



Tips and Tricks: how to remove a foreign body from the GI tract



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Ingestion of foreign bodies

Upper GI tract




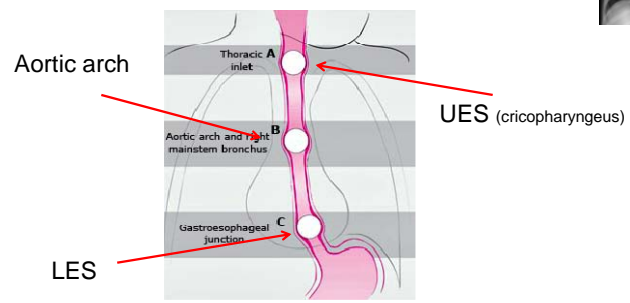
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Generalities



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Anatomical sites of impaction



Aortic arch

Thoracic inlet


UES (cricopharyngeus)

Aortic arch and right mainstem bronchus

Gastroesophageal Junction


LES

The area of discomfort often does not correlate with the site of impaction





4 BSGI Adapted from Schunk 1992, 2008


Most foreign items will pass spontaneously (if asymptomatic: wait 24 h)
Risk of perforation from foreign body < 1 % (35 % are sharp item)



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Children >>>> adults


80 %  20 % 



→ Endoscopy successfull > 90 %, complications < 5 %
→ 1% surgery


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Fish bones are usually found in the pharynx



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Narcotic packets

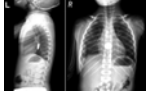


CI for endoscopic removal

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Diagnosis

- Anamneses in generally enough
- Plain neck, chest and abdomen radiographs (biplane!) → location? Amount ? Type ?



- 36% **not** radioopaque ! e.g. wood, plastic,...*
- Doubt? Radiolucent? → CT scan**
- **Avoid** contrast studies !

11 BSGI 18-9-2014 * Arana et al, Eur j Pediatr 2001 ** Kazam et al, Am J Emerg Med 2003

Foreign bodies: timing

Can I wait until my colleague arrives ?
(more experience = more success)




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Foreign bodies: timing

Emergency:

- **Esophagus**
 - Symptomatic (unable to swallow secretions)
 - Disk batteries
 - Sharp pointed objects
- **Respiratory problems** (5 %) (intubation)
 - If unable to speak: Heimlich maneuver



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Foreign bodies: timing

Urgent:


- **Esophageal** (when secretions can still be swallowed): max 24 h
- **Stomach**
 - Sharp objects
 - Objects > 6 cm
 - Magnets

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Foreign bodies: timing

Non-urgent:

- Coins (observe 12-24 h)
- Objects with diameter > 2,5 cm (limited data)
- Batteries that remain in the stomach > 48 h







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Foreign bodies: material

Choice of endoscope

- **Flexible endoscopy**
 - conscious sedation or general anesthesia
 - Therapeutic endoscope ?
- **Rigid endoscopy**
 - Proximal esophagus (hypopharynx, m cricopharyngeus)
- **Laryngoscope + Magill forceps**
 - Oropharynx or upper esophagus

Katsilinos BSGI, J Clin Gastroenterol 2006 18-9-2014

Foreign bodies: material

Material to protect LES,
esophagus, pharynx, airway



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Overtubes




Figure 1
Insert the control cord.

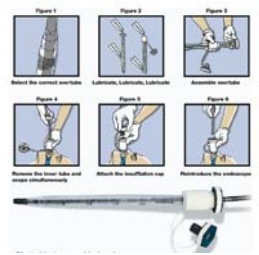
Figure 2
Lubricate, Lubricate, Lubricate


Figure 3
Advance carefully

Figure 4
Advance the inner tube and make undistended

Figure 5
Attach the insufflation valve

Figure 6
Retract the endoscope






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Latex protector hood

Push endoscope some mm into the bell

Protects cardia, esophagus and post pharynx

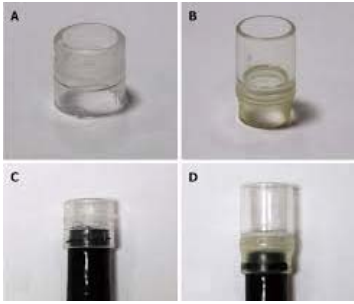
Only for items in the stomach (risk of losing item during retrieval is smaller !!)






