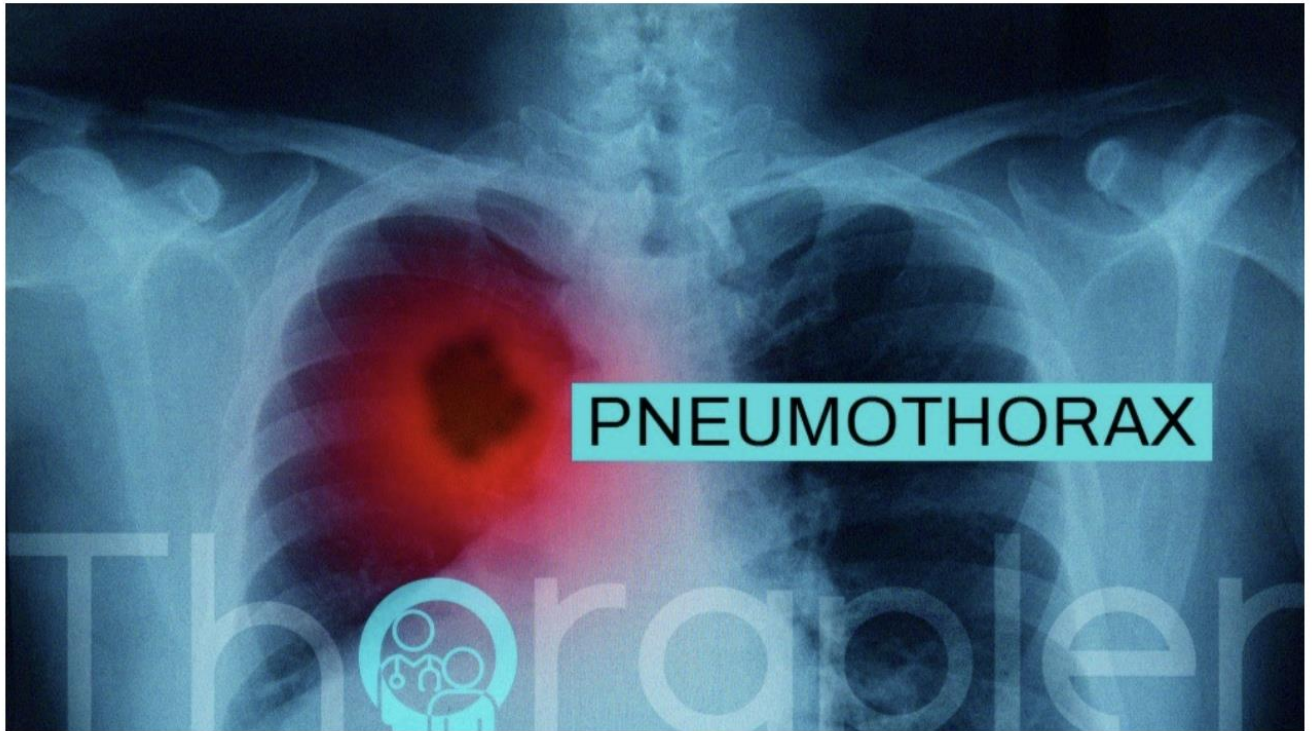




THORAPLER in Thoracoscopic Resection of Adolescent Pneumothorax

April 20, 2026

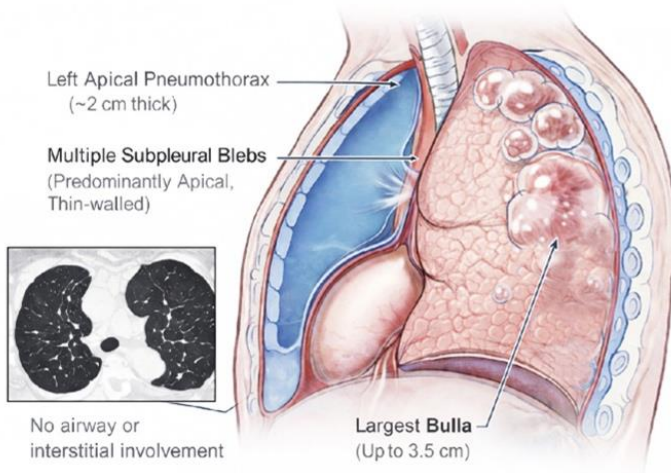


I. Case Background

A 13-year-old girl was admitted as a **Scheduled Admission** from the Department of Paediatric Surgery with a history of **recurrent left apical pneumothorax**.

