

Button Batteries: Clinical and Surgical Perspective

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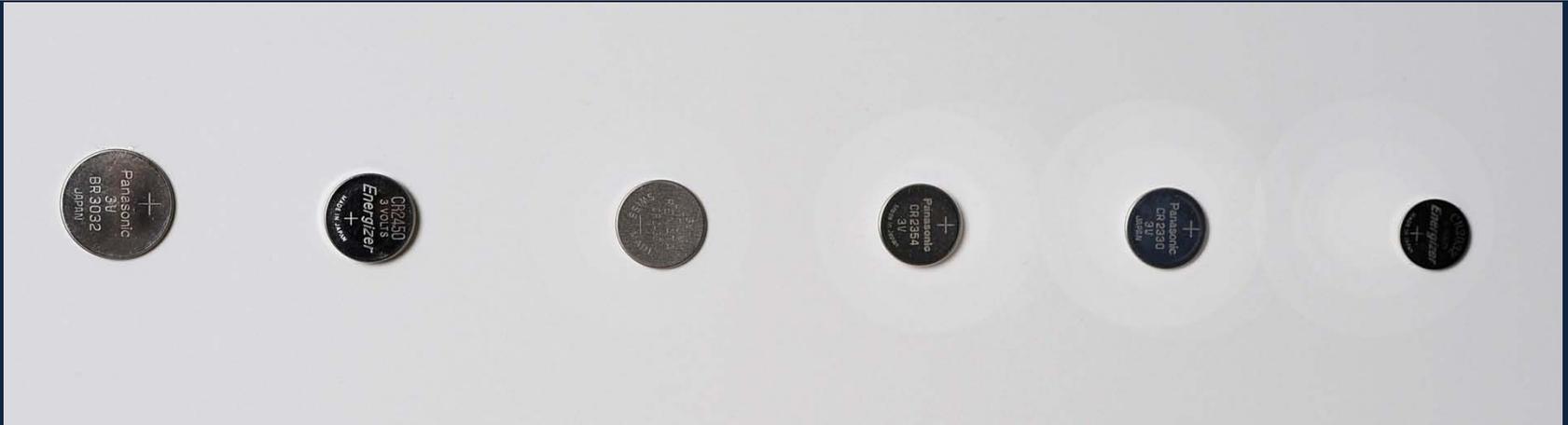
The Ohio State University

