A 17-yr-old female presented with increasing dyspnea 10 months after a right pneumonectomy. Chest radiograph (fig. A) revealed rightward shift of the heart and mediastinum with left lung hyperexpansion and tracheal deviation, consistent with postpneumonectomy syndrome. She underwent thoracotomy and mediastinal repositioning by insertion of saline-filled prostheses into the right hemithorax (arrows, fig. B).

Postpneumonectomy syndrome is a rare, life-threatening complication caused by extreme rotation and shift of the mediastinum after pneumonectomy. Compression of distal trachea and main bronchus results in central airway compression and dynamic airway obstruction. Patients present with progressive dyspnea, stridor, and recurrent respiratory infections. Symptoms occur weeks to years after pneumonectomy. Diagnosis is based on imaging and bronchoscopy. Treatment consists of insertion of saline-filled prostheses within the empty hemithorax to reposition the mediastinum and alleviate the bronchial compression.1

Potential anesthetic challenges in postpneumonectomy syndrome include difficult airway management due to tracheal deviation, difficult passage of the endotracheal tube caused by airway compression, hypoxemia and hypercapnia secondary to one-lung ventilation and increased respiratory dead space in lateral position, and hemodynamic compromise due to decreased venous return.2,3 Excessive administration of intravenous fluids can cause increased shunting and pulmonary edema. Therefore, fluid administration should be judicious. Use of lung-protective strategy with smaller tidal volumes (i.e., 5–6 ml/kg ideal body weight), limiting plateau pressure to less than 25 cm H₂O, and application of positive end-expiratory pressure is recommended in an attempt to prevent acute lung injury and atelectrauma.3

Competing Interests
The authors declare no competing interests.

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References

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