Clinical Timeline

- **February 2026:** First episode of left apical pneumothorax
- **March 2026:** Recurrence with similar presentation
- Both episodes initially resolved spontaneously without intervention



■ Imaging Findings (Chest CT – Feb. 2026)

- Left apical pneumothorax (~2 cm thickness, sagittal plane)
- **Multiple subpleural blebs predominantly biapical**, thin-walled
- Largest bulla: **up to 3.5 cm**
- No airway or interstitial lung disease
- No mediastinal abnormalities or pleural effusion

Minimal residual left apical pneumothorax with multiple biapical subpleural bullae, without associated parenchymal abnormalities.

II. Preoperative Assessment and Anatomical Considerations

| Key Anatomical Challenges

- Lesions located at lung apex (restricted operative angle)
- Thin paediatric lung parenchyma
- Multiple clustered blebs with partial confluence
- Risk of air leakage after resection

★ Case Special:

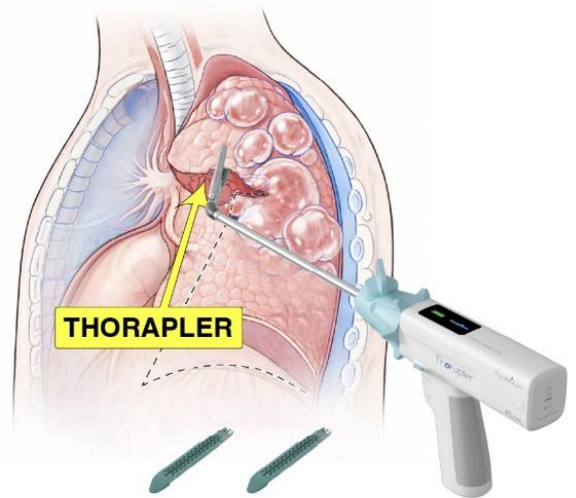
- Fragile tissue prone to tearing
- Difficulty in achieving **uniform compression**
- Need to minimize resection volume while ensuring **complete removal of bullae**

III. Surgical Approach and Key Techniques

A left thoracoscopic procedure was performed. Multiple apical blebs within a confined operative space and fragile parenchyma presented technical challenges for exposure and controlled resection. Wedge resection was achieved, and a chest drain was placed.

■ Application of THORAPLER Stapler

In this case, lung parenchymal transection was completed with only two green reloads, demonstrating an efficient and tissue-preserving approach, especially in the setting of delicate paediatric tissue and limited anatomical space.



Lung parenchyma transection using only two green reloads

✓ Enhanced Operative Efficiency

- Completion with **only 2 reloads**
- **Shorter transection line** and improved procedural precision

✓ Optimized Tissue Preservation

- Fewer staple firings → **less parenchymal sacrifice**
- Greater preservation of healthy lung tissue, **particularly important in paediatric lung parenchyma**

✓ Precise Alignment in Limited Apical Space

- Accurate staple placement in confined apical regions
- **Especially beneficial in pediatric patients with smaller thoracic cavities**

✓ Reduced Air Leak Risk

- Stable two-row staple line formation
- Effective sealing of **subpleural bleb resection margins**



CLICK  to watch the full procedure video

IV. Postoperative Outcome

- Chest drain maintained for **4 days**, removed without complications
- Full lung re-expansion confirmed on X-ray
- No fever, no respiratory distress
- Normal bilateral air entry
- Wound healing satisfactory

The patient demonstrated a favourable recovery and was discharged in stable condition.

Key Takeaway

In this adolescent pneumothorax case, THORAPLER enabled lung parenchyma transection using only two green reloads, an efficient surgical technical solution that demonstrates a 2-row stapling strategy is sufficient and optimal for safe, precise, and tissue-preserving resection.