Nationwide Children's Hospital

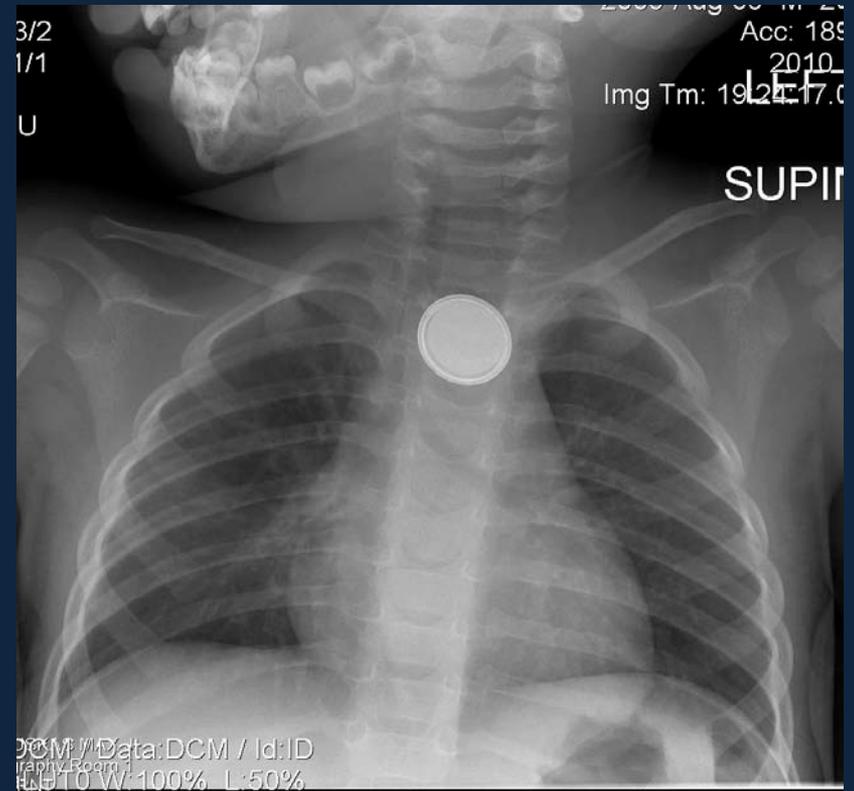
Clinical Challenges

- 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



