

Unusual Case of Pleural Effusion and Respiratory Distress Linked to Foreign Body Aspiration: A Case Report

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Introduction

- Pleural effusions are a common clinical issue, with 1.5 million annually diagnosed in the U.S.
- Causes include congestive heart failure, infections, malignancies, and pulmonary embolism.
- Rare cases involving foreign body aspiration present unique diagnostic and therapeutic challenges.

Case

A 61-year-old male with a medical history of coronary artery disease, post-coronary artery bypass graft, insulin-dependent diabetes, and chronic obstructive pulmonary disease presented to Ascension St. Mary's Hospital. He was a long-term smoker and moderate drinker, with no illicit drug use and an unremarkable family history of major health issues. His admission on August 4 followed complaints of pleuritic chest pain, shortness of breath, cough, and nonproductive sputum, compounded by a recent thoracic injury from an assault. A chest CT scan showed a large right pleural effusion, dense atelectasis, near right lower lobe collapse, secretions in the right lower lobe bronchus, and healing rib fractures. Lab tests showed leukocytosis and elevated D-dimer levels.

A cardiothoracic surgery team transferred the patient to AGH for advanced management. The patient continued to experience symptoms such as chest congestion, severe left upper quadrant pain that coughing exacerbated, and a fever. Diagnostic procedures included the placement of a pigtail catheter, adjusted multiple times due to drainage challenges, and a bronchoscopy with endobronchial ultrasound. The bronchoscopy identified and removed a foreign body in the right lower lobe bronchus—a piece of aluminum foil inhaled three months earlier. Biopsies showed an inflamed bronchial mucosa, negative for malignancy. Serial chest x-rays monitored the right pleural effusion, noting a slight decrease in size but a continued presence of fluid and atelectasis. Despite initiating TPA/dornase therapy for catheter complications, the patient refused the final recommended dose. We discharged him in a stable condition, providing instructions for catheter maintenance and arranging follow-up appointments with pulmonology and primary care. His hospital stay was marked by catheter issues, persistent pleural effusion, the complexity added by the foreign body, and his refusal to complete therapy.

