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# Ingesta de Cuerpo Extraño en el Paciente Pediátrico

J. Antonio Quiros MD  
Associate Professor of Pediatrics  
Division of Pediatric Gastroenterology and Nutrition

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## Objetivos

Eliminación endoscópica de cuerpo extraño:

- Magnetos
- Batería de botón
- Objetos punzo-cortantes
- Objetos sólidos
- Alimentos retenidos
- Polímeros super-absorbentes

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## Cuerpo extraño ingerido por niños

- 75% de todos los cuerpos extraños reportados en los USA (116,000) fueron en chicos <5 años.
- 98% de estas ingestas fueron accidentales
- Pueden ser asintomáticas o sintomáticas.
- Síntomas en la presentación pueden ser sibilancia, estridor, llanto, distres respiratorio.

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## Management of Ingested Foreign Bodies in Children: A Clinical Report of the NASPGHAN Endoscopy Committee

\*Robert E. Kramer, <sup>1</sup>Diana G. Lerner, <sup>2</sup>Tom Lin, <sup>3</sup>Michael Manfredi, <sup>4</sup>Manoj Shah, <sup>5</sup>Thomas C. Stephen, <sup>6</sup>Troy E. Gibbons, <sup>7</sup>Harpreet Pall, <sup>8</sup>Ben Sahn, <sup>9</sup>Mark McOmber, <sup>10</sup>George Zucur, <sup>11</sup>Joel Friedlander, <sup>12</sup>Antonio J. Quiros, <sup>13</sup>Douglas S. Fishman, and <sup>14</sup>Petar Mamula

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## Button Battery ingestions

- Disponibles comercialmente los ultimos 30 anos
- Reporte de casos en 1992 revelo un 0.1% de riesgo y no hubieron muertes. (Litovitz T. Pediatrics 1992)
- 2010 US Poison Control Center reporto un riesgo de 1% con 18 muertes (0.18%)(n=8600).

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## Button Battery ingestion

- BB mas grandes y el cambio a celdas de Litio
- La ingesta de bateria de Litio sube the 1% anual en los 80's a 25% en el 2000.
- El mecanismo de injuria es a traves de la generacion de radicales the OH, resultando en una lesion caustica debido a alto pH.
- Necrosis empieza a los 15 minutos con extension a travez de la pared intestinal en 30 min.
- Niños < 4 a y baterias >20mm tienen mayor riesgo.

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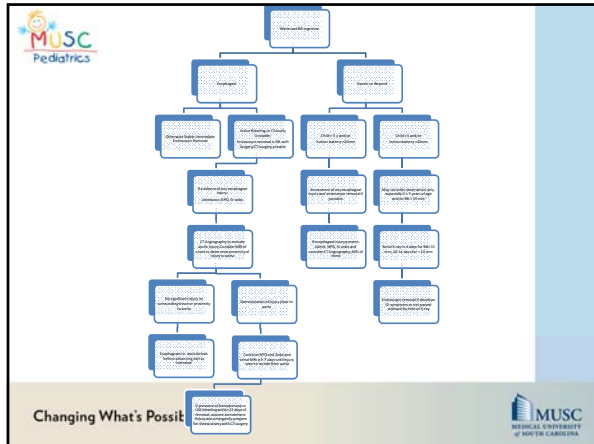
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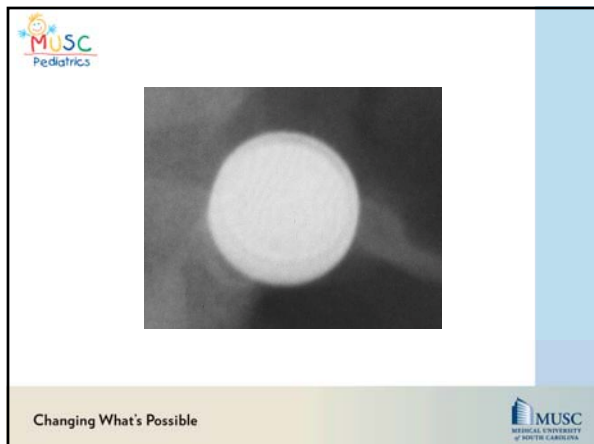
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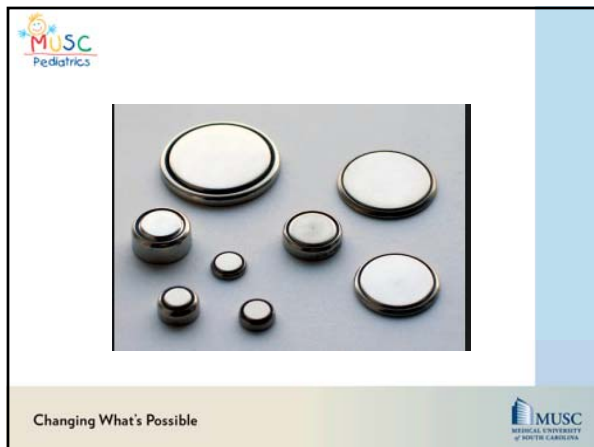
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### Complications reported from BB ingestions

