

## AB025. Video-assisted thoracoscopic surgery for an impending tension pneumomediastinum

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**Abstract:** A 65-year-old man presented with progressive exertional dyspnea and neck swelling without precipitating factors such as vigorous vomiting or coughing. He related no recent history of thoracic trauma or foreign body ingestion. He was conscious and oriented, and his vital signs showed a heart rate of 90 beats/min, blood pressure of 130/80 mmHg, respiratory rate of 20 breaths/min, and peripheral oxygen saturation of 95% on room air. Laboratory investigations did not reveal any abnormalities. He reported a history of pulmonary tuberculosis with completion of treatment 20 years ago. A chest X-ray showed neck emphysema, pneumomediastinum, and the right lung showed findings highly suggestive of post-tuberculous destruction of the lung parenchyma. Fiberoptic bronchoscopy revealed no tracheobronchial tree injury, and an esophagram showed no extravasation of contrast dye through the upper digestive tract. Supplemental oxygen was administered initially with close monitoring. Follow-up chest computed tomography (CT) was obtained 2 days later owing to worsening of his neck swelling, generalized emphysema, and labored breathing despite administration of oxygen therapy. CT demonstrated extensive subcutaneous and mediastinal emphysema, as well as mild bilateral pneumothorax. Moreover, massive accumulation of anterior

mediastinal free air causing mild flattening of the anterior cardiac contour was also evident. His hemodynamic status actually had a slight change other than the worsening of respiratory symptoms. His systolic blood pressure dropped from 140 to 100 mmHg and pulse rate increased from 80 to 100 bpm on average, causing mild hemodynamic instability, after which he complained of increasing shortness of breath, chest tightness, dysphagia, and hoarseness. The patient was taken to the operating room and underwent early VATS due to the concern for progressive build-up of mediastinal free air, which could precipitate tension pneumomediastinum and hemodynamic instability. We adopted a left-sided approach to avoid encountering severe intrapleural adhesions on the contralateral side. Left-sided thoracoscopy detected extensive pneumomediastinum, and a mediastinotomy was performed to decompress the impending tension mediastinal emphysema. Furthermore, dense intrapleural adhesions were visualized on the right side following thoracoscopic mediastinal dissection. The left lung did not demonstrate any identifiable bleb/bullae or air leaks under saline immersion. Postoperatively, smooth endotracheal extubation was achieved. Generalized emphysema was seen to gradually resolve with use of continuous negative-pressure water-seal aspiration via the thoracostomy tubes. The patient was discharged home on postoperative day 15 following an uneventful postoperative recovery. The chest radiograph at discharge was unremarkable for major abnormalities.

**Keywords:** Tension pneumomediastinum; spontaneous pneumomediastinum; video-assisted thoracoscopic surgery (VATS)

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