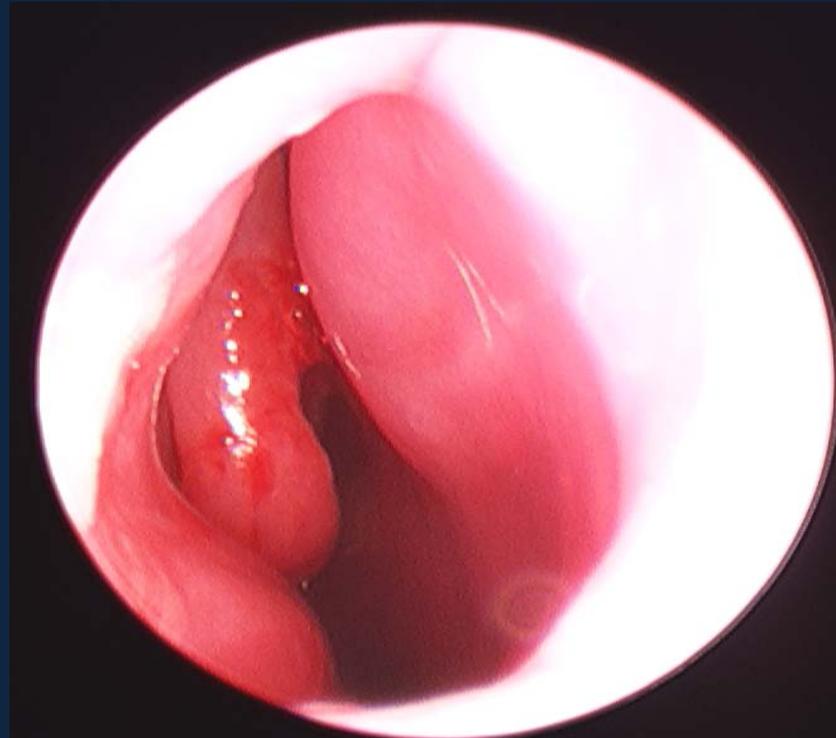
Imaging



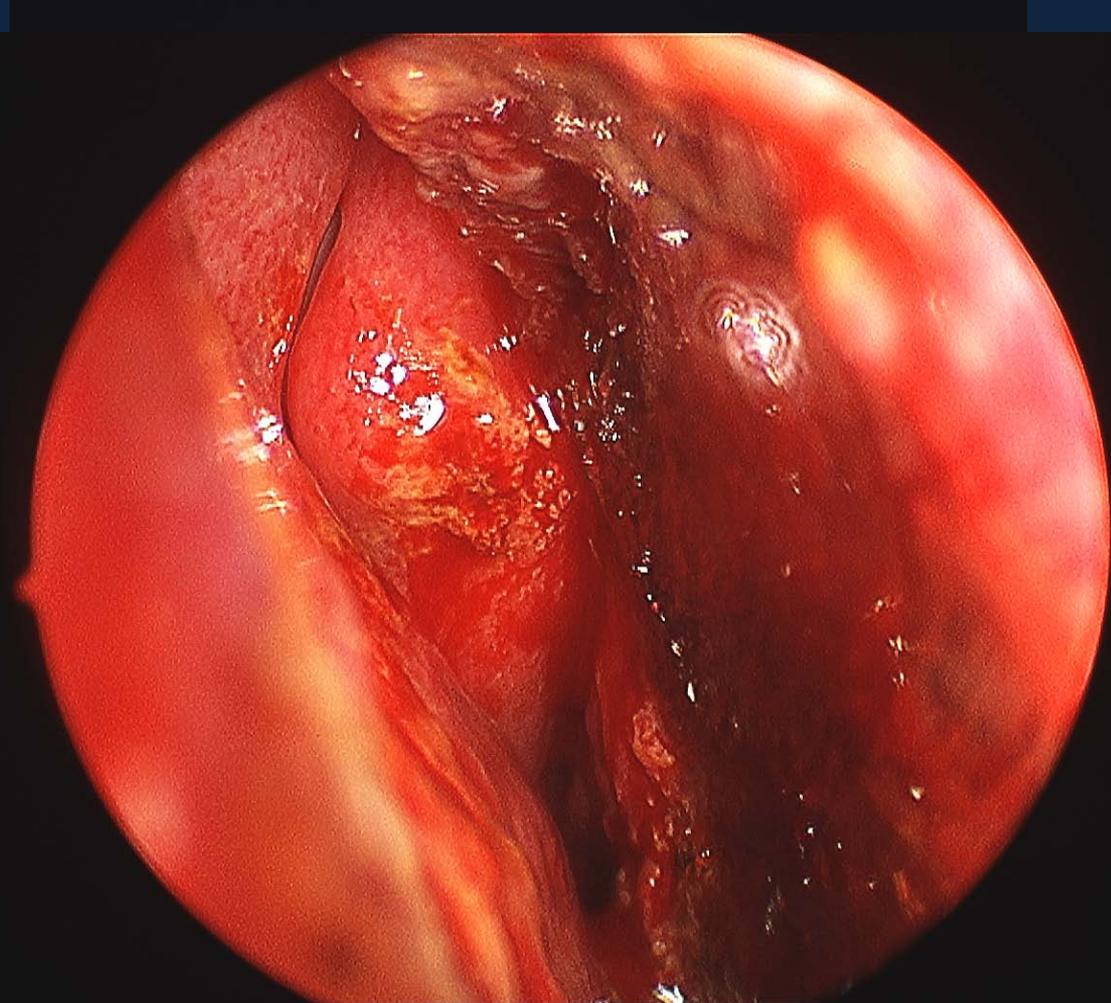
Imaging



Normal Right Nasal Cavity



Right Nasal Cavity Button Battery