- Fistula traqueo-esofagicas 47%
- Perforacion esofagica 23%
- Estrechez esofagica 38%
- Paralisis de cuerdas vocales
- Mediastinitis
- Arresto cardiaco
- Pneumothorax
- Fistula aorto-enterica

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## Magnet ingestions

- Increased awareness of magnets as a health threat.
- Neodymium magnet injury 1<sup>st</sup> reported in 2002 (n=24)
- Risk of exposure increased with popularity as desk toys (Bucky Balls, NeoCube)
- Use as magnets for body piercings (fake)

McCormick S. Emerg Med 2002

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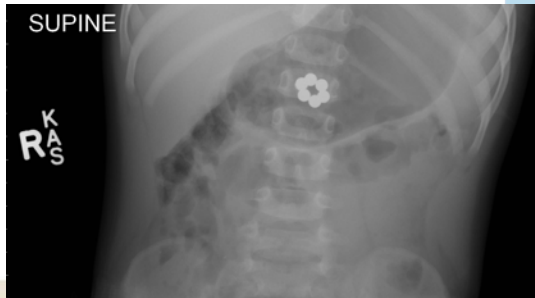
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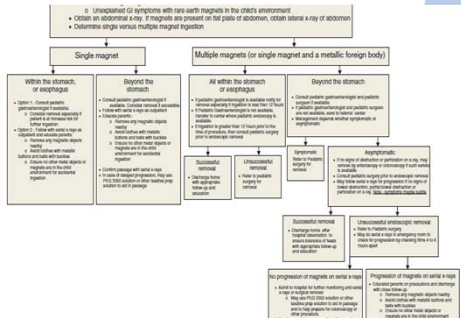
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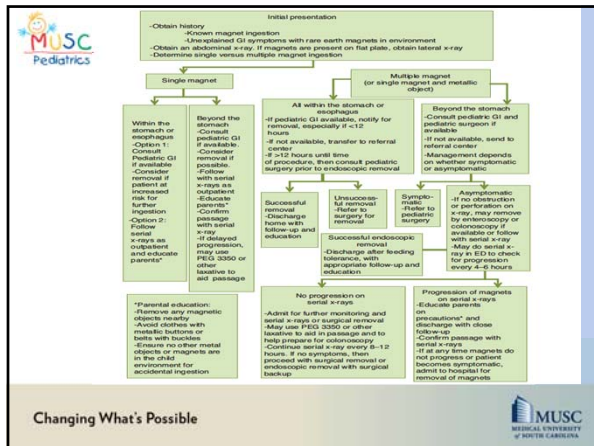
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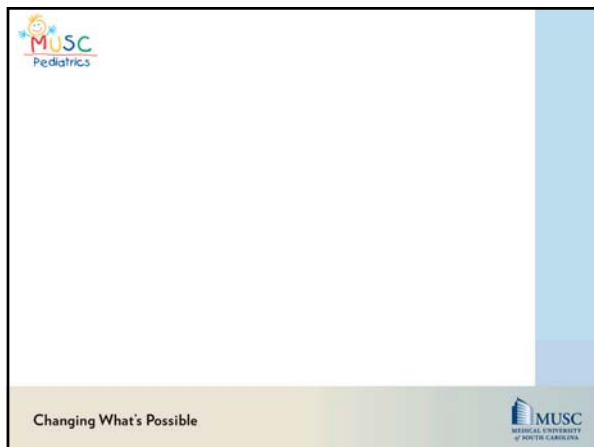
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**Sharp object ingestion**

