INTRODUCTION

Foreign bodies present unique challenges to securing the airway including:
- Maintaining spontaneous ventilation
- Maintaining vascular access without significantly worsening obstruction

CASE ONE

- 2 yo girl fell on 12 cm sewing needle which became lodged in peritonsillar soft tissue (see image 1).
- Computed Tomography (CT) revealed proximity to external carotid artery.
- Limited mouth opening, copious drooling and uncooperative.
- 0.5 mg/kg IM Ketamine to facilitate securing vascular access then Propofol infusion started (with blood in the room).
- ETT placed through right nare into oropharynx delivering Sevoflurane in 100% Oxygen administered, patient kept spontaneously ventilating.

AIRWAY FOREIGN BODY PRESENTATION

- Clinical
  - Prominence of right tracheobronchial tree
  - 70% witnessed
  - 70-90% organic
  - Cough, wheezing, stridor, dyspnea, cyanosis, asphyxia
- Imaging
  - Normal CXR: 30-40%
  - 80% non-opaque
  - Obstructive emphysema
  - Mediastinal shift
  - Pneumomediatinum
- Consider CT
- Differential Diagnosis
  - Asthma
  - Bronchitis
  - Pneumonia
- Treatment
  - Bronchoscopic removal

THE ROLE OF KETAMINE

- Pharmacology:
  - NMDA receptor antagonist
  - Activity at mu, kappa opioid receptors
  - Mucosal, nicotinic, monoamine oxidase antagonist
  - Local anesthetic properties at high doses
  - Potent bronchodilator
  - Favorable hemodynamic profile
  - Anesthesia and analgesia
  - Preserves respiratory drive
  - Valuable adjunct to obtain venous access when agitated child may worsen airway obstruction or cause vascular injury, as presented.
- 4 mg/kg IM superior to 1 mg/kg IV

INTRAOPERATIVE FACTORS

- <42% mortality rate during bronchoscopy.
- Spontaneous ventilation paramount if foreign body precludes mask ventilation/supraglottic airway device.
- Positive pressure ventilation controversial: ball valve obstruction.
- Most prefer inhalated over IV inductions but no difference in mortality.
- Complications: severe laryngal edema, bronchospasm, pneumothorax, pneumomediastinum, cardiac arrest, tracheal/bronchial laceration, anoxic brain injury.
- If foreign body dropped during removal, may cause complete obstruction - push distal with bronchoscope.
- If close to vascular structures, be prepared for massive transfusion.

REFERENCES