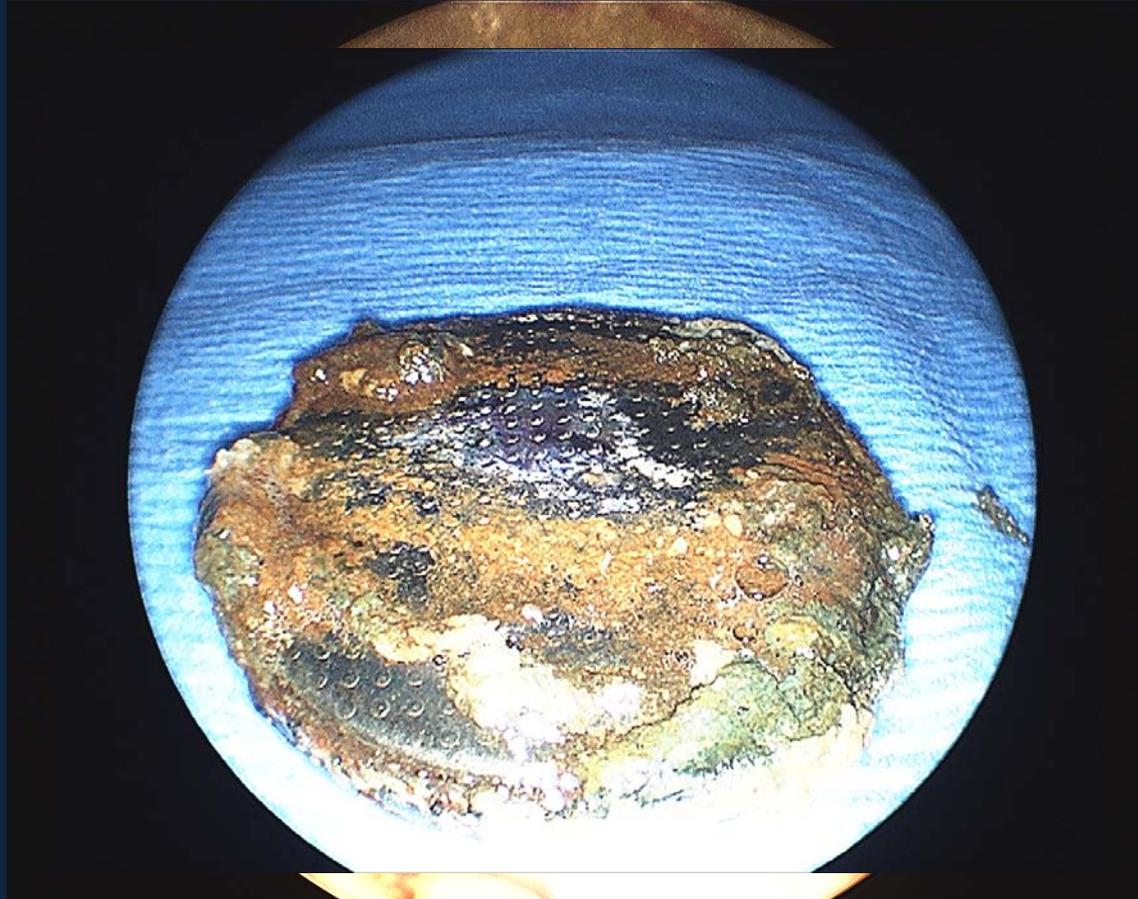
Nasal Button Battery



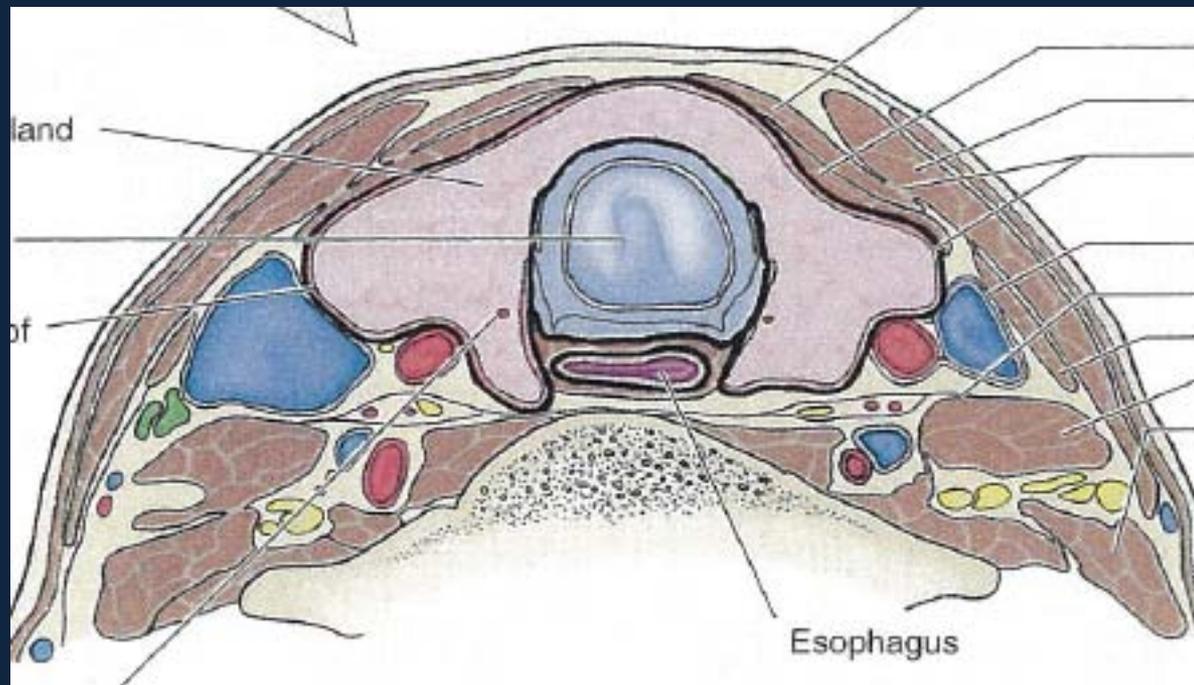
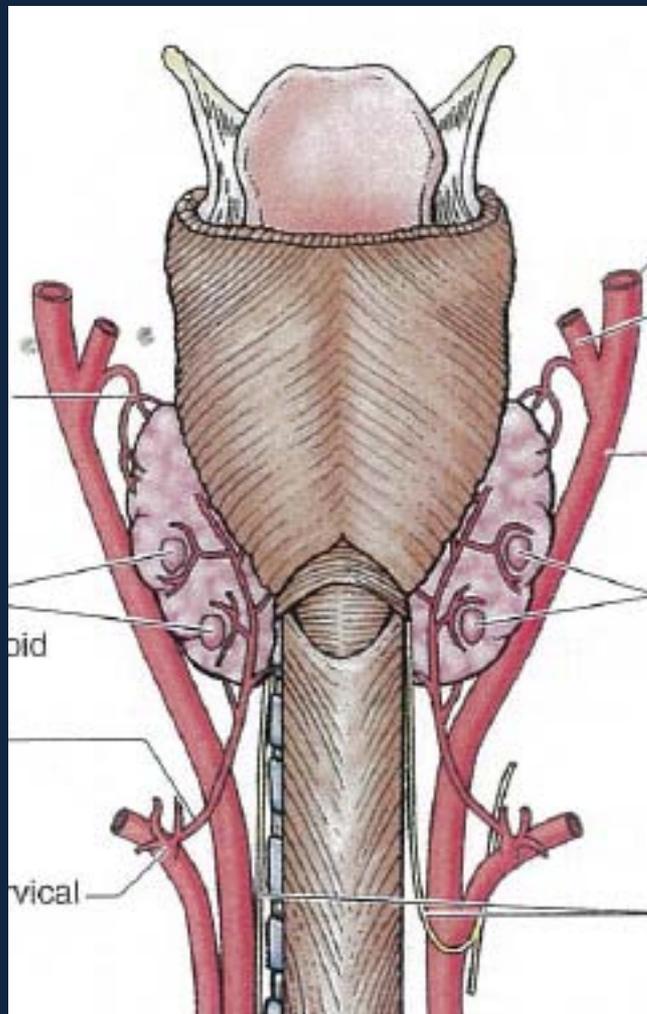
Esophageal Foreign Body



