Medial Image Of The Week: Westermark Sign

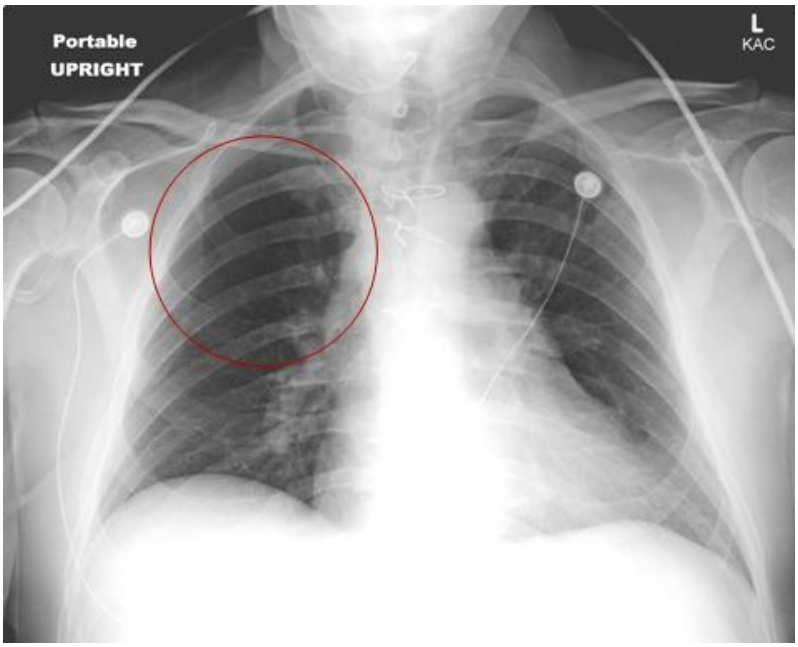

Figure 1. Chest x-ray showing decrease pulmonary vasculature on the right upper lobe (red circle, Westermark sign).

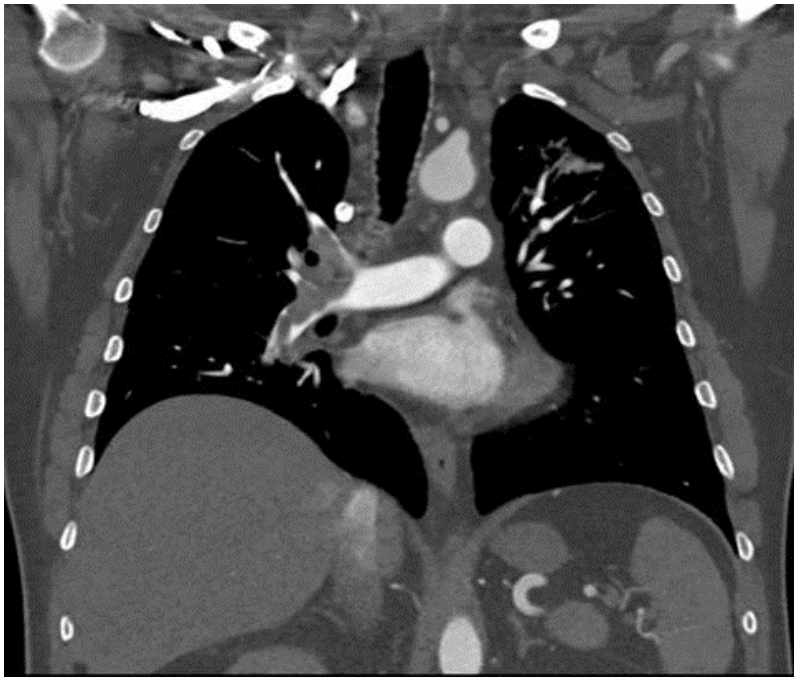

Figure 2. Coronal section of the CT angiogram showing occlusive thrombosis on the right pulmonary artery.

A 71 year old man was evaluated in the Emergency Department for acute onset of dyspnea. On exam he was tachypneic, tachycardic and hypoxemic requiring 6 L/min of oxygen. He had recently underwent prostatectomy for prostate cancer. Past medical history was also significant for coronary artery disease treated with coronary bypass.

The chest x-ray (Figure 1) shows unilateral oligemia concerning for a pulmonary embolus and the CT angiogram of the chest (Figure 2) confirms the diagnosis.

While the chest radiograph is normal in the majority of pulmonary emboli, the 'Westermark sign' may be seen in up to 2% of the cases (1). It represents a focus of oligemia seen distal to a pulmonary embolism. The finding is a result of a combination of dilation of the pulmonary artery proximal to the thrombus and the collapse of the distal vasculature.

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Reference

1. Worsley DF, Alavi A, Aronchick JM, Chen JT, Greenspan RH, Ravin CE. Chest radiographic findings in patients with acute pulmonary embolism: observations from the PIOPED Study. Radiology. 1993;189(1):133-6. [CrossRef] [PubMed]