- Safety pins and nails accounted for 15% and 13% of all ingestions in 20<sup>th</sup> century, respectively.
- Sharp object ingestion only 10% of all ingestions in recent prospective study.
- Jackson’s axiom “advancing points puncture, trailing do not”.
- Intestinal perforations can remain asymptomatic even for weeks.

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## Evaluating Sharp Object Ingestions

- Plain abdominal X-ray is helpful but “material matters”
    - Glass= 43%
    - Fish bones= 26%
    - Wood= 0%
- CT or MRI can be helpful but in absence of inflammatory reaction it might be missed.

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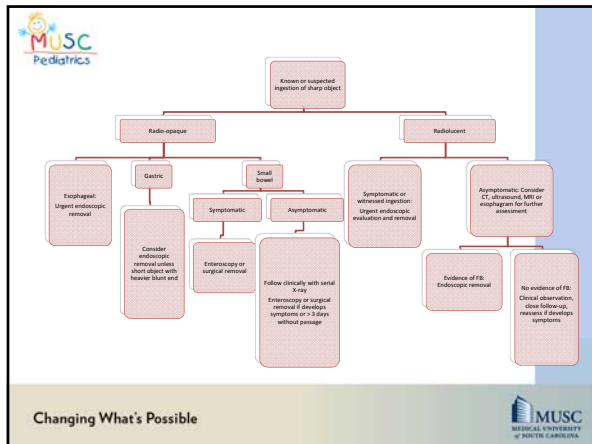
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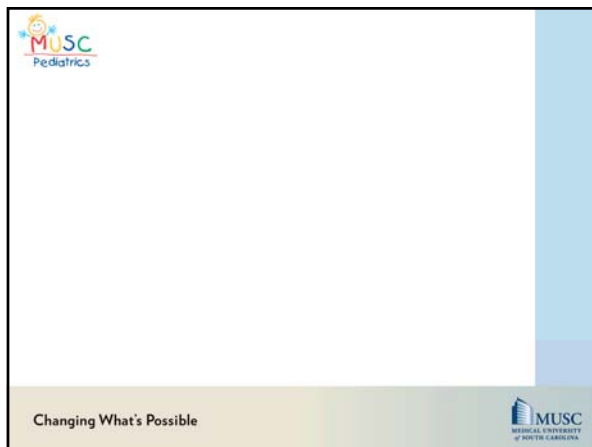
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**Esophageal Food impaction**

- On of the most common emergency accidental ingestions in adults, estimated prevalence 13:100,000.\*
- Data in children is more limited but underlying esophageal pathology must be suspected.
- Diagnosis of Eosinophilic Esophagitis cannot be made solely on presence of Eosinophils at site of impaction.+

\* Longstreth GF. Gastrointest Endosc. 2012  
+ Hurtado J. Pediatric Gastroenterol Nutr. 2011

