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(CASE REPORT)

Massive Left Hemopneumothorax: A Case Report

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Abstract

Spontaneous hemopneumothorax (SHP) is an uncommon but potentially life-threatening complication of spontaneous pneumothorax. We report the case of a 22-year-old male, chronic smoker with a 5 pack-year history, who developed a massive left-sided hemopneumothorax four years after a previous pneumothorax. This article describes his clinical presentation, investigations, management, and outcome, and reviews the literature on SHP. Early recognition and prompt surgical intervention are crucial to preventing morbidity and mortality.

Keywords: Spontaneous Hemopneumothorax; Chest Tube Drainage; Thoracic Surgery; Smoking

1. Introduction

Primary spontaneous pneumothorax (PSP) typically affects young, tall, thin males and is strongly associated with smoking. Spontaneous hemopneumothorax (SHP) defined as the simultaneous presence of air and a significant amount of blood within the pleural cavity without trauma is a rare but serious complication of PSP. The reported incidence ranges from 0.5% to 12% of PSP cases. SHP may cause rapid hemodynamic compromise due to acute blood loss, making early recognition and management essential.

We describe a case of massive SHP in a young chronic smoker with a previous history of left-sided PSP.

2. Case presentation

A 22-year-old male engineer with a 5 pack-year smoking history presented to the emergency department with sudden, sharp left-sided chest pain and severe dyspnea. He had experienced a left spontaneous pneumothorax four years earlier, treated with needle aspiration.

On arrival, he was in respiratory distress: blood pressure 90/55 mmHg, heart rate 130 bpm, respiratory rate 30/min, and SpO_2 82% on room air. Physical examination revealed absent breath sounds and hyper-resonance over the left hemithorax, with rightward tracheal deviation.

Chest X-ray showed a large left hydropneumothorax with near-total lung collapse and mediastinal shift. CT confirmed massive hemopneumothorax with suspected active bleeding from apical pleural blebs. Laboratory tests revealed hemoglobin 7.8 g/dL, WBC 11,000/mm^3, and normal coagulation.

An 18 Fr Joly chest tube was inserted, immediately draining 1,200 mL of blood and air. Persistent hypotension and tachycardia necessitated blood transfusion, and the patient was transferred for emergency thoracic surgery.

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Intraoperatively, 1.8 L of clotted blood was evacuated. A ruptured apical bleb and bleeding vascular adhesion were identified and controlled. The surgeon performed bleb resection and mechanical pleurodesis, achieving full lung re-expansion.

His postoperative course was uneventful, and he was discharged on day 8. At 6-month follow-up, he remained asymptomatic with no recurrence.

3. Discussion

SHP is a rare but potentially fatal complication of PSP. It typically occurs in young male smokers and is most commonly caused by rupture of vascularized pleural adhesions or apical blebs. Incidence estimates vary from 0.5% to 12% of PSP cases.

The study of Kakaris et al. (Eur J Cardiothorac Surg, 2004) reported 71 cases, predominantly among male patients (63/71) with a mean age of 34 years and frequent smoking history. Hsu et al. (Ann Thorac Surg, 2005) described 27 cases with an average intrapleural blood loss >1 L.

Clinically, SHP often presents with sudden chest pain, dyspnea, and signs of hypovolemia. Initial chest drainage is essential for diagnosis and stabilization, but ongoing bleeding or hemodynamic instability mandates urgent surgery.

Current guidelines support early video-assisted thoracoscopic surgery (VATS) whenever feasible. VATS allows effective evacuation of clots, hemostasis, bleb resection, and pleurodesis with lower morbidity. In unstable patients, open thoracotomy remains the preferred approach. Early surgical management significantly reduces recurrence risk and shortens hospital stay.

Prognosis is generally excellent with prompt treatment. Mortality, historically reported as high as 30%, is now rare.

This case underscores the importance of maintaining a high index of suspicion for SHP in young smokers with acute chest symptoms, especially those with a history of pneumothorax. Smoking cessation remains a key preventive measure.

