



Pulmonary consolidation from pleural disease using the sonographs

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Abstract

Likewise, the fetid mouth and a predisposition to aspiration are clearly the forerunners of the fetid lung, lung abscesses, or anaerobic emphysema. Such infections are usually poly microbe and linked to gingivitis and altered consciousness. Extensive local tissue injury and bacterial synergistic infection are hallmarks of anaerobic pneumonia and emphysema.

Keywords: Initial findings; Thoracentesis; Systemic acidosis; Histoplasmosis; Computed tomography; Bronchoscopy secretions

Introduction

Approximately one quarter of emphysema associated with trauma or surgery. There is a disproportionate increase in infection and a decrease in anaerobic infection in such patients. Advised resection of lung nodules or cavities containing spontaneous rupture of mycosis associated lung cavities into the pleura may lead to fungal emphysema. Similarly, instrumentation or surgery causing injury or perforation of the oesophagus or stomach may lead to sub diagrammatic infection that can extend to the pleura. Sinus drainage from the skin and pleural involvement are suggestive of infection caused by antinomies species, mycobacterium tuberculosis, or myocardia species. Emphysema may also occur with Endamoebas histolytic infection but is rare in the United States [1]. Most of the diagnostic and therapeutic considerations with regard to emphysema are the same for children and adults [2].

Methodology

However, children more frequently have pneumothoraxes associated with infection, as well as scoliosis as a complication of emphysema. Because of the lower incidence of severe underlying disease in children, they are better candidates for early thoracic scope intervention if antibiotic treatment, drainage procedures, and thrombolytic therapy fail. Initial findings may be nonspecific, although otherwise-normal patients usually have chest pain, chills or fever, and night sweats at a higher frequency than do patients with host defence defects as shown in (Figure 1). Weight loss and general disability occur with more indolent presentation [3]. The occurrence of persistent fever, diaoresis, and leucocytosis despite the administration of effective antibiotics should suggest the presence of emphysema in patients with pulmonary or adjacent infection. Physical examination is remarkably nonspecific and may be limited to findings of effusion. A high index of suspicion and an appreciation of factors that predispose patients to development of emphysema facilitate its recognition [4].

Discussion

Higher classes require increasing degrees of intervention. It is important to determine fluid character and detect loculations promptly and accurately. If thoracentesis reveals fluid that is culture-negative and devoid of microorganisms on microscopic examination, then antibiotics with or without serial thoracenteses may be used. Tube drainage is reserved for smear-positive collections or those with overt purulence [5]. The presence of emphysema is demonstrated by pleural pus and indicates the need for tube drainage and thrombolytic therapy. Serum measurement can help to assess the significance of low pleural fluid values that reflect systemic acidosis. Pleural fluid values that are

at least, units less than serum values support the need for a drainage procedure. Spurious elevation of emphysema fluid values may occur in patients with urea splitting infections. Malodorous emphysema fluid suggests the presence of anaerobic infection but is present in only about two thirds of anaerobic emphysema [6]. Demonstration of high levels of pleural fluid protein or specific gravity is rarely helpful. Microbes may be seen on gram-stained emphysema fluid that is sterile. In other instances organisms are neither seen in nor grown from frank pus. An acridine orange stain is occasionally helpful for identifying bacteria whose gram stain is distorted by prior antibiotic therapy [7]. Legionella pneumonia is not well visualized by gram stain but can be detected by direct fluorescent microscopy or by culture. Testing urine for Legionella antigen is probably the most sensitive test for pneumonia caused by pneumonia group. Patients at risk of fungal emphysema require appropriate smears and cultures of emphysema fluid for detection of fungi. Serological tests may assist in the diagnosis of plasmodia [8]. Disseminated histoplasmosis involving the pleura of HIV patients may be diagnosed by serum or urine antigen detection as shown in (Figure 2). Similarly, Aspergillums antigen quantitation may be useful in the diagnosis of aspergillums infection involving the pleura in compromised



Figure 1: Patients for early thoracic scope intervention.

