

## Uncommon Association of Pulmonary Infiltrates

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### History

A 24 year old male patient presented with fever, chills, sore throat and neck pain since 2 weeks. He was tachycardiac and tachypneic on arrival. On auscultation, decreased entry in both lower lobes and crepitations were noted. Laboratory investigations showed elevated C-Reactive protein (CRP) and increased white blood cells (WBC) counts of 14,200/cm<sup>3</sup>. Chest radiograph supine AP view (Figure 1) was done initially on admission. As the patient's condition worsened, a Computed Tomography (CT) scan of neck and chest (Figures 2-4) with intravenous contrast medium was done.

### Questions

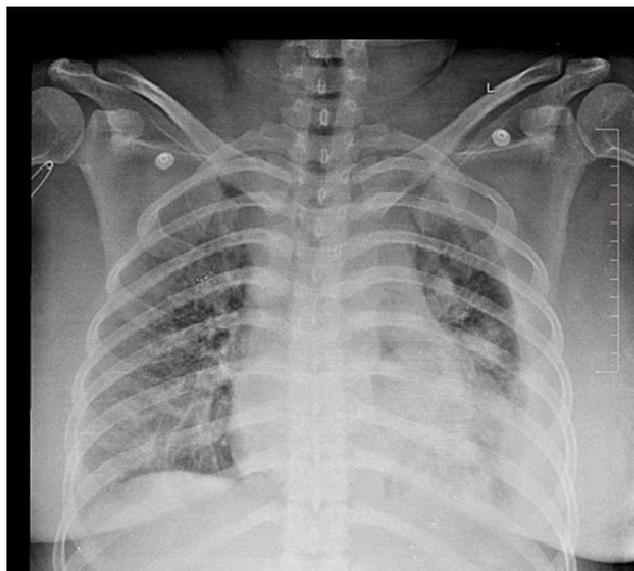
- Q1: What are the radiological findings seen in plain chest radiograph and contrast enhanced CT scan?  
Q2: What is the association between these radiological findings?  
Q3: What is the most common organism expected in the blood culture?

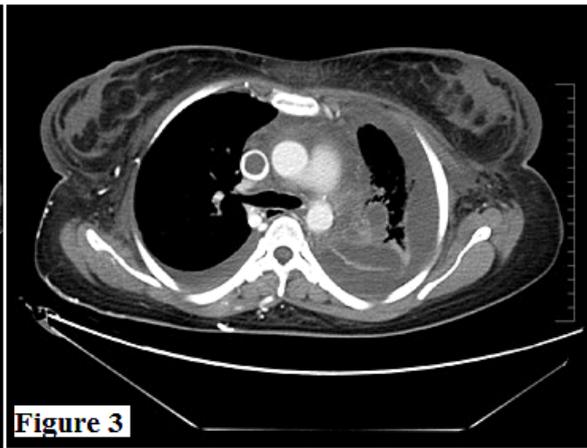
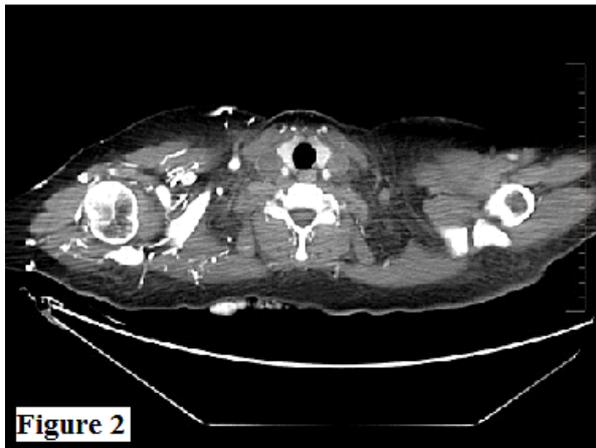
### Answers

A1: Chest x-ray supine AP view (Figure 1) shows parenchymal opacities in left mid and lower zone with mild left pleural effusion. CT scan of neck and chest (Figures 2-4) shows similar findings with complete thrombosis of bilateral internal jugular veins and superior vena cava with few peripheral placed opacities scattered in both lungs.

A2: The combination of lung parenchymal opacities and internal jugular vein thrombosis is a classical finding in Lemierre syndrome.

A3: The blood culture will mostly reveal *Fusobacterium necrophorum*.





**Keywords:** Lemierre syndrome; veins jugular; veins thrombosis; Lemierre's disease

## Discussion

Lemierre Syndrome is a rare clinical entity characterised by internal jugular vein thrombosis and lung parenchymal infiltrates representing septic emboli in the lungs. It was first described in a series of 20 cases by Dr. Andre Lemierre in 1936 [1]. These patients usually present with an episode of acute oropharyngeal infection. This infection spreads to the carotid sheath which in turn results in internal jugular vein thrombosis. This infection spreads hematogenously, producing septic emboli most commonly in the lungs [2,3]. The lung involvement was reported by Senave et al in 97% of the cases [2]. It may also cause meningitis [2], epidural abscess [2], septic arthritis [2], hepatic abscesses [3], splenic abscesses [3] and osteomyelitis [3]. The patient may present either with neck symptoms or pulmonary symptoms or both.

The most common pathogen detected in blood culture is *Fusobacterium necrophorum* [1]. The radiological importance of this disease lies in the fact that the imaging features mostly precede the positive blood culture result, hence, these play an important role in narrowing down the diagnosis and initiating the treatment. The classical radiological features associated with this disease are internal jugular vein thrombosis, enlarged tonsils, lymph nodes and septic emboli in the lung. These septic emboli lead to infarcts which appear as peripheral nodules with or without cavitation. These nodules show peripheral enhancement which is a feature of septic infarction. The line of treatment for this entity involves prolonged treatment with high dose of intravenous antibiotics which should have anaerobic coverage. Depending upon the patients conditions, anticoagulants may be required.

The aim of this quiz is to increase the awareness of this otherwise rare syndrome which has been given the status of “forgotten” or “overlooked” by many authors.

## References

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3. Moreno S, Altozano JG, Pinilla B, López JC, de Quirós B, et al. (1989) Lemierre's disease: postanginal bacteraemia and pulmonary involvement by *Fusobacterium necrophorum*. Rev Infect Dis 11: 319-324.