://pubmed.ncbi.nlm.nih.gov/12109395/>
- BOHARAS S. Postanginal sepsis. Archives of Internal Medicine. 1943 Jun 1;71(6):844. doi:10.1001/archinte.1943.00210060105008