



PAEDIATRIC ACUTE CARE GUIDELINE

Foreign Body - Ingested

Scope (Staff):	All Emergency Department Clinicians
Scope (Area):	Emergency Department

This document should be read in conjunction with this DISCLAIMER
<http://kidshealthwa.com/about/disclaimer/>

Foreign Body - Ingested

Background

- Most foreign bodies pass harmlessly through the gastrointestinal tract
- Once they are in the stomach, most objects will usually pass through the pylorus and the ileocaecal valve and are unlikely to cause complications
- Ingested button batteries are an emergency and can have serious (even fatal) complications

General

- The usual presentation for children is the witnessed ingestion of a foreign body
- The commonest age of presentation is 6 months to 4 years
- Less commonly the child presents with a complication of an unwitnessed foreign body ingestion
- Complications due to food ingestion are uncommon in children
- Oesophageal impaction with a foreign body may occur at any of 3 typical locations:
 - 70% occur at the cricopharyngeus sling at the thoracic inlet (between the clavicles on CXR)
 - 15% occur in the mid-oesophagus (at junction of aortic arch and carina on CXR)
 - 15% occur at the lower oesophageal sphincter
- Impaction at other sites in the oesophagus suggests an underlying oesophageal abnormality
- A foreign body may rarely impact in a Meckel's diverticulum
- Special consideration is needed for sharp, very large (too long > 6cm, or too wide > 2cm) or toxic foreign bodies (e.g. button batteries)
- Children with pre-existing GIT abnormalities (including repaired tracheo-oesophageal

fistula or pyloric stenosis) are at increased risk for complications from a foreign body ingestion

- Impaction in the GIT may lead to local inflammation with pain, bleeding, scarring or erosion through the GIT (mediastinitis, aortoenteric fistula, peritonitis)

Examination

Symptoms of an oesophageal foreign body include:

- Dysphagia
- Food refusal, drooling
- Vomiting, haematemesis
- Chest or throat pain
- Unexplained fever
- Altered mental state

Symptoms of an impacted foreign body in the stomach or lower GIT include:

- Abdominal pain, abdominal distension
- Vomiting
- Haematochezia
- Unexplained fever

Investigations

X-Ray:

- Most foreign bodies are radiopaque and a single frontal X-Ray including the lower neck, chest and abdomen is usually sufficient to locate the object
- An additional lateral X-Ray is required if the foreign body is in the oesophagus
- Coins in the oesophagus appear in the coronal orientation (face on) as opposed to coins in the trachea which appear in the sagittal orientation (edge side on)
- Repeat X-Rays are not generally necessary if the object is below the diaphragm.
- Radiolucent objects may be located by looking for their effects (such as compression) seen on plain X-Rays, but may require direct visualisation under oesophagoscopy or specialist radiographic techniques after discussion with a Paediatric ENT Surgeon

Endoscopy:

- Under a general anaesthetic, this may be diagnostic and therapeutic
- The patient should be fasted and pre-procedure X-Rays taken to verify that the foreign

body has not passed spontaneously

- Management of children with known GIT abnormalities should be discussed with the Paediatric Gastroenterology Team

Blood Tests:

- These are generally only indicated for specific complications (e.g. infection), or for heavy metal toxicity if the patient is symptomatic of defragmented ingested button battery

Initial management

- The drooling child may require suction
- Spontaneous passage of a foreign body lodged at the lower oesophageal sphincter may occur after several hours, and the stable patient with normal anatomy may be observed in hospital, allowed to eat and re-X-Rayed at 12-24 hours
- Medications such as Glucagon 0.02-0.03 mg/kg IV (max 0.5 mg), Benzodiazepines and Nifedipine have been reported to assist foreign body passage through the lower oesophageal sphincter in adults. However, their role in children has not been established, and they are unlikely to be successful in children with anatomic abnormalities.

