Case Report

Empyema Necessitans In A 17 Years Male With Long Standing Pneumonia

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Abstract: Empyema necessitans is a spontaneous discharge of an empyema that has burrowed through the parietal pleural, usually in the chest wall, to form a subcutaneous abscess. We present a case of 17 year old adult male presented to us for cross-sectional imaging and was diagnosed to be a case of Empyema necessitans besides bilateral empyema associated with right hydro/ hemopneumothorax and multiple thick walled cavitations of variable sizes with multiple air fluid levels in non-segmental distribution involving all lobes bilaterally placed peripherally.

Introduction

A 17 year old adult male presented to us for cross-sectional imaging with a history of fall in the lake followed by a history of several days of progressive bilateral chest discomfort, dyspnoea, productive cough, and fever with chills, however not associated with night sweats. He had been treated as an inpatient for two months with broad spectrum antibiotic cover for bilateral bronchopneumonia. Upon physical examination, he was not in respiratory distress, and blood pressure, heart rate and oxygen saturation on ambient air were normal. However, diminished breath sounds on lung base bilaterally were elicited with patchy areas of coarse creptitations. A chest radiograph showed multiple cavitations with air-fluid levels in few of these cavities bilaterally in non-segmental distribution along with blunting of both costophrenic angles.

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A chest radiograph showed multiple cavitations with air-fluid levels in few of these cavities bilaterally in non-segmental distribution along with blunting of both costophrenic angles.

A CT scan of the chest revealed a left pleural collection in communication with a chest wall and subscapular fossa of the left scapula besides right hydro/ hemopneumothorax and multiple thick walled cavitations of variable sizes with air fluid level in non-segmental distribution involving all lobes b

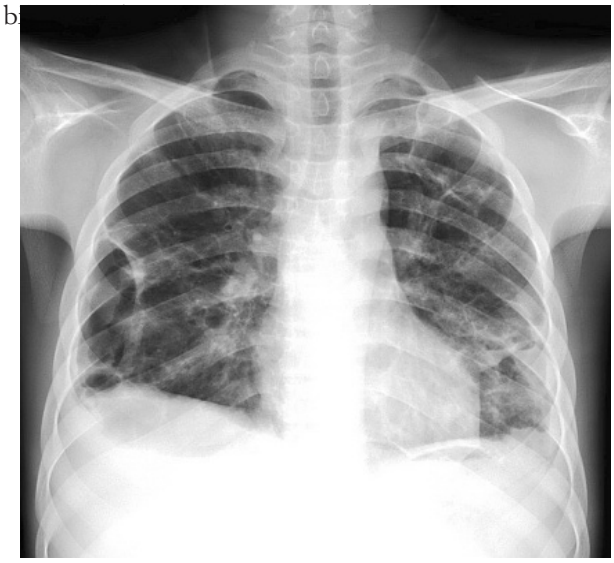
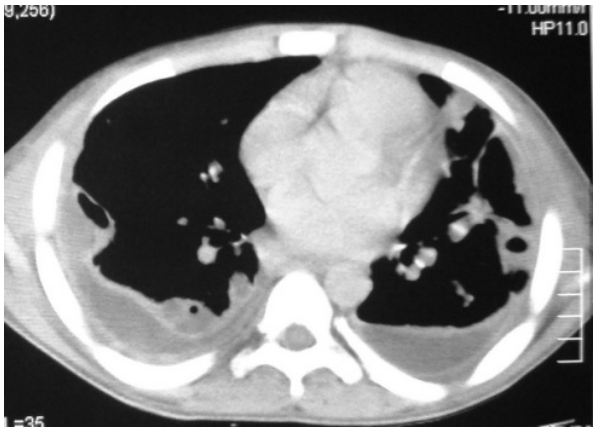


