

## Introduction

- Cavitory lung lesions provide a nidus for *Aspergillus fumigatus* colonization, leading to aspergilloma formation.
- One approach to treatment involves a pneumonectomy. A known complication of pneumonectomy is a bronchopleural fistula, commonly treated with bronchoscopy.
- Pneumonectomy can also result in in-situ pulmonary artery thrombus formation.

## Case Description

A 59-year-old woman with a medical history of a chronic bronchopleural fistula secondary to an aspergilloma managed with a Clagett Window thoracostomy and pulmonary tuberculosis treated over 20 years ago presented with 2 days of hemoptysis and bleeding from the thoracostomy site.

**Past medical history:** Pulmonary Tuberculosis, Aspergilloma

**Physical examination:** Afebrile, tachycardic to 112 beats per minute, tachypneic to 40 breaths per minute, and had an oxygen saturation of 89% on room air which improved to 100% on 2L nasal cannula. Blood pressure was normal. Examination of her chest revealed thoracostomy incision draining serosanguinous fluid.

**In patient work-up:**

- **Initial Laboratory Analysis:** Normocytic Anemia (Hemoglobin 11.6 mg/dL, MCV 90.9 fL).
- **Chest X-Ray:** Small right lung volume with large cavitory lesion in Right Upper lung field, lower lobe infiltrates, and small right pleural effusion. See figure 1.
- **CT Pulmonary Embolism:** Large occlusive thrombus in the right main pulmonary artery, bronchopleural fistula extending from right main bronchus into the pleural cavity with collapse of the right lower lobe, peribronchial vascular nodular opacities in the left lung with atelectasis. See figure 2.

## Figures

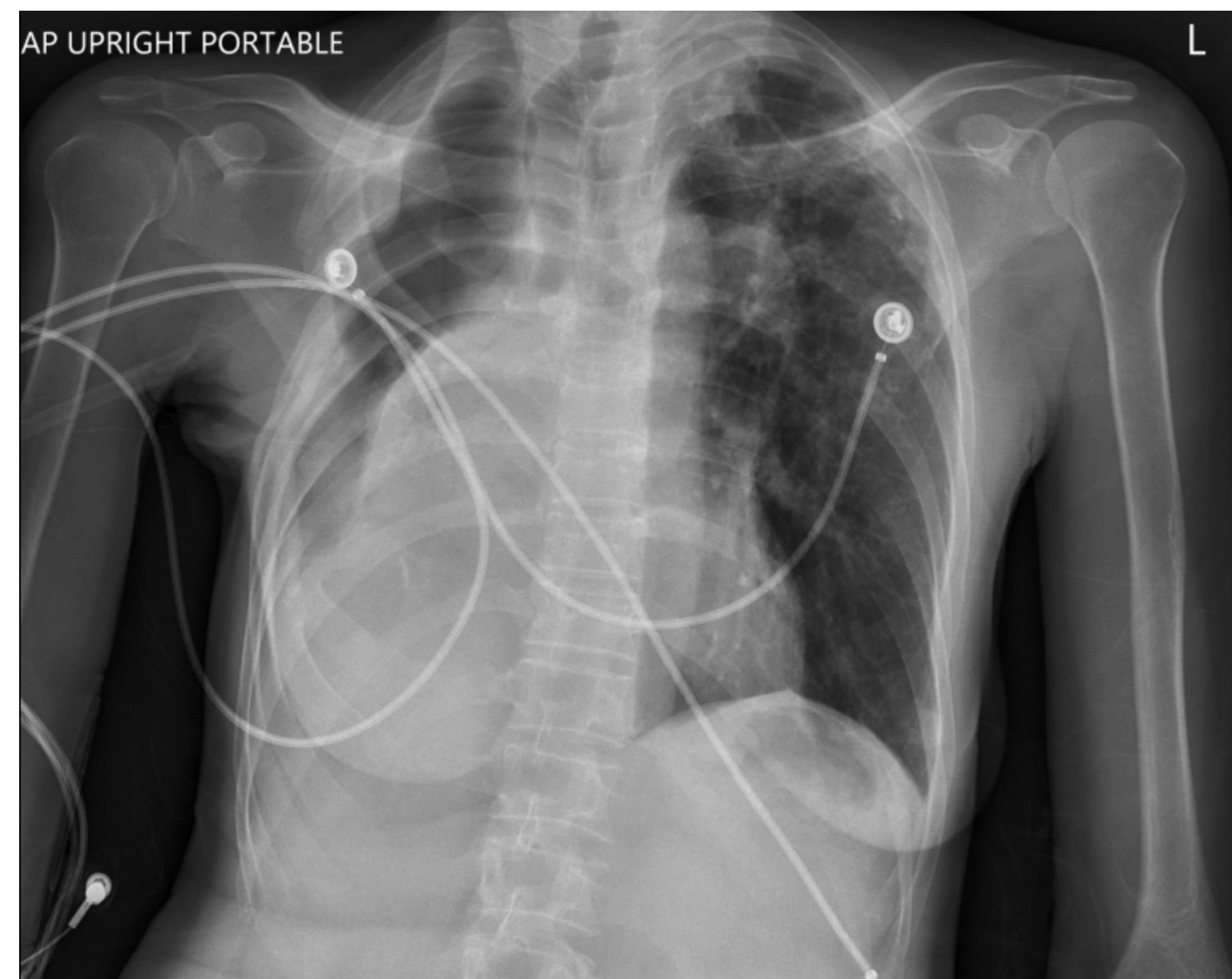


Figure 1. Chest X-Ray. There is a small right lung volume with large cavitory lesion in the right upper lung field. There are right lower lobe infiltrates/consolidations, and a small right pleural effusion.