Esophageal Button Battery



Anatomical Considerations

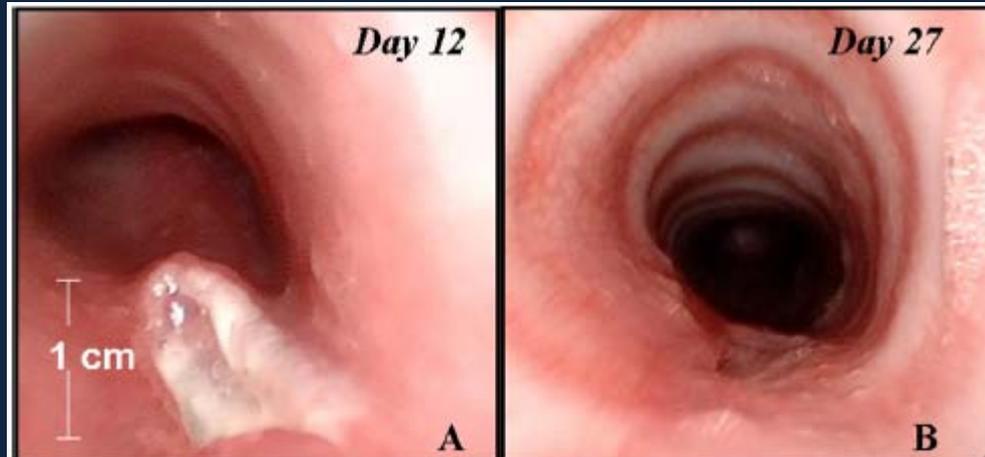
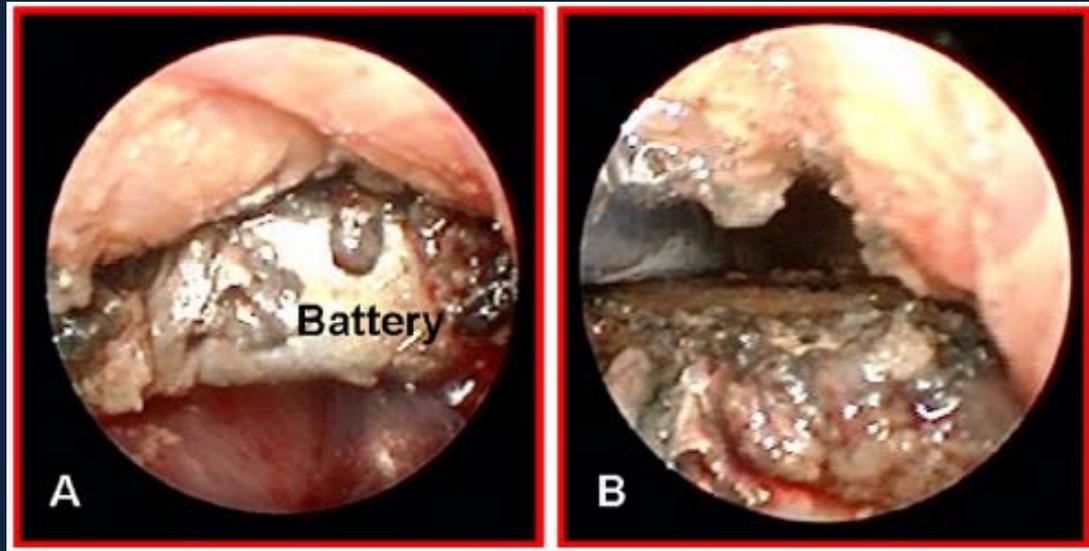


Moore KL, Dalley AF. *Clinically Oriented Anatomy* (1999).