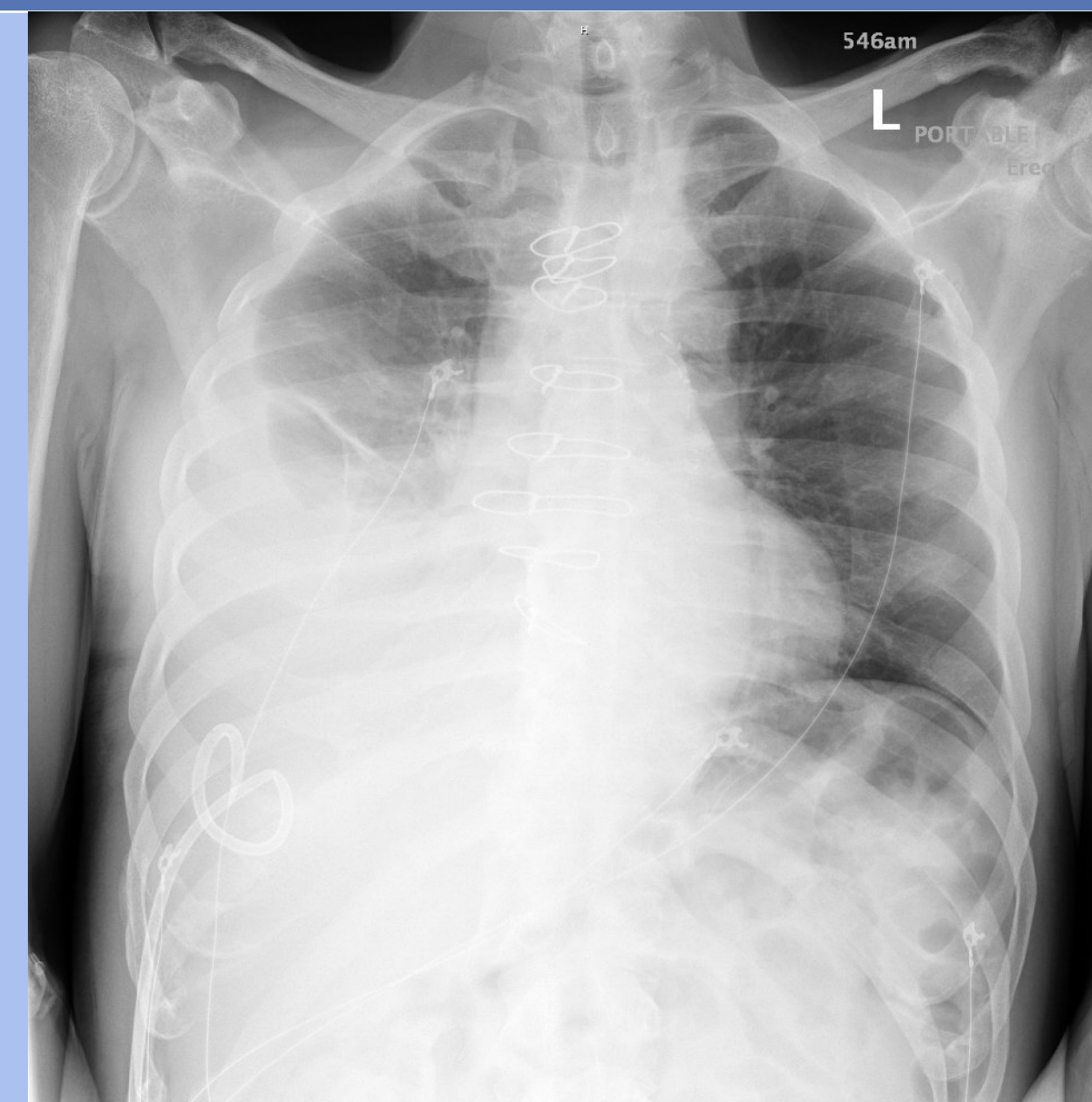


Figure 1: Initial chest X-Ray demonstrating large right pleural effusion

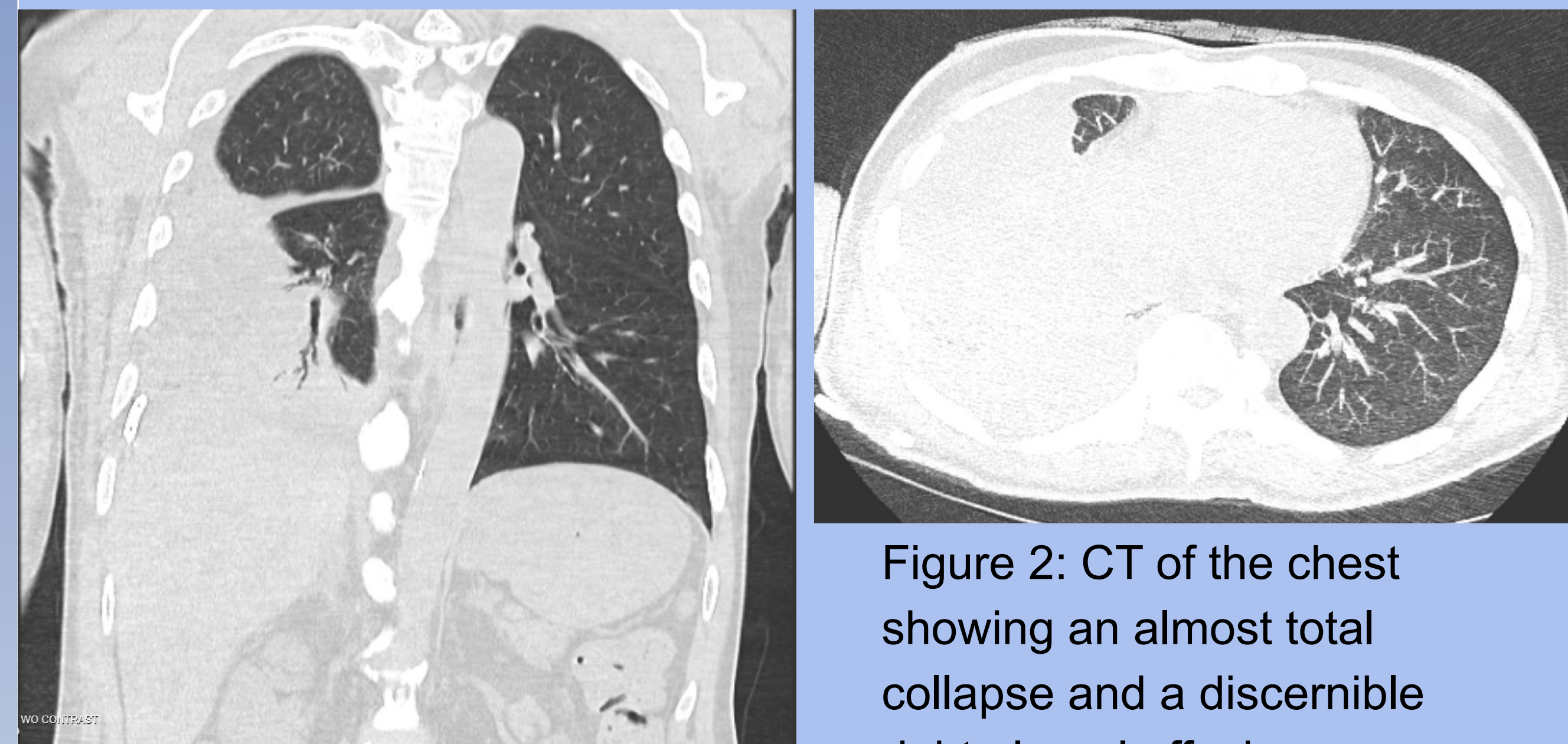


Figure 2: CT of the chest showing an almost total collapse and a discernible right pleural effusion



Figure 3: Tin foil wrapper observed during bronchoscopy in right lower lobe

Discussion

This case is unique due to the rare occurrence of foreign body aspiration leading to significant pleural effusion and respiratory distress. The delayed presentation post-trauma, coupled with the patient's extensive smoking history and COPD, complicated the diagnostic process. The resolution of symptoms following the removal of the foreign body highlights the importance of considering atypical causes in patients with complex histories and non-resolving pulmonary symptoms.

Conclusion

This case underscores the significance of a thorough diagnostic evaluation in patients presenting with pleural effusion and respiratory distress, especially in the context of trauma and atypical clinical courses. The successful identification and removal of the foreign body, in this case, was pivotal in symptom resolution, emphasizing the need for a high index of suspicion for foreign body aspiration in similar clinical scenarios.

References

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