**Introduction**

- Congenital tracheal malformations are rare, but have significant morbidity in infants and children.
- Abnormal tracheal development likely occurs at 8 weeks of gestation.¹
- In approximately 1 in 64,500 births, the traditional C-shaped cartilage is fused posteriorly to form a complete tracheal ring. Complete tracheal rings account for 0.3% to 1% of all laryngotraheal stenosis and are the most common cause of congenital tracheal stenosis.¹

**Case History**

**Patient History**
- A six-year-old male with Down syndrome and complete tracheal rings was scheduled to undergo slide tracheoplasty.
- Previous direct laryngoscopy by the ENT service identified the middle third of his trachea had complete tracheal rings 3 cm in length.
- The patient had numerous anesthetics without complications and had been an easy intubation.

**Case Details**
- Anesthesia was induced via a standard inhalational induction.
- A peripheral IV, arterial line and a central line were inserted.
- The surgical team performed a direct laryngoscopy and a 4 cm segment of about six to seven complete tracheal rings were identified.
- A 4.0 Microcuff endotracheal tube was placed cephalad to the tracheal rings.
- A median sternotomy was performed and the trachea was divided sharply.

**Follow Up**
- He was taken to the intensive care unit for further monitoring.
- He remained stable from a respiratory standpoint throughout the remainder of his hospital course and was discharged home on postoperative day eight.

**Discussion**

- Surgical manipulation of a patient’s airway can lead to complex anesthetic considerations.
- In one study with 40 children, all tracheal reconstructions were performed with cardiopulmonary bypass.³
- This case highlights slide tracheoplasty can be performed without the need for bypass under certain circumstances.⁴
  - Tracheal stenosis only in the proximal 2/3 of the trachea.
  - No concomitant cardiovascular lesion that would require repair.
- In order to perform such a complex procedure in this manner, communication must be maintained between the anesthesiologist, surgeon, and nursing staff.

**References**