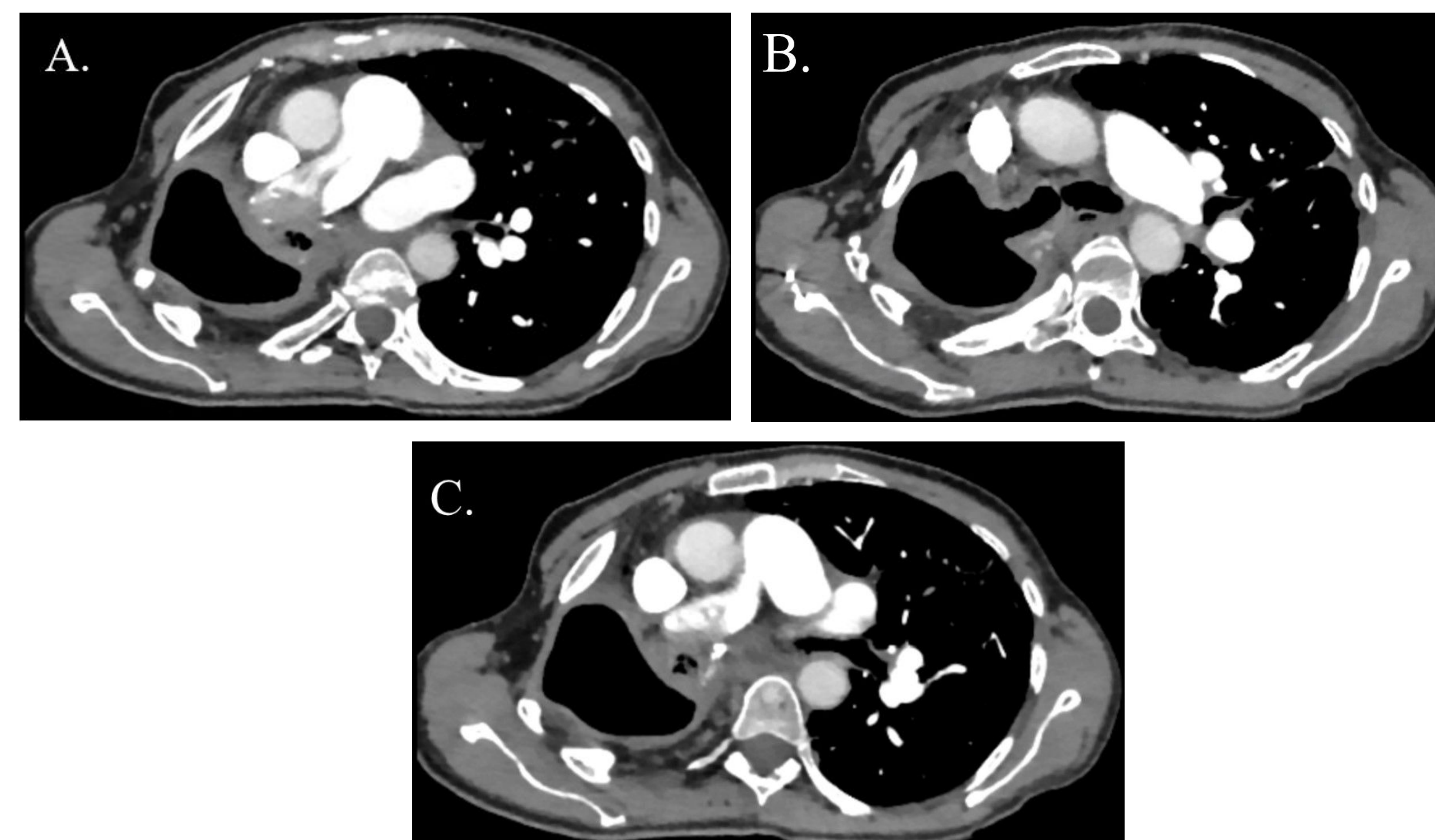


Figure 2: CT Pulmonary Embolism (axial slices). A. There is a large occlusive thrombus in the right main pulmonary artery with non-opacification of the intraparenchymal pulmonary arteries in the right lung. B. There is a bronchopleural fistula extending from the right main bronchus into the pleural cavity with collapse of the right lower lobe. C. There are peribronchial vascular nodular opacities in the left lung, associated with atelectasis.

## Discussion

- This case demonstrated significant challenges in the decision to anticoagulate a patient with hemoptysis and pulmonary thrombus of unknown etiology.
- Typical treatment of a pulmonary embolism consists of anticoagulation, however if anticoagulation is contraindicated alternative strategies such as an Inferior Vena Cava Filter or thrombectomy can be implemented.
- Active hemoptysis poses a contraindication to initiating anticoagulation therapy, whereas anticoagulation is the standard management of a pulmonary embolism. The unknown etiology of the embolus further complicates the issue.
- The patient was trialed on multiple attempts of anticoagulation with Lovenox, however these attempts were unsuccessful due to recurrent episodes of hemoptysis.
- There was consideration that the thrombus was formed in situ as the body's natural response to stop the bleeding as opposed to an embolus. In which case, anticoagulation would not have been the best approach.
- Considering the presence of multiple risk factors of pulmonary embolism, including history of DVT and presentation with hemoptysis and tachycardia, added to this condition being significantly more prevalent than the other, we ruled out this hypothesis.

## References

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3. Wang Z, Pei C, Ma L, Wang D, Zhou J, Wang W, Shen J, Xu Z, He J. Acute pulmonary embolism after pneumonectomy. *J Thorac Dis.* 2012 Feb;4(1):76-82. doi: 10.3978/j.issn.2072-1439.2011.10.02. PMID: 22295170; PMCID: PMC3256553.