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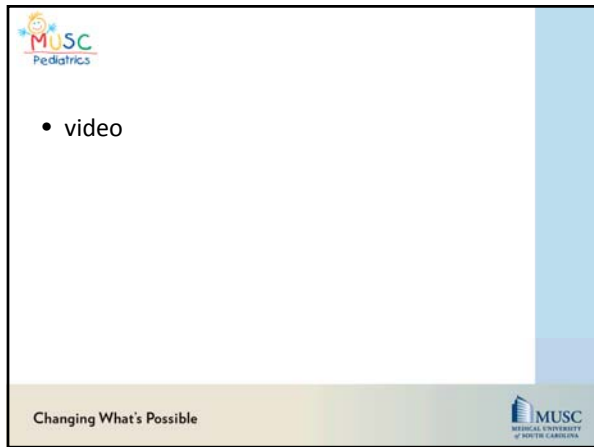
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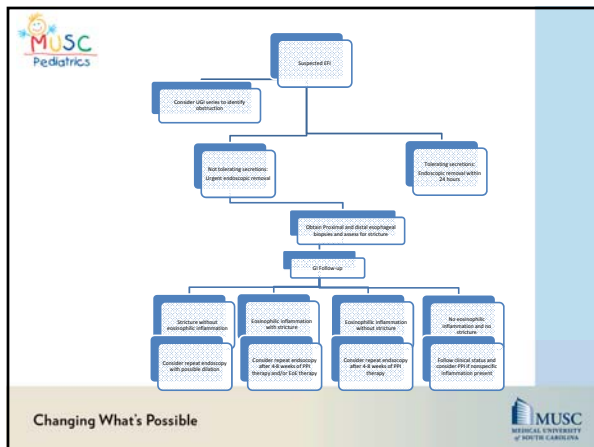
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## Coins and Other Blunt Objects

- Pennies ingested more than all other coins combined.
- Coins larger than 23.5mm (Canadian and American Quarters) are more likely to get stuck.
- If flat disc battery suspected emergent removal needed.
- Large or long objects a problem if larger than 6cm as they won't clear duodenal sweep.

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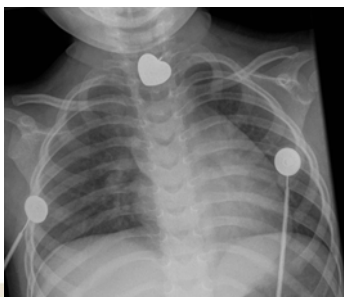
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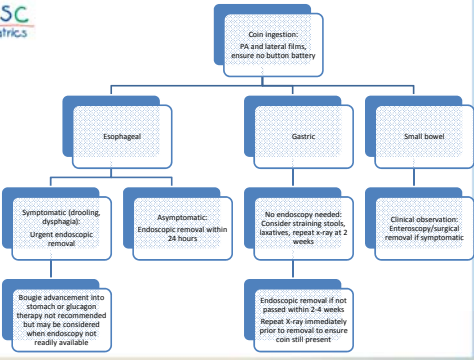
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    graph TD
      A["Coin ingestion:  
PA and lateral films,  
ensure no button battery"] --> B["Esophageal"]
      A --> C["Gastric"]
      A --> D["Small bowel"]
      B --> B1["Symptomatic (swallowing,  
dysphagia):  
Urgent endoscopic  
removal"]
      B --> B2["Asymptomatic:  
Endoscopic removal within  
24 hours"]
      C --> C1["No endoscopy needed:  
Consider straining stools,  
laxatives, repeat x-ray at 2  
weeks"]
      C --> C2["Endoscopic removal if not  
passed within 2-4 weeks  
Repeat X-ray immediately  
prior to removal to ensure  
coin still present"]
      D --> D1["Clinical observation:  
Endoscopy/surgical  
removal if symptomatic"]
      B1 --> B1a["Bougie advancement into  
stomach or glucagon  
therapy not recommended  
but may be considered  
when endoscopy not  
readily available"]
  
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## Esophageal Bougienage

### • Criteria

- Single coin ingested.
- Coin radiographically located in the esophagus.
- Witnessed ingestion of <24 hours duration.
- No prior history of esophageal surgery.
- No known gastrointestinal tract anomalies or surgery that would prevent the spontaneous passage of the coin
- No acute respiratory distress (tachypnea, stridor or wheezing).
- Physician performing procedure has prior experience with technique

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## Super-absorbent Polymers

- Use of these products for personal hygiene and entertainment products has become more common
- Use in tampons was restricted in the 1980's due to risk of toxic shock syndrome.
- Children's toys: Water-Balz, Growing Skulls, H2O Orbs, etc.
- Voluntary recall in 2012 of toys

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### Shawn Jenkins Childrens Hospital MUSC Charleston



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