Evaluation of the Airway

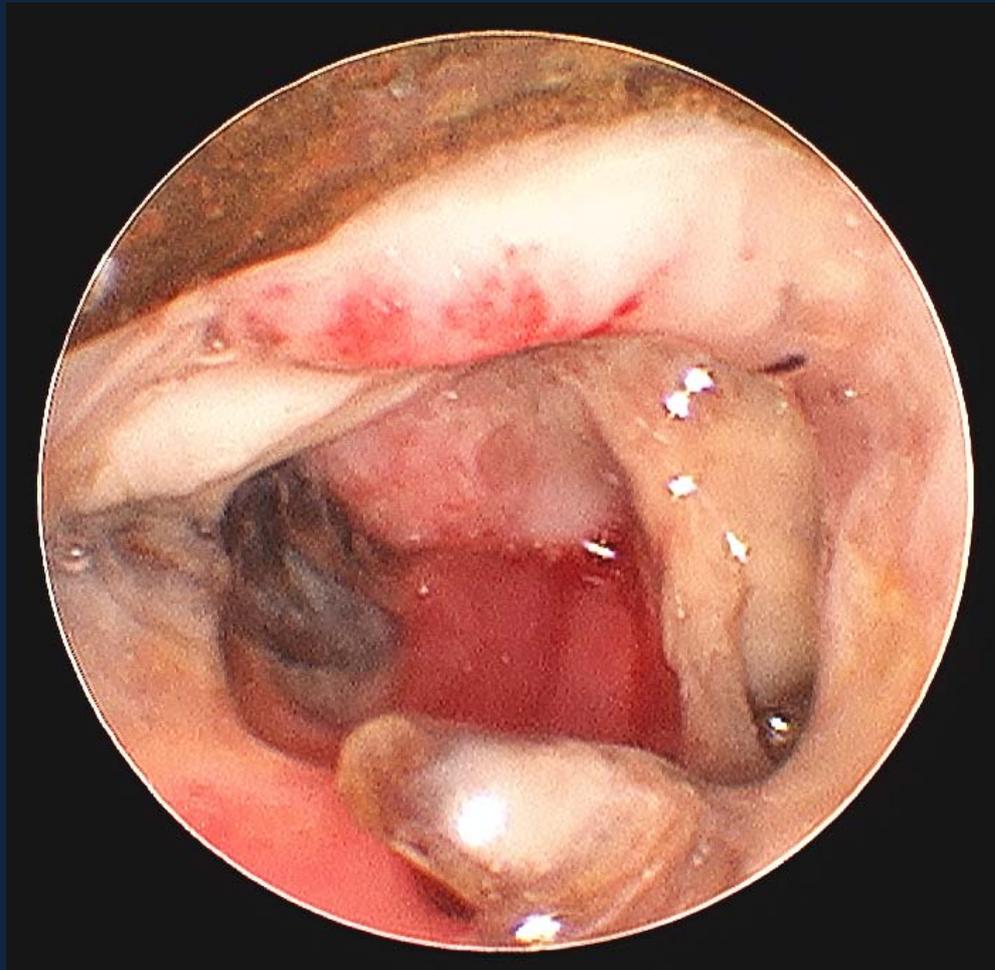


Tracheoesophageal Fistula

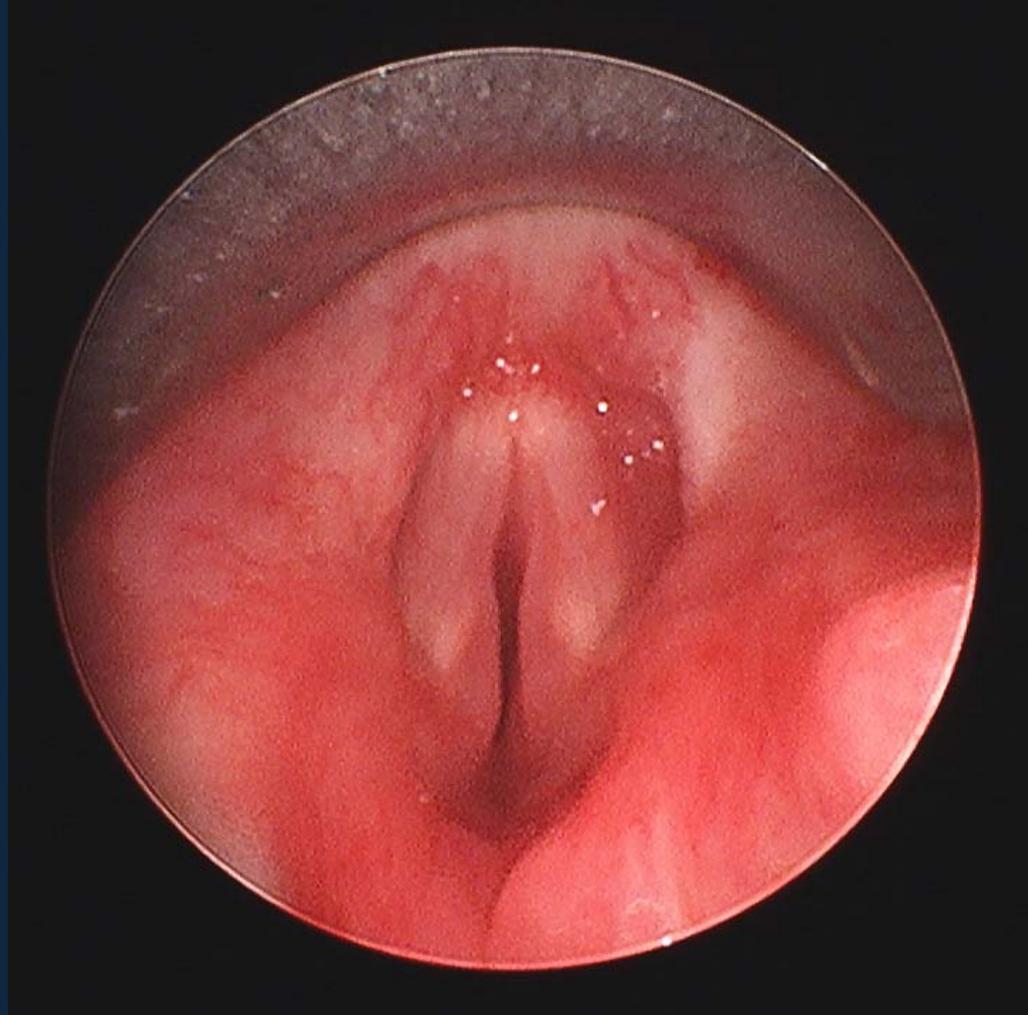


Grisel et al. Acquired tracheoesophageal fistula following disc-battery ingestion
Can we watch and wait? *Int Pediatric Otorhinolaryngology* (2008).

