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# A Fatal Masquerade in Pneumonia: Ruptured Thoracic Aortic Aneurysm

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## Clinical Image

An 87-year-old man, non-smoker, was notable for hypertension and diabetes. His hospitalization one month ago was due to urinary tract infection. He presented to Emergency Department (ED) with fever, productive cough and hemoptysis for hours' duration. Hemodynamics was stable. Chest radiograph demonstrated air-space opacification over left upper lung (Figure 1A), with leukocytosis and elevated C-reactive protein noted in blood tests. Pneumonia was impressed and empiric antibiotics with amoxicillin-clavulanate was soon commenced. However, there's progression of consolidation over left upper lung noted 2 days after admission (Figure 1B). Despite defervescence, he had worsening hemoptysis despite no evident change in hemodynamics. Computed Tomography (CT) of chest demonstrated extravasation over thoracic aortic arch with perifocal inflammation, which was suggestive of a ruptured aortic aneurysm (Figure 2). The patient was then emergently scheduled for Endovascular Aneurysm Repair (EVAR). Pathologic examination of the excised aorta and lung tissues demonstrated transmural inflammation of thoracic aorta, hemobronchus and pulmonary hemorrhage (Figure 3).


**Figure 1A:** Chest radiograph of an 87-year-old man obtained in the emergent department, who presented with fever and hemoptysis. Air-space consolidation over left upper thorax was noted and nocosomial pneumonia was impressed

**Figure 1B:** Another chest radiograph was checked 2 days after admission for survey of worsening hemoptysis. Evident progression of opacification over left upper thorax was noted

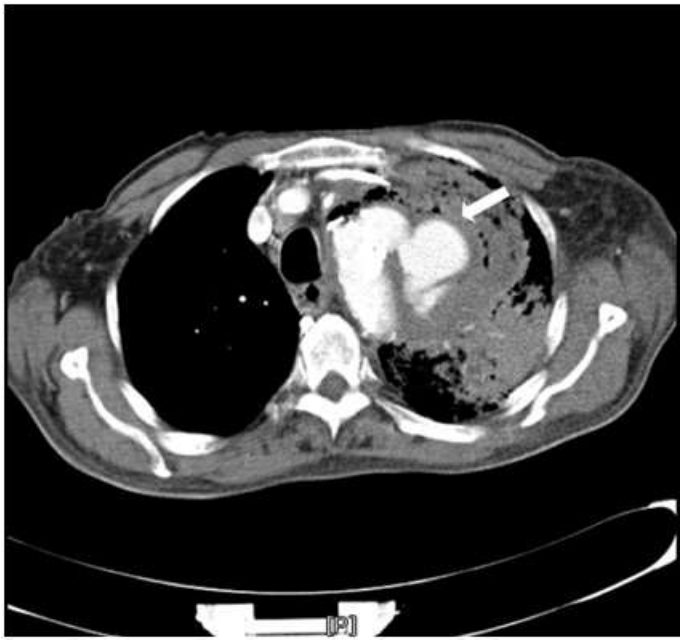

**Figure 2:** Computed tomography (CT) of chest performed 2 days after admission demonstrated one ruptured thoracic aortic aneurysm (arrow).

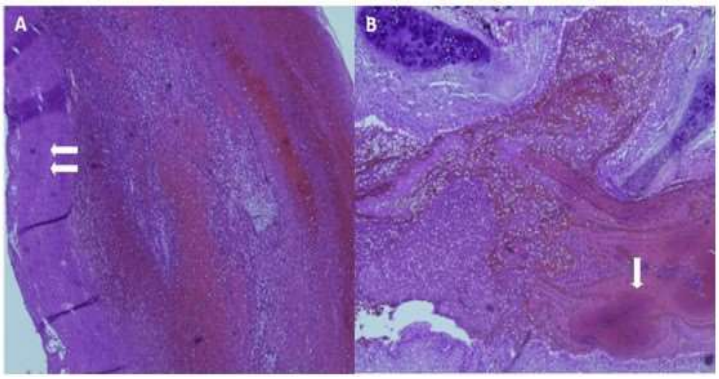


**Figure 3:** Surgical pathology demonstrated whole-layer inflammation of aortic wall (A, arrow) and hemorrhage into lung parenchyma, causing hemobronchus and pulmonary hemorrhage (B, arrow).

Ruptured thoracic aortic aneurysm carries a high mortality rate of 50-80% even with surgical intervention [1]. Risk factors of aortic aneurysm include genetic disorders (e.g., Marfan syndrome, Ehlers-Danlos syndromes) and various inflammatory or infectious processes [2]. It is important to note early signs of ruptured aneurysm, including a dilated aortic arch, syncope, or hemodynamic derangement. Hemoptysis, a rare presentation of ruptured thoracic aortic aneurysm, may occur with erosion of trachea by the aneurysm, or when the formed hemorrhage leaks into the bronchopulmonary trees, as evidenced by the thrombus content within the alveolar tissues in this case [3]. Transient fever in this patient was thought to be caused by the inflammatory response to the hematoma. The correct clinical diagnosis was hampered more or less by the initial impression of nosocomial pneumonia in this case. In conclusion, a high level of alertness to suspect ruptured aortic aneurysm should be raised in pneumonia involving mainly upper lungs with atypical presentations.

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