Septic Pulmonary Emboli

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A 16-year-old female was referred for evaluation of fever of four days duration. The patient had a renal transplant done one week back and was found to be suffering from thrombosis of A.V. fistula in the upper extremity as per the history. The A.V.F thrombosis was confirmed by ultrasound examination. In addition patient had evidence thrombosis of the same upper limb.

Case Presentation

A 16-year-old female was referred for evaluation of fever of four days duration. The patient had a renal transplant done one week back and was found to be suffering from thrombosis of A.V. fistula in the upper extremity as per the history. The A.V.F thrombosis was confirmed by ultrasound examination. In addition patient had evidence thrombosis of the same upper limb.

CT Scan Findings

NECT was done. The scannogram revealed a thick walled cavity, 2.9 cm x 3.5 cms, abutting the minor fissure in right side.
CT scan also showed multiple foci of consolidation involving predominately the right upper lobe, with mild right side pleural effusion.
There also were multiple nodular shadows in both lung fields. Some nodules showed a branch of pulmonary artery entering the central region of the nodules. This finding is said to characteristic of septic emboli in lung.

There was a 4 cm area of sub-pleural wedge shaped consolidation with central cavitation in right side abutting the minor fissure ( above figure 4 lung window ) Note also multiple sub-pleural nodules and pleural effusion.
There was a 4 cm area of sub-pleural wedge shaped consolidation with central cavitation in right side abutting the minor fissure (above figure mediastinal window). The apex of this wedge shaped opacity was directed towards hilum.
Typical air bronchogram was also seen, suggesting consolidation, below the cavity in the same bronchial segment. HRCT confirmed the above findings and in addition showed patchy areas of ground glass appearance in both sides.

**Diagnosis**  
Septic pulmonary emboli

**Discussion**

The origin of septic emboli is generally in a relatively long standing extrapulmonary site of infection. Frequently septic emboli are associated with intravenous drug use and endocarditis, especially with tricuspid valve infection and vegetation. Other sources include infected intravenous access sites and some intra-abdominal abscesses. Typically septic emboli are multiple but can occur as solitary lung nodules when they may be confused with neoplasm.

However, septic emboli have a dynamic appearance on radiograph, generally evolving from a poorly defined nodular opacity approximately 1cm to 2 cm in diameter to a moderately thick and irregular walled cavity. When multiple, septic emboli are generally observed in the periphery of the lungs typically in the mid and lower lobes. Parapneumonic effusions may also be observed. If extremely numerous, septic emboli may coalesce, mimicking a more conventional lobar or bronchopneumonia. The normal progression of septic emboli is to enlarge while creating more destruction of lung. If treated with appropriate antibiotics cavitary and noncavitary nodules will gradually decrease in size and either ultimately disappear entirely or form horizontal linear scars in the periphery of lung. Clinically patients are generally quite ill with fever, leukocytosis and malaise. Staphylococcus aureus is a frequent pathogen.

The CT appearance of septic emboli includes nodules and wedge-shaped subpleural opacities with or without cavitation and the feeding vessel sign. The feeding vessel sign consists of a distinct vessel leading directly into the center of a nodule. This sign has been considered highly suggestive of septic embolism, the prevalence varying from 67 percent to 100 percent in various series.

Other documented CT findings in septic pulmonary emboli include multiple peripheral parenchymal nodules, cavitation, and wedge-shaped peripheral lesions abutting the pleura infiltrates, air bronchograms within nodules, and extension into the pleural space. When the chest radiograph is
indeterminate, further evaluation with CT can be extremely valuable as it may disclose unsuspected pulmonary nodules and wedge-shaped subpleural densities. The extent of disease documented by CT is generally greater than that detected by radiography.

**References**


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**Disclosures:**

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