Apical Bullae and Spontaneous Pneumothorax


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A 19-yr-old man (64 kg, 188 cm) with a history of left spontaneous pneumothorax was admitted after complaints of sudden pleuritic chest pain and dyspnea. Chest radiograph revealed left-sided pneumothorax (fig. A). A pleural drain was inserted, and he was scheduled for video-assisted thoracic surgery and bullectomy.

After induction with propofol, fentanyl, and rocuronium, the trachea was intubated with a single lumen, cuffed endotracheal tube. Anesthesia was maintained with desflurane in 100% oxygen. He was placed in a right lateral decubitus position. To aid surgical visibility, carbon dioxide, 7–10 mmHg, was insufflated into the pleural cavity and the patient’s tidal volumes reduced to 5 ml/kg. Mechanical breaths were set to a rate of 30–35 breaths/minute to compensate for hypercarbia caused by low tidal volumes. Apical bullae were identified via thoracoscopy, and bullectomy was performed (fig. B) followed by chest tube placement and uneventful trachea extubation. The patient recovered without incident in the postanesthesia care unit and was discharged home on postoperative day 3. Video-assisted thoracoscopic bullectomy is possible with two lung ventilation, minimal tidal volumes, and an increased respiratory rate to compensate for hypercarbia.

References