Medical Image Of The Week: Septic Pulmonary Emboli Misdiagnosed As Metastatic Disease

Figure 1. Representative thoracic CT axial images showing multiple pulmonary nodules (red arrows).

A 54-year-old previously healthy man presented with acute onset of left-sided, sharp pleuritic chest pain and dry cough. He denied having fever, hemoptysis, shortness of breath, or unintentional weight loss. Review of system was positive for bright blood per rectum for the last year. He had a root canal procedure done 3 weeks prior to presentation. He is a 30 pack-year smoker, drinks alcohol occasionally, but denied any IV drug use.

On admission, he was afebrile and hemodynamically stable. Clinical examination was positive for fecal occult blood test. CBC revealed WBC of $12,800/\text{mm}^3$ and his hemoglobin was 11.9 g/dL . Thoracic CT scan with contrast was negative for pulmonary embolism, but showed multiple bilateral pulmonary nodules suspicious for malignancy (Figure 1). The left upper lobe showed a subpleural $2.4 \times 1.5 \text{ cm}$ rounded opacity and emphysematous changes. CT of the abdomen and pelvis showed folds in the stomach but was otherwise unremarkable.

Esophagogastroduodenoscopy was negative. Colonoscopy showed non-bleeding internal hemorrhoids. He underwent percutaneous CT guided lung biopsy. Pathology report showed distended alveoli filled with polymorphonuclear leukocytes mixed with fibrin consistent with septic emboli and no evidence of malignancy. Special stains for organisms were negative. Blood cultures were negative, Trans-esophageal echocardiograph was normal. Mandibular film done was negative for dental abscess. HIV serology, Quantiferon gold, β -d glucan, Aspergillus, and mycobacterial culture of sputum were negative. During his hospital stay he developed a fever and his WBC count increased. He was empirically started on broad spectrum antibiotics and he clinically improved significantly.

Septic pulmonary embolus (SPE) is a serious and uncommon condition that poses a diagnostic challenge and carries a high mortality (1,2). Presenting symptoms are often non-specific. Blood cultures may be negative initially. Similarly, chest radiography is not helpful to establish a diagnosis. CT is more useful, usually showing multiple peripheral nodular opacities. SPE can be suspected by the presence of potential source of underlying infection, febrile illness and multiple pulmonary nodules.

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References

1. 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):1-8. [\[CrossRef\]](#) [\[PubMed\]](#)
2. Shiota Y, Taniguchi A, Yuzurio S, Horita N, Hosokawa S, Watanabe Y, Tohmori H, Ono T; Okayama Respiratory Disease Study Group. Septic pulmonary embolism induced by dental infection. *Acta Med Okayama*. 2013;67(4):253-8. [\[PubMed\]](#)