Button Batteries: Clinical and Surgical Perspective

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Clinical Challenges

• Many pediatric foreign body ingestions or placement into nasal cavity or ear canal are unwitnessed
• Many children are asymptomatic or have non-specific symptoms
  – Cough
  – Poor oral intake
  – Fever
  – Irritability
  – Vomiting
• Often a delay in diagnosis
Coins vs Batteries
Imaging
Normal Right Nasal Cavity
Right Nasal Cavity Button Battery
Nasal Button Battery
Esophageal Foreign Body
Esophageal Button Battery
Evaluation of the Airway
Tracheoesophageal Fistula

Grisel et al. Acquired tracheoesophageal fistula following disc-battery ingestion
Severe Esophageal Injury
Bilateral Vocal Cord Paralysis
Vocal Cord Function
2 y/o child with symptoms of cough, fever, vomiting

Esophageal Perforation

Aortoesophageal Fistula

Summary of Complications

• Ear Canal
  – Ear drum perforation, hearing loss, facial nerve paralysis

• Nasal Cavity
  – Nasal septal perforation, scar tissue formation

• Esophagus
  – Mucosal burns to complete perforation
  – Mediastinitis
  – Esophageal stenosis

• Vocal cord paralysis

• Tracheoesophageal fistula

• Aortoesophageal fistula