

CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

Medical Imaging Quiz – Case 49

A 40-year-old male presented to the emergency department due to fever and dyspnea. He referred mild trauma of the left leg, after an accident, a week ago. Fever, progressive dyspnea and chest pain occurred three days before admission. At initial presentation, body temperature was 39.1 °C, blood pressure was 90/65 mmHg, pulse was 103 beats per minute and respiratory rate was 21 breaths per minute. Lung auscultation disclosed normal findings. Blood tests revealed elevated white blood count and C-reactive protein. Chest x-ray showed multiple ill-defined nodular lesions over the bilateral lung field. Chest computed tomography (CT) showed multiple different-shape nodules on both lungs, with variable degree of cavitation, pneumothorax and small pleural effusion in the left lung (figures 1, 2). Bacterial culture revealed Gram negative anaerobic bacillus, *Fusobacterium necrophorum*. All clinical presentations improved following the initiation of antibiotic treatment.

Comment

Septic pulmonary embolism is an uncommon disease in which thrombi containing microorganisms in a fibrin matrix are mobilized from an infectious nidus and transported in the venous system to implant in the vascular system of the lungs. Septic emboli can occur from varying sources such as tricuspid valve endocarditis,

infection elsewhere in the body, infected deep venous thrombosis, immunologic deficiencies, infected catheters/lines, post-anginal septicemia, periodontal disease. Symptoms are not specific. The most common manifestation is bacteremia with dyspnea, chest pain, cough and other respiratory symptoms. Often concurrent symptoms of the extra pulmonary primary infective focus are also present. Diagnosis is difficult and challenging. Most patients (about 90%) have positive blood cultures at time of imaging assessment. Blood cultures revealed mainly methicillin-resistant Staphylococcus, methicillin-sensitive Staphylococcus, Fusobacteria, Klebsiella pneumonia, Candida and Streptococcus viridians.

Important in image interpretation is clinical context. Chest x-ray features are nonspecific but may show peripheral, lower lobe predominant infiltrative densities, diffuse bilateral nodular densities

ARCHIVES OF HELLENIC MEDICINE 2018, 35(3):426–427
ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2018, 35(3):426–427

E. Botsa,¹
I. Thanou,²
A. Koundouraki,
L. Thanos²

¹First Pediatric Clinic, "Agia Sophia" Children's Hospital, National and Kapodistrian University of Athens, Athens

²Department of Interventional Radiology and Diagnostic Imaging, "Sotiria" General Hospital of Chest Diseases, Athens, Greece

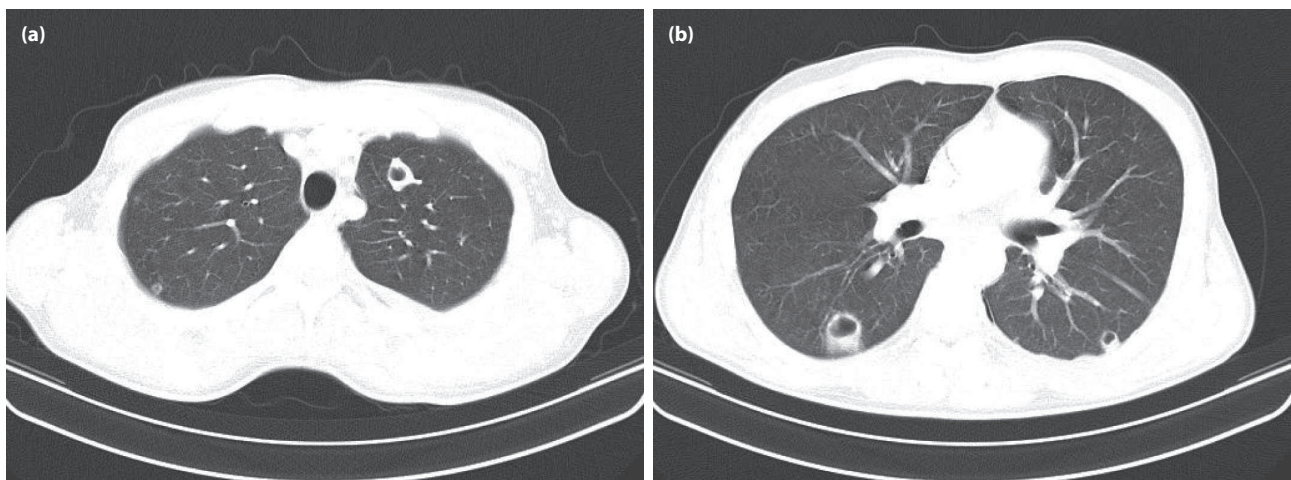


Figure 1. Chest computed tomography (CT) demonstrated the peripheral and bilateral nature of multiple pleural-based nodules (relatively well-defined margins and a variable degree of cavitation).



Figure 2. Computed tomography (CT) of the chest demonstrating pneumothorax and pleural effusion of the left lung, major complications of septic lung emboli.

in varying stages of cavitation, accompanying small pleural effusions. CT play an important role in the diagnosis of pulmonary septic embolism revealing subpleural nodular lesions or wedge-shaped densities with or without cavitation. In 80% of cases CT features include bilateral abnormalities. Major complications include empyema, pneumothorax and pleural effusion.

Differential diagnosis of variably sized cavitary lung lesions consists of cavitary pulmonary metastases, necrobiotic lung nod-

ules, granulomatosis with polyangiitis and pulmonary embolism according to the medical history of the patient.

References

1. WONG KS, LIN TY, HUANG YC, HSIA SH, YANG PH, CHU SM. Clinical and radiographic spectrum of septic pulmonary embolism. *Arch Dis Child* 2002, 87:312–315
2. HUANG RM, NAIDICH DP, LUBAT E, SCHINELLA R, GARAY SM, McCAULEY DI. Septic pulmonary emboli: CT-radiographic correlation. *AJR Am J Roentgenol* 1989, 153:41–45
3. IWASAKI Y, NAGATA K, NAKANISHI M, NATUHARA A, HARADA H, KUBOTA Y ET AL. Spiral CT findings in septic pulmonary emboli. *Eur J Radiol* 2001, 37:190–194
4. DODD JD, SOUZA CA, MÜLLER NL. High-resolution MDCT of pulmonary septic embolism: Evaluation of the feeding vessel sign. *AJR Am J Roentgenol* 2006, 187:623–629
5. MATTAR CS, KEITH RL, BYRD RP Jr, ROY TM. Septic pulmonary emboli due to periodontal disease. *Respir Med* 2006, 100:1470–1474
6. YE R, ZHAO L, WANG C, WU X, YAN H. Clinical characteristics of septic pulmonary embolism in adults: A systematic review. *Respir Med* 2014, 108:1–8

Corresponding author:

L. Thanos, Department of Computed Tomography, "Sotiria" General Hospital of Chest Diseases, 152 Mesogeion Ave., 115 27 Athens, Greece
e-mail: loutharad@yahoo.com