

Medical Image Of The Week: Secondary Pneumonia Presenting as Hemoptysis

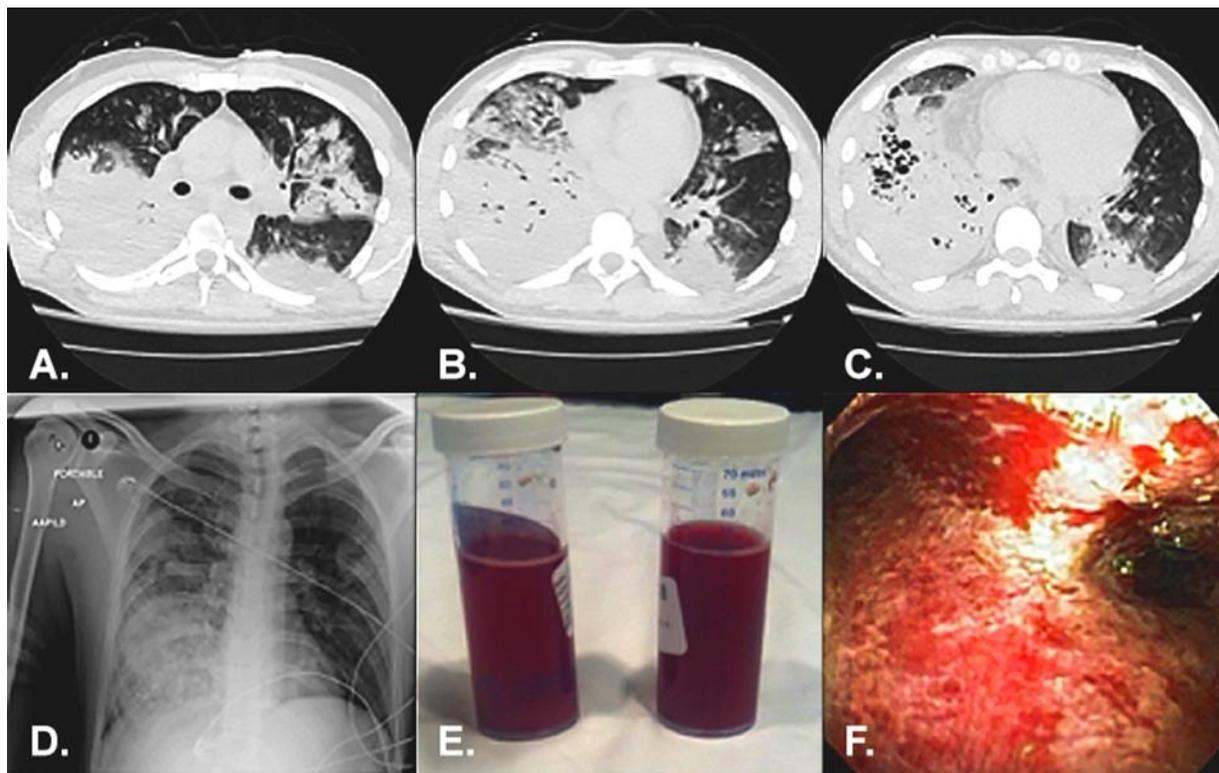


Figure 1. A-C: Axial images of the chest demonstrating bilateral consolidation of the lung with air bronchograms. D: Chest radiograph on presentation. E: BAL findings. F: Bronchoscopic images of diffuse airway sloughing; this is the main carina.

A 44 year-old man with a history of asthma presented to the hospital with encephalopathy, severe hypoxia and what was reported to be hematemesis. The patient was intubated in the Emergency Department and mechanical ventilation was instituted. Upper endoscopy was performed but source of bleeding could not be identified. Imaging of the chest showed pulmonary consolidation on both plain radiograph (D) and computed tomography (A-C). Bronchoscopy revealed a very friable mucosa with sloughing of the respiratory epithelium from the main carina (F) to at least the subsegmental level. Bronchoalveolar lavage (BAL) returned bloody fluid (E) but without any increase in blood with subsequent aliquots of fluid. The patient had progressively worsening hypoxia consistent with the acute respiratory distress syndrome (ARDS) requiring rescue maneuvers including paralysis, airway pressure release ventilation, and inhaled nitric oxide but we were unable to implement proning or transfer for extracorporeal life support due to profound cardiovascular collapse refractory to treatment. Ultimately, he succumbed from multiorgan failure. On laboratory evaluation of the BAL both *Staphylococcus aureus* and Influenza B virus were detected.

Bacterial pneumonia is a common complication of influenza infection. Historically, patients at the extremes of age have been most susceptible to secondary pneumonia.

However, during the recent 2009 influenza pandemic an unusually high rate of secondary pneumonia among young adults was observed (1). The most common bacterial pathogens isolated following influenza infection include *Staphylococcus aureus*, *Streptococcus pneumoniae*, *Streptococcus mitis*, *Streptococcus pyogenes* and *Haemophilus influenzae* (2). A number of pathogenic mechanisms for synergies between influenza and bacteria have been proposed including disruption of the respiratory epithelium leading to enhanced bacterial adhesion (3).

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References

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