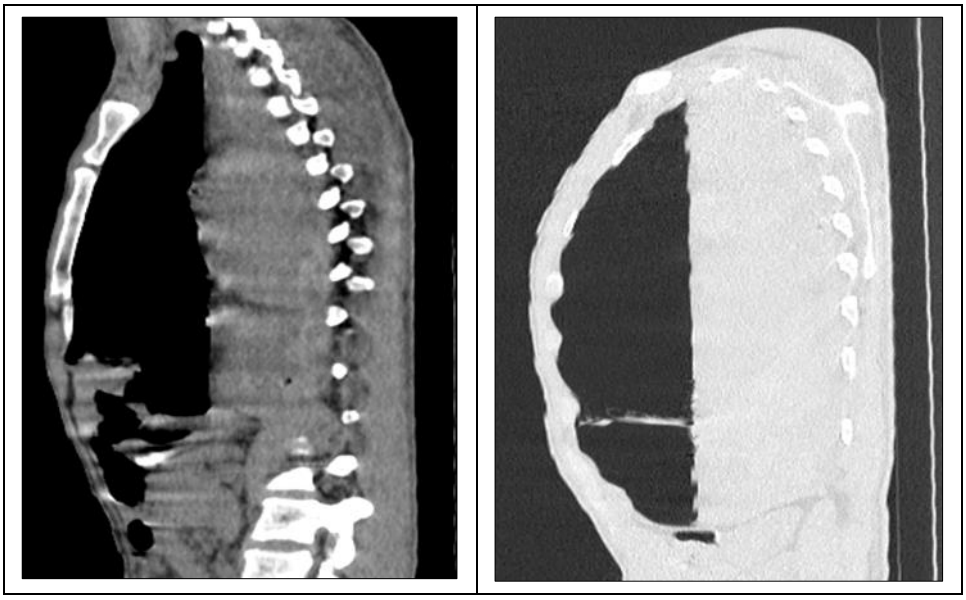

Figure 1 Sagittal sections with parenchymal and mediastinal windows showing a large hemopneumothorax with adhesions

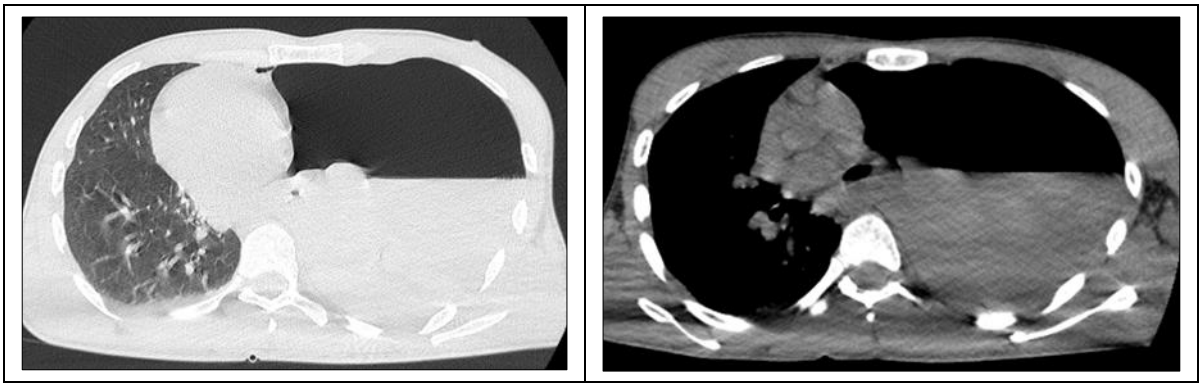

Figure 2 Axial sections with parenchymal and mediastinal windows showing a large compressive hemopneumothorax with adhesions

4. Conclusion

Spontaneous hemopneumothorax, although rare, should be suspected in young patients presenting with acute chest pain, dyspnea, and radiographic evidence of hydropneumothorax. Rapid diagnosis, adequate pleural drainage, and timely surgical intervention are critical for favorable outcomes.

This case highlights the importance of early recognition and reinforces the need for smoking cessation in preventing recurrence.

Compliance with ethical standards

Disclosure of conflict of interest:

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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