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Figure 2: Pleura of patients diagnosed by serum.

patients. Patients suspected of having amoebic should undergo computed tomography studies for identification of sub-diagrammatic disease as well as serological testing for disseminated extra intestinal amoebic. Pleura pulmonary amoebic may develop after erosion of an amoebic liver abscess through the diaphragm, in association with sudden respiratory distress, cough, and pleurisy [9]. The lung may be involved, in which case a bronchi fistula and amebae visible in copious bronchial secretions may be noted. Pus will have an acid and cell fragments will sediment, whereas effusions will have a neutral and remain opaque after centrifugation. Primary pleural eosinophilia is a rare condition suggesting and can be diagnosed by demonstration of parasites in stool, sputum, or bronchoscopy secretions and by the finding of elevated serum antibody titers [10]. Levels of antibodies may be significantly higher in pleural fluid than in serum. The diagnostic utility of PCR detection of mycobacterial antigen in pleural fluid is still under investigation. Skin test conversion and symptoms of weight loss, night sweats, and fever as well as epidemiologic and sociologic risks of tuberculosis are important diagnostic clues [11]. Pleural fluid from patients with collagen-vascular disease, sub-diagrammatic infections, malignancy, or pancreatitis will occasionally mimic bacterial emphysema fluid. Ultrasonographer devices are widely available, provide real-time guidance for thoracentesis or pleural catheter placement, and can be transported to the bedside of unstable or critically ill patients. This imaging adjunct is particularly useful for sampling fluid that does not layer freely on decubitus films, and it reduces the incidence of pneumothorax during thoracentesis [12]. The sonographer appearance of pleural fluid collections is quite variable, ranging from anechoic to very echogenic. When highly echogenic, the collections may be mistaken for consolidated lung or pulmonary abscess. In such instances it is important to coordinate sonographer and radiographic interpretations. Sonographer can distinguish solid from liquid pleural abnormalities with accuracy. With combined use of radiography and sonographer, the accuracy rises [13]. The ability of ultra-sonographer to detect variation in the shape of pleural fluid collections during respiration is helpful in excluding a solid lesion. Similarly, evidence of fluid bronchograms in cases of consolidated lung is another distinguishing feature detectable by ultrasonography. Discrete intra-pleural septations can be demonstrated sonographically in up to exudative effusions, and some may appear mobile on real-time examination. Ultrasonography may show limiting membranes suggesting the presence of loculated collections, even when they are invisible by computed tomography [14]. The presence of septations has prognostic importance because loculated collections. Anechoic collections may be exudative or transudate. The development of rapid, newer-generation computed tomography scanners has revolutionized the evaluation and treatment of thoracic emphysema. Emphysema usually appears well defined,

smooth, and round or elliptical on computed tomography scans. Their margins are composed of inflamed visceral and parietal pleura that often have a markedly thickened appearance and enhance after administration of intravenous contrast material. The visceral and parietal layers are separated by the interposed emphysema fluid, giving rise to the split pleura sign of emphysema. When air is introduced into the emphysema cavity, either iatrogenic following thoracentesis or in association with a bronchi pleura fistula, the inner aspect of the visceral and parietal margins is usually smooth. The extra pleural or subcostal fat external to the thickened parietal pleura and deep to the ribs is also noted to thicken in both acute and chronic emphysema. This clearly discernible fatty hyperplasia has imaging characteristics similar to those of subcutaneous fat and is much lower in computed tomography attenuation than the thickened pleura itself. Conventional chest radiographs cannot distinguish pleural thickening that reflects pleural fluid accumulation from that due to accentuation of this fatty layer. Emphysema is frequently associated with nearby pulmonary consolidation and sometimes lung abscess. Alternatively, a lung abscess can resemble effusion or emphysema.

Conclusion

Differentiation between these diagnostic possibilities is often difficult, if not impossible, with use of clinical and conventional radiographic approaches. Fortunately, computed tomography usually allows definitive diagnosis. Lung abscesses are often poorly defined, and surrounded by irregularly consolidated lung. They often contain one or more cavities with shaggy intramural contours. When abutting a pleural surface, abscesses form acute angles with the adjacent chest wall. Because they arise within and occupy consolidated lung, they rarely appear to displace adjacent pulmonary structures such as parietal airways and vessels. Emphysema may form acute or obtuse angles yet have the other computed tomography characteristics mentioned in the preceding paragraph.

Acknowledgement

None

Conflict of Interest

None

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