Multifocal Pneumonia with Complications Secondary to Aspiration of Rare Anaerobe

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Introduction

In the US, pneumonia accounts for the most common infectious cause of death and for the second most common cause of hospitalizations. Factors such as older age, chronic comorbidities (e.g. COPD, heart disease, diabetes, immunocompromised), viral infections, and smoking can predispose individuals to getting pneumonia. Common causative pathogens include Streptococcus pneumoniae, Staphylococcus aureus, and viruses. This case presents an unusual case of severe pneumonia in an individual with no known risk factors.

Case Presentation

A 42-year-old-male with no past medical history presented to the ED with 9 days of worsening right flank pain radiating to his chest that he described as a "pulled muscle sensation." Chest x-ray showed a left lower lung opacity concerning for pneumonia and ceftriaxone and azithromycin were administered and the patient was discharged with 5 days of azithromycin. He returned to the ED 3 days later with new onset of fevers to 101.5F and return of the flank pain. CT was negative for PE and showed right lower lung consolidation with right sided pleural effusion and left basilar airspace opacity. His antibiotics were switched to levofloxacin, and he was discharged but returned to the ED the next day with worsening symptoms and a new oxygen requirement. Repeat CT showed worsening right lower lobe consolidation and a large right sided pleural effusion with loculations. Viral panel was negative. Of note, the patient stayed at a hotel with a previous Legionella outbreak a week prior to symptom onset.

Initial Management

At time of admission, patient's primary complaints were pleuritic chest pain and shortness of breath. He was afebrile with 96% SpO2 on 3L. His physical exam was notable for tachycardia and poor inspiratory effort due to pain with decreased breath sounds to left lower and entire right hemithorax. He was started on levofloxacin/metronidazole for multifocal pneumonia. Initial workup included blood cultures with no growth and ACE, rheumatoid factor, ANA, HIV, AFB, and legionella urine antigen testing were all negative.

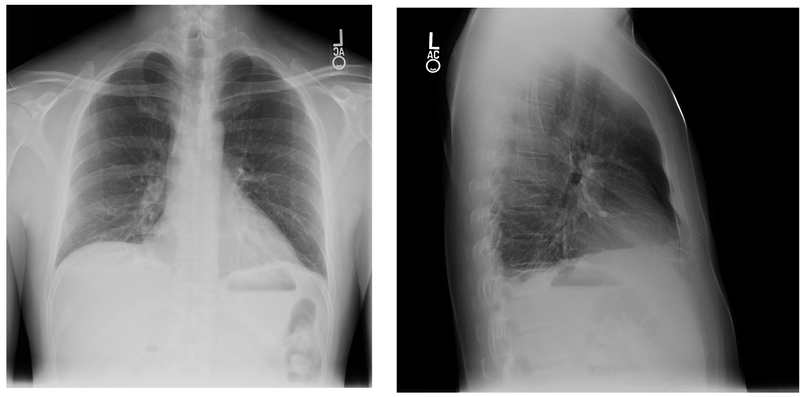

Fig. 1: Chest X-ray 5 days prior to admission

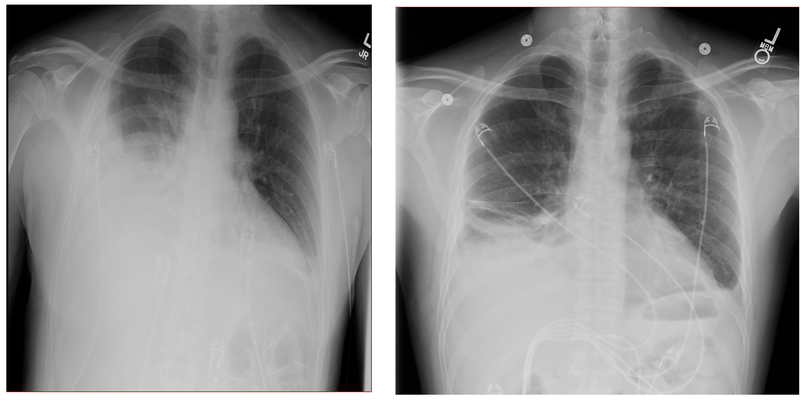

Fig. 2: Chest X-ray on day of admission (left)
Chest X-ray on day of discharge (right)

Fig. 3: Chest X-ray 31 days after discharge

Hospital Course

Infectious Disease and Pulmonology were consulted with recommendations for chest tube placement with tPA and for antibiotics to transition to ampicillin-sulbactam, which was maintained for the remainder of his hospitalization. Cardiothoracic Surgery was consulted for management of chest tube with tPA delivery. Interventional Radiology performed a thoracentesis and placement of two chest tubes for concern of empyema. Pleural fluid studies were consistent with an exudative effusion and cultures grew Slakia exigua and Prevotella loescheii. At this time, it was revealed that the patient had a recent dental procedure prior to symptom onset. Repeat imaging showed interval improvement to the right sided effusion and chest tube output was 1400 mL total. After resolution of acute hypoxic respiratory failure, he was discharged on amoxicillin-clavulanate for an additional three weeks.

Discussion

In an otherwise young, healthy patient with no comorbidities, it is unusual to have developed multifocal pneumonia complicated by parapneumonic effusions and empyema. Slakia exigua and Prevotella loescheii are anaerobic organisms found in the oropharynx and are commonly associated with oral infection.[1,2] However, presence of extraoral infection is rare and in this case was associated with community acquired empyema from a likely aspiration event.[2]

References

1. *Man, M.Y., et al. "A case of severe empyema with acute respiratory distress syndrome caused by Slackia exigua requiring veno-venous extracorporeal membrane oxygenation." Anaerobe, vol. 48, 2017, pp. 7–11, https://doi.org/10.1016/j.anaerobe.2017.06.017.*
2. *Mehmood, Mansoor, et al. "Bacteremic skin and soft tissue infection caused by Prevotella Loescheii." BMC Infectious Diseases, vol. 14, no. 1, 2014, https://doi.org/10.1186/1471-2334-14-162.*