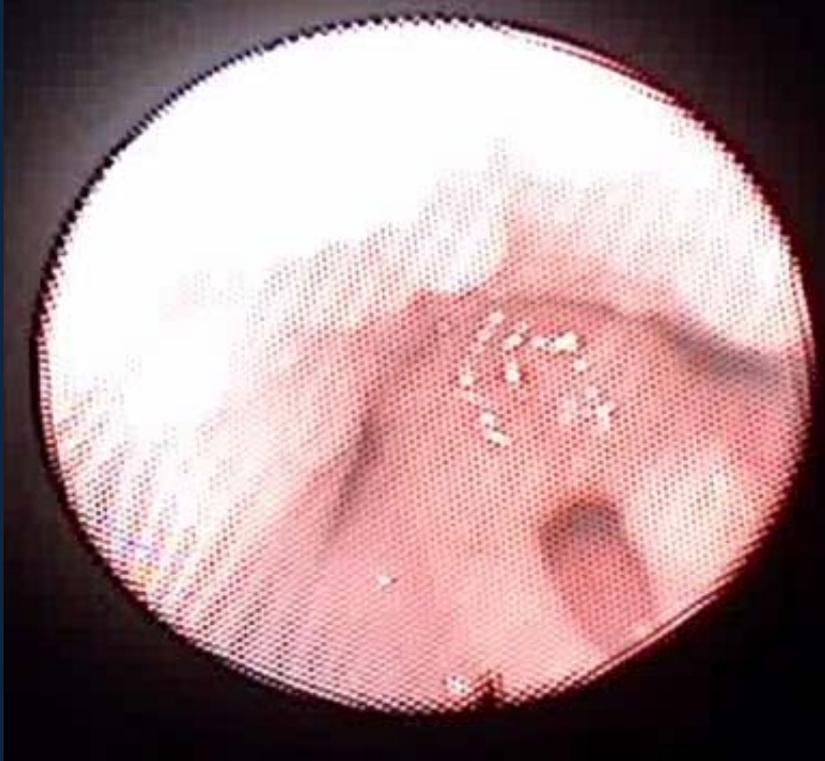
Severe Esophageal Injury



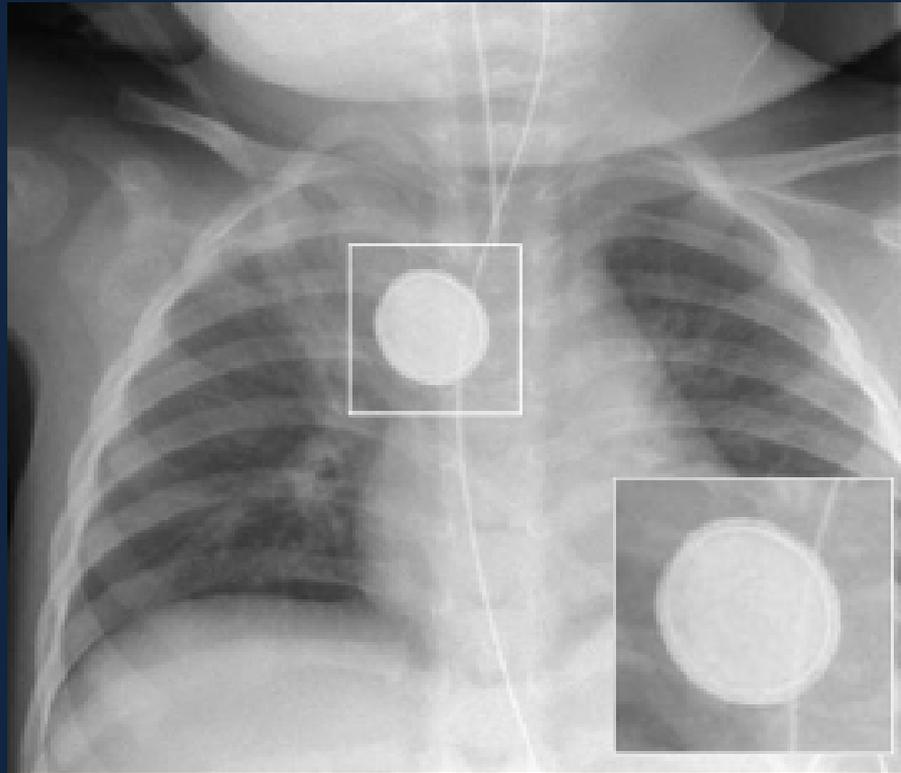
Bilateral Vocal Cord Paralysis



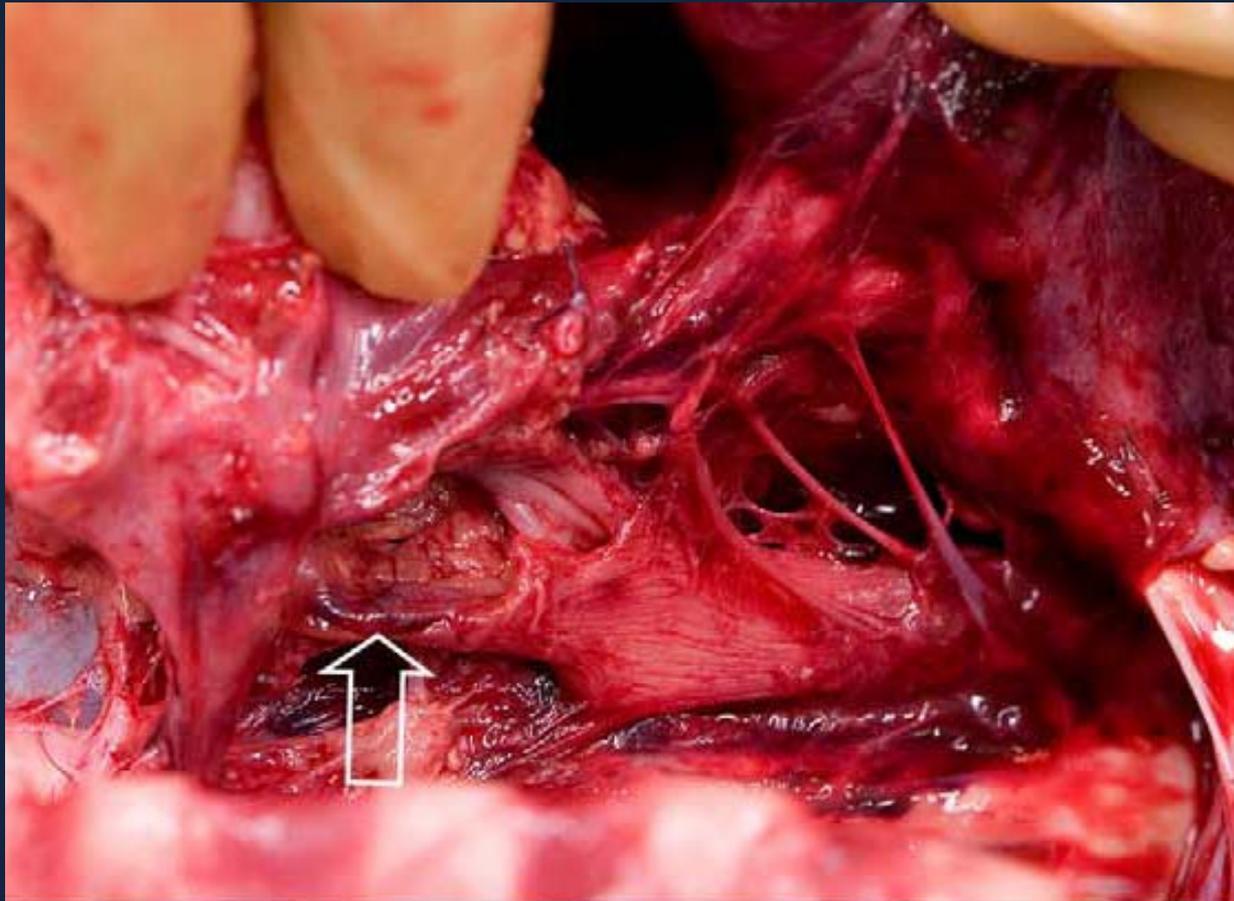