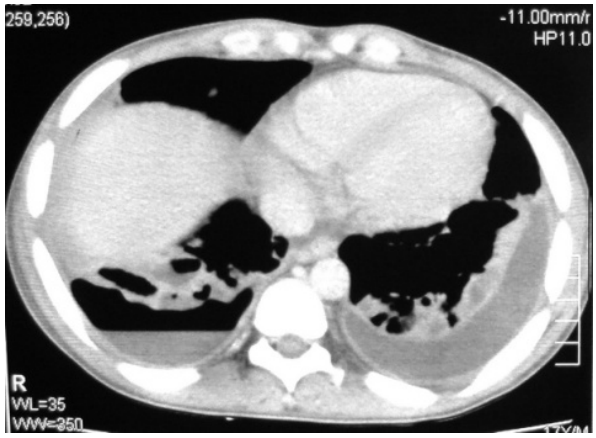
Fig. 1: Multiple cavitations (white arrows) bilaterally with patch of consolidation (red arrow) in left lower lobe and blunting of both costophrenic angles (black s

Fig. 2: Axial section through upper thorax at the level of scapulae (mediastinal window) demonstrating collection in the left subscapular fossa

Pleural cavity posteriorly (white arrow). This is the extension of empyema through the pleural cavity into the chest wall and surrounding structures, EMPYEMA NECESSITANS.



A

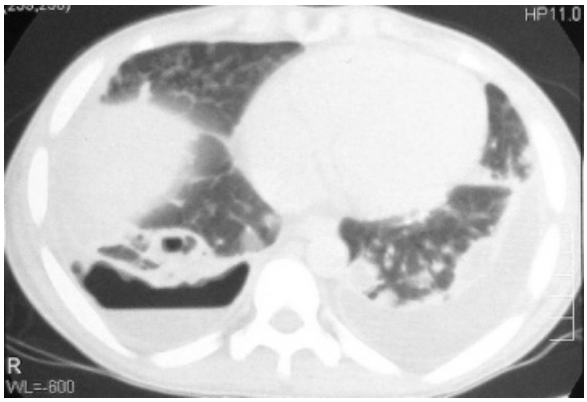


B

Fig-3:(a & b): Axial section through lower thorax (mediastinal window) demonstrating collection in the pleural cavities bilaterally with enhancing thickened pleural layers (split pleura sign). Note that there is air-fluid level in the right pleural cavity (white arrow).

A

B



C

Fig-4 (a, b & c): Axial section of thorax (lung window) demonstrating multiple thick walled cavities with non-segmental patches of consolidations and bilateral collections in the pleural cavities.

Exudative pleural fluid cultures revealed Staphlococcus aureus, without evidence of fungal, anaerobic or acid-fast bacilli sources.

Discussion

Empyema is a suppurative infection of the pleural space. The pleural space, which is typically sterile, becomes infected as a complication of pneumonia, or by direct extension from infections of an adjacent organ (esophagus, mediastinum, vertebrae and subdiaphragmatic organs). Empyema can be caused by a number of bacteria and fungi. Common aerobic pathogens include Streptococcus, Staphylococcus and Pseudomonas aeruginosa.[1] Bacteroides and Fusobacterium species are the most common anaerobic pathogens.[1,2] Many case reports have also mentioned Mycobacterium tuberculosis, Actinomyces and Nocardia species. Empyema from any cause requires drainage of the pleural space with concurrent antibiotic therapy to ensure complete resolution and avoidance of late complications.[3]

an empyema that has burrowed through the parietal pleural, usually in the chest wall, to form a subcutaneous abscess that eventually may rupture through skin. It usually occurs as a late complication resulting from inadequate treatment. The majority of Streptococci infections are caused by S. pneumoniae and S. pyogenes. Other Streptococcal species account for <10% of empyemas 4. S. milleri is a member of the viridans streptococci family, which are colonizers of the gastrointestinal tract, oropharynx, auditory canals, and the genitourinary tract. Infections are usually due to aspiration and are most common in patients with alcohol consumption, esophageal disease or mental retardation, that is, those in whom aspiration is common4. Treatment of S. milleri empyema involves complete pleural drainage 4, 5. If there has been extrathoracic extension, subcutaneous and rib resection may be required. Penicillin-based antibiotics are the treatment of choice. However, there are case reports of penicillin-resistant isolates 4.

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