FOREIGN BODIES

- According to Chik et. al., what object together with peanuts comprises for 85% of foreign body aspirations?
FOREIGN BODIES

• According to Chik et. al., what object together with peanuts comprises for 85% of foreign body aspirations?

• WHO CARES??????

Watermelon Seeds (in Hong Kong Children)
FOREIGN BODIES

- Cummings:

“Foreign body removal has been greatly facilitated by the introduction of foreign body extraction forceps that have a central channel for an extra-long Hopkins rod telescope. Different forceps are available to remove friable foreign bodies such as peanuts and solid material such as plastic. The use of adrenaline before any attempt at removal shrinks the mucosa and reduces bleeding.”
FOREIGN BODIES

• What is it?

Or Everything else
FOREIGN BODIES

- Radiography
  - PA & lateral views of chest & neck
  - Inspiration & expiration
  - Lateral decubitus views
  - Airway fluoroscopy
- 25% have normal radiography
FOREIGN BODIES

- Common esophageal locations
  - Cricopharyngeus
  - Aorta/left mainstem bronchus
  - Gastroesophageal junction
FOREIGN BODIES
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- It’s 3:11am on Saturday night, June 17\textsuperscript{th}, at Harbor.
- 4 year old boy was playing with beans, was witnessed choking and is now coughing.
FOREIGN BODIES

Damn I’m tired

Let’s do what’s best for the patient

Or I’m in pain
FOREIGN BODIES

• Good History but normal lungs sounds and CXR = 45% of children actually had foreign bodies.

VS

• Harbor midnight pediatric airway anesthesia mortality.

It’s 10:38pm the next night.
4 year old boy was eating watermelon, now can’t breathe too good.
CXR shows hyperinflated lung.
FOREIGN BODIES

I'll be right in, but get the patient in the room. Make sure everything is set up and ready to go.
FOREIGN BODIES

- You get to the OR and you find the airway supply drawer.
- The scrub tech and circulator look at the equipment and you get this...
### FOREIGN BODIES

#### Bronch Size

<table>
<thead>
<tr>
<th>Age</th>
<th>Inner Diameter</th>
<th>Outer Diameter</th>
<th>26cm Length</th>
<th>30cm Length</th>
<th>40cm Length</th>
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<tbody>
<tr>
<td>2.5</td>
<td>3.5mm</td>
<td>4.2mm</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>4.3mm</td>
<td>5.0mm</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>3.5</td>
<td>5.0mm</td>
<td>5.7mm</td>
<td>x</td>
<td>x</td>
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</tr>
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<td>3.7</td>
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<td>6.4mm</td>
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<td>x</td>
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<tr>
<td>4</td>
<td>6.0mm</td>
<td>6.7mm</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>4.5</td>
<td>6.6mm</td>
<td>7.3mm</td>
<td>x</td>
<td>x</td>
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</tr>
<tr>
<td>5</td>
<td>7.1mm</td>
<td>7.8mm</td>
<td></td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>6</td>
<td>7.5mm</td>
<td>8.2mm</td>
<td></td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>

#### Age

<table>
<thead>
<tr>
<th>Age</th>
<th>Inner Diameter</th>
<th>Outer Diameter</th>
<th>Bronch Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-3 months</td>
<td>3.5mm</td>
<td>4.8mm</td>
<td>3</td>
</tr>
<tr>
<td>3-9 months</td>
<td>4.0mm</td>
<td>5.5mm</td>
<td>3.5</td>
</tr>
<tr>
<td>9-24 months</td>
<td>4.5mm</td>
<td>6.2mm</td>
<td>3.7</td>
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<tr>
<td>2 years</td>
<td>5.0mm</td>
<td>6.8mm</td>
<td>4.5</td>
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<tr>
<td>4 years</td>
<td>5.5mm</td>
<td>7.6mm</td>
<td>5</td>
</tr>
<tr>
<td>6 years</td>
<td>6.0mm</td>
<td>8.2mm</td>
<td>6</td>
</tr>
</tbody>
</table>
FOREIGN BODIES
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When to bridge....
CAUSTIC INGESTION

- 3 year old boy arrives in ER after drinking unknown substance
  - What do you want to ask on history?
CAUSTIC INGESTION

- Amount
- Type
- Concentration
- Time of contact
CAUSTIC INGESTION
EVIDENCE BASED

- Do not order barium swallow
  - Will delay OR time
  - Can not diagnose Grade 1-2 injuries

CAUSTIC INGESTION
EVIDENCE BASED

- Everybody gets esophagoscopy for prognosis

Caustic Ingestion

- Esophagoscopy in virtually all patients at 24-48 hours post-ingestion
- < 24 hours – underestimation of injury
- > 72 hours with risk of iatrogenic perforation – barium swallow
- Endoscopy to upper limit of severe burn

- Want to do anything else???
Caustic Ingestion

- Nasogastric tube
  - Prevent adherence of esophageal walls
  - Allow for nutrition
Caustic Ingestion

- Grade 1 - superficial injury
- Grade 2 – transmucosal injury
- Grade 3 – transmural injury
- Circumferential vs. localized injury
CAUSTIC INGESTION

• Goal
  o Preventing permanent injury or stricture in esophagus
CAUSTIC INGESTION
EVIDENCE BASED

- No benefit from steroid use
  - NEJM
  - n = 60
  - Prospective, Randomized, Controlled

CAUSTIC INGESTION
EVIDENCE BASED

- Use diluting agents
  - Milk
  - Water
- Use GERD therapy
- Use Antibiotics

NONE!!!
CAUSTIC INGESTION

- Esophageal carcinoma
- 1,000x increased risk
- 13 to 71 years after injury
- Better prognosis than usual esophageal cancer