Further management

Special Circumstances:

Coins:

- A single frontal X-Ray of the lower neck, chest and abdomen will verify the presence and location of the coin
- Once in the stomach, most coins will pass uneventfully and patients can be discharged home, with advice to return if they develop abdominal pain or vomiting
- Parental examination of the stools and serial X-Rays are unnecessary
- Admission is warranted for patients with oesophageal impaction who are symptomatic; however many lodged at the lower oesophageal junction will spontaneously pass within a few hours

Button (Disk) Batteries:

- Although most button battery ingestions are asymptomatic and benign, occasionally these ingestions are complicated by a battery lodging in the oesophagus, or rarely by leakage of heavy metals and caustic injury to the GIT

- This can cause serious complications and even death
- Most button batteries are less than 15 mm in diameter
- Older children will usually successfully pass batteries up to 21-23 mm in diameter, and batteries that have traversed the oesophagus are unlikely to lodge elsewhere
- All children with a suspected button battery ingestion should be X-Rayed to verify position and size
- On X-Ray a button battery is a rounded with a double density rounded edge (halo sign)
- Button batteries located in the oesophagus should be removed immediately (repeat X-Ray prior to oesophagoscopy) to avoid liquefaction necrosis and perforation of the oesophagus
- If the battery is located in the stomach it would be expected to pass through the remainder of the GIT. However, in a child < 6 years who has swallowed a battery more than 15mm in diameter, if it has not passed from the stomach by 48 hours it is unlikely to do so. Endoscopic removal should be considered
- Children who have ingested button batteries should have their stools monitored for passage of the battery, and regular weekly X-Rays considered
- Discharged patients should be advised to return immediately if symptoms of abdominal pain or distension, tarry or bloody stools, persistent vomiting or fever occur
- Heavy metal toxicity is a rare complication
- Serum lithium and mercury levels should be considered if there is repeated vomiting or CNS disturbance (altered mental state, ataxia), especially if X-Ray shows defragmentation of the battery
- Rarely, nickel sensitivity may cause a rash

Sharp Objects:

- Fish or chicken bones are most common
- The patient may be able to accurately localise the foreign body in the pharynx or the upper third of the oesophagus
- Acute symptoms range from minor discomfort, pain, dysphagia, drooling, gagging, airway compromise or delayed symptoms of poor feeding, fever, stridor or respiratory symptoms, abdominal pain or vomiting
- Fish bones in the pharynx may be radio-opaque, depending on the size of the bone and the type of fish
- A foreign body in the oropharynx may be removed in the ED under direct vision after application of local anaesthetic spray, by the ED Doctor or ENT Surgeon
- Abrasions to the oropharynx can also create a foreign body sensation. Children with minor symptoms in whom there has been failure to directly visualise a foreign body and in whom the X-Ray is negative, may be discharged home and reviewed at 24 hours, or earlier if symptoms increase.
- Endoscopy is required immediately for airway compromise, or for sharp foreign bodies > 6cm (including toothpicks, chicken bones which have a high risk of perforation) that are in the oesophagus or the stomach. Such foreign bodies which have passed beyond the pyloric sphincter into the small intestine don't necessarily need to be removed, but should be referred to the General Surgical Team for an opinion.
- Metal screws will generally pass through the GIT with the blunt end leading

- Aluminium can tabs have a high risk of entrapment in the oesophagus, so endoscopy should be considered early. They are radio-opaque and thus easily seen on X-Ray (particularly on lateral view).

Magnets:

- If more than one magnet has been ingested, they can cause damage to the GIT when they become attracted to each other
- If they are in the stomach, consider endoscopy, and discuss with the Paediatric Gastroenterology Team
- If they are in the small or large intestine, discuss with the General Surgical Team

Medications

- Medications such as Glucagon 0.02-0.03 mg/kg IV (max 0.5 mg) can be considered with impacted oesophageal foreign bodies
- [Analgesia](#)

Tags


abdominal, batteries, battery, blood, body, button, chest, coin, drooling, dysphagia, emesis, fb, fever, food, food refusal, foreign, haematemesis, ingested, ingested foreign body, ingestion, oesophageal, pain, poison, poisoning, stool, throat, tummy, vomit, vomiting

References

- Litovitz T, Whitaker N, Clark L, White NC, Marsolek M (2010) Emerging battery ingestion hazard: clinical implications, *Paediatrics*, 125:6, p1168-1177.
- Jatana KR, Litovitz T, Reilly JS, Koltai PJ, Rider G, Jacobs IN (2013) Pediatric button battery injuries: 2013 task force update, *International Journal of Pediatric Otorhinolaryngology*, 77, p1392-1399.

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