Vocal Cord Function



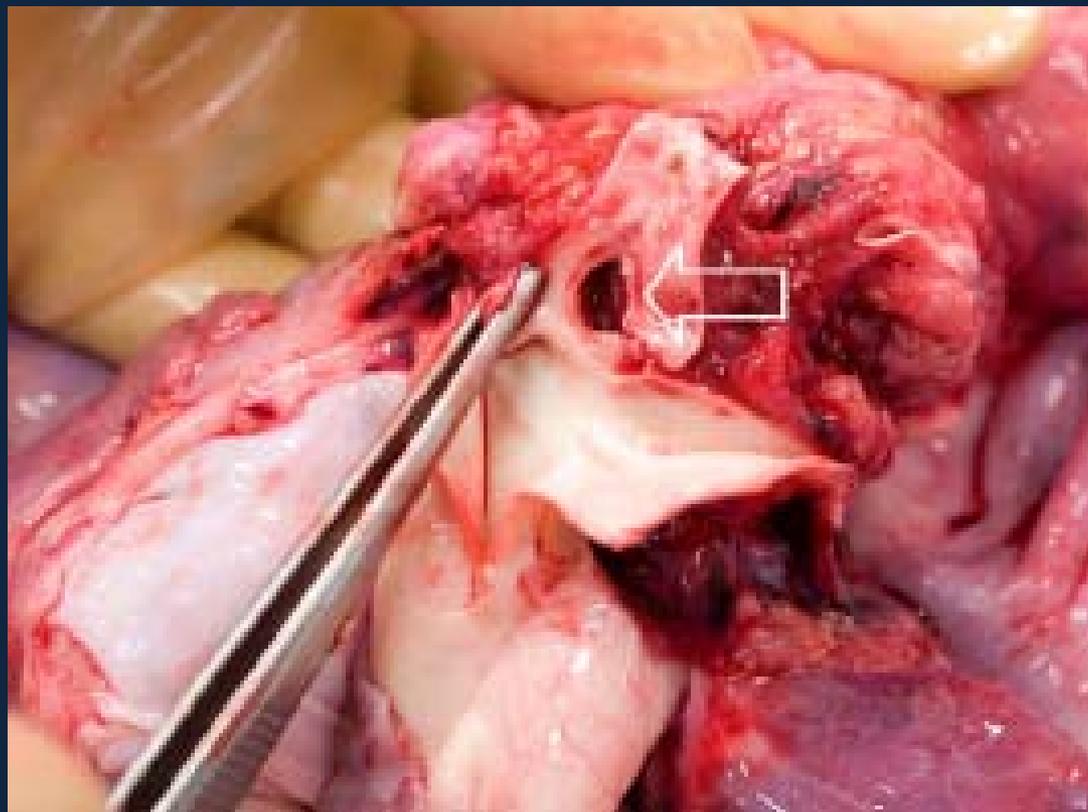
2 y/o child with symptoms of cough, fever, vomiting



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**
- **Aorto-esophageal fistula**