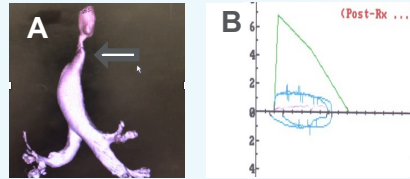


Features

- **Prevalence:** 15% to 19% in previously intubated patients; of these, 1% to 5% are symptomatic
- **Etiology:** Mucosal damage from pressure or infection
- **Morphology:** Cicatricial stenosis, with or without malacia, granulation tissue
- **Location:** Cervical, midtrachea, subglottis
- **Extent:** Usually 1 to 4 cm



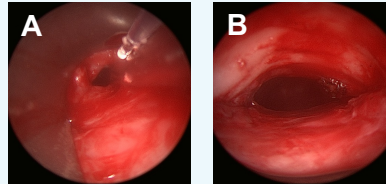
Multilevel complex PITS (arrow) seen on virtual bronchography (A). Fixed upper airway obstruction pattern on flow volume loop (arrow) seen with fibrotic PITS (B).

Risks

- Prolonged mechanical ventilation, typically >14 days
- High cuff pressures (>30 cm H₂O)
- Microbial inflammation with bacteria and viral tracheitis
- Acid reflux, diabetes, obesity, glucocorticoid use
- Prone positioning

Identification

- **Symptoms:** Dyspnea, initially with exertion and later at rest; stridor; dysphagia; cough; difficulty raising secretions; respiratory distress
- **Studies:** Bronchoscopy, neck and chest CT imaging, pulmonary function testing



Critical PITS before (A) and after (B) laser-assisted rigid bronchoscopic dilation.

Prevention

- Maintain tracheal cuff pressure 20 to 30 cm H₂O and monitor every shift
- Elevate head of bed >30 degrees
- Treatment of superimposed tracheitis
- Consider avoiding large (≥ 8) endotracheal tube (ETT)
- Verify appropriate ETT placement (3 to 5 cm above the carina), especially after repositioning or transport

PITS is increasingly recognized in survivors of severe COVID-19, often weeks to months after discharge. It may be misdiagnosed as asthma or a COPD exacerbation.