Medical Image of the Week: Empyema

Figure 1. Admission thoracic CT showing a low density collection in the right lung likely from necrosis (*).

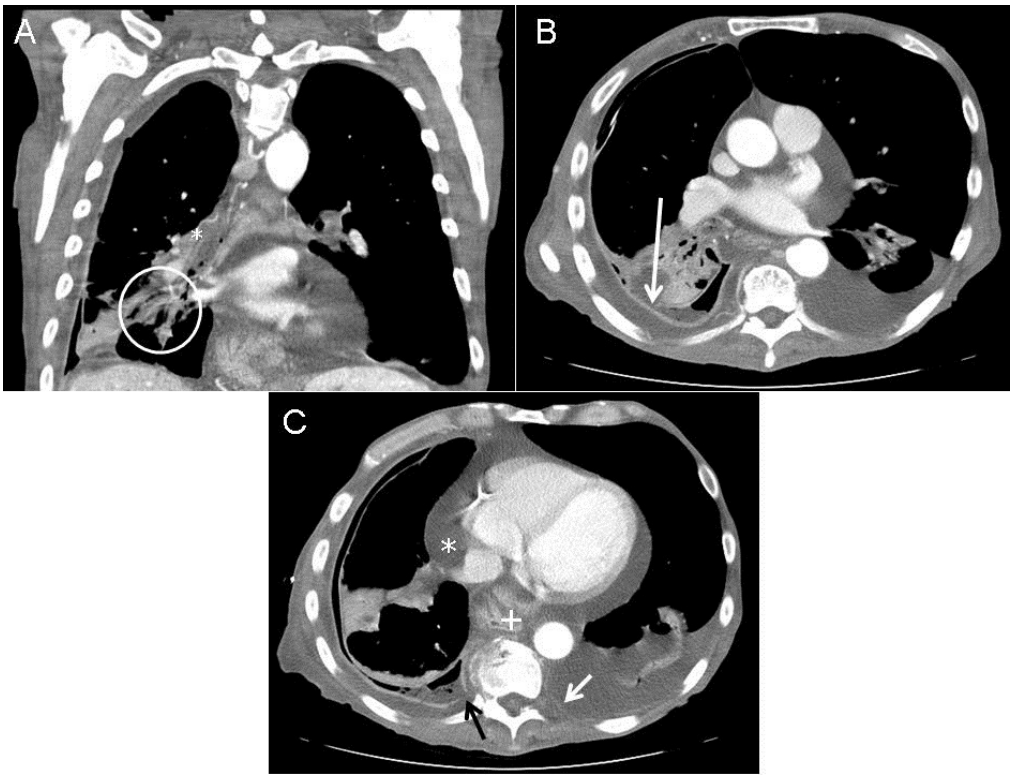

Figure 2. Selected views from the thoracic CT obtained 1 week after admission. Panel A: Architectural distortion (white circle) suggests necrotizing pneumonia. Note fluid within the bronchus intermedius (*). Panel B: Defect in visceral pleura (arrow) with decompression of parenchymal necrosis into the pleural space. Note enhancement and thickening of both pleural layers. Panel C: Defect in parietal pleura (black arrow) with fluid extending into the extrapleural space. Pericardial effusion (*), new left pleural effusion and left parietal pleura enhancement (white arrow) suggests spread of infection. Incidental hiatal hernia (+).

A 71 year-old man with chronic obstructive pulmonary disease (COPD) presents to the emergency department complaining of dyspnea after recent admission for pneumonia. Chest CT shows a low density collection in the right lung suggesting necrosis (Figure 1). A CT obtained 1 week after admission (Figure 2) shows progression to empyema.

Management of empyema can be difficult. If the fluid cannot be removed with a therapeutic thoracentesis, a chest tube should be inserted and consideration be given to the intrapleural instillation of fibrinolytics (1). If the loculated effusion persists, the patient should be subjected to video-assisted thoracoscopic surgery. If the lung cannot be expanded with this procedure, a full thoracotomy with decortication should be performed. The definitive procedure should be performed within fourteen days.

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Reference

Light RW. Parapneumonic effusions and empyema. Proc Am Thorac Soc. 2006;3(1):75-80. [CrossRef] [PubMed]