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Transparent cap (mucosectomie)






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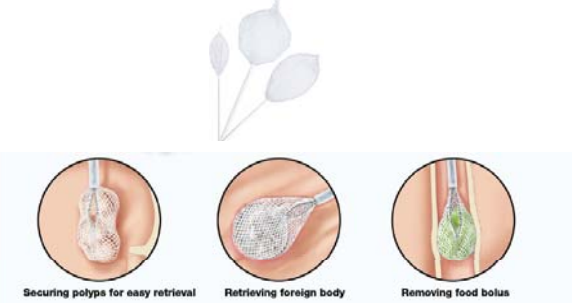
Foreign bodies: material

Retrieval devices




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Retrieval devices: nets





Securing polyps for easy retrieval Retrieving foreign body Removing food bolus

The net decreases the chance of inadvertently dropping the item in the airways during removal



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Retrieval devices: snare and baskets

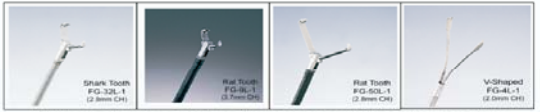
Ewenka Bernini, M.D. (1958-2009)

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Retrieval devices: forceps


Devices for retrieval of coins and dentures



Retrieval of nails, needles, blades, pins, & other sharp objects



Retrieval of complicated sharp foreign bodies, stents, etc




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Food bolus impaction

Structural or functional esophageal abnormalities (eosinophilic esophagitis, Schatzki ring, peptic strictures..)



Esophageal tumor, causing impaction is rare

Technique:
Push
Pull/suck (cap)
Fragmentate (grasping forceps, snare)


-In esophagus: max 24h
-**NO** proteolytic enzymes (e.g. papain)
-IV 1mg glucagon ?

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Li e23, Gastrotest Endosc 2006 18-9-2014

Specific situations: shape of item

- **Sharp, long and perforated**
→ Remove (hood or cap and rubber tipped grasper)

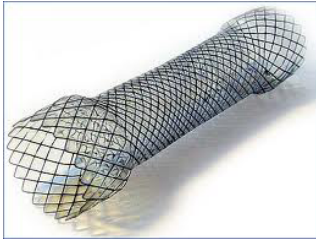
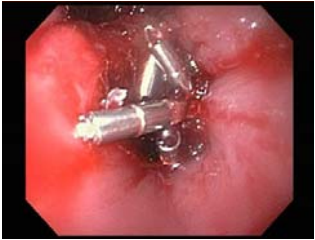


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Complications: perforation

Endoscopy or surgery

Bryant et al, Thorac Surg Clin 2007
Qadeer et al, Gastrointest Endosc 2007
Freeman et al, Ann Thorac Surg 2007

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Ingestion of item

Anamnesis clear ?
Need RX for confirmation (amount ? Item ? Localisation ?)
Need general anesthesia ?

Item in esophagus
Remove everything that is symptomatic urgently (ex batteries, sharp items)
Remove everything that is not symptomatic < 24 u

Item in stomach
remove if sharp, long (> 5-6 cm) and wide (>2.5cm)
Remove magnets


Think about protecting mucosa !
Choose material depending on shape, sharpness

Pull your item against the endoscope during retrieval (! LES, upper ES !)
Trendelenburg to avoid aspiration
Sharp items: trail ! not lead

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Foreign bodies


Lower GI tract



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Adults >>>> Children

100 %



28/1

♂ ♀

0 %

→ ? % endoscopic removal
→ ? % surgery

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Generalities

- RX often needed for evaluation size, position etc



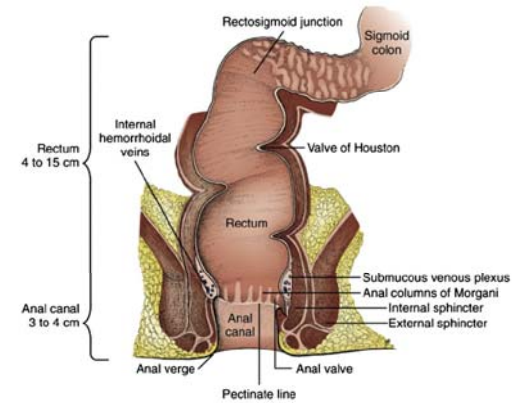
- Rectal contrast can be given to outline item (gastrografine)
- Premedication can prevent assistance of patient (expulsion)



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Low-lying or high-lying



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High lying objects

- General anesthesia
- Surgeon \pm endoscopist



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Low lying objects

- Premedication ?
- Fingers
- Endoscopy
- Gynecological material ?



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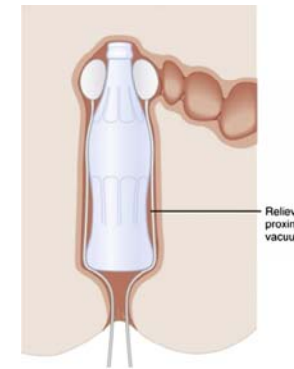
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Problems

- Usually oedema/spasms sphinters due to “self removal” attempts
- Hallow objects (jars, bottles) create a vacuum as they are pulled in the rectum



Foley catheter



Relieves proximal vacuum

