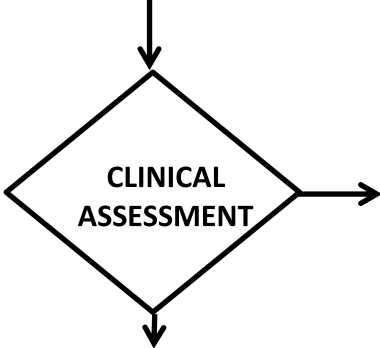
Division of Paediatric Emergency Medicine
Foreign Body Ingestion Algorithm

SickKids®



- ✓ **KEEP NPO** until disposition is clear
- ✓ Ascertain whether FB could be **BUTTON BATTERY** (directly observed ingestion, halo sign on AP view, step off sign on lateral view)
- ✓ **For suspected BUTTON BATTERY, upon triage or enroute notes:**
  - Call **ENT** if BB in esophagus or nose or severe respiratory Sx**

HISTORY	EXAM	IMAGING
▪ Timing of ingestion ▪ NPO time ▪ FB characteristics: size, shape, composition, number ▪ Symptoms: cough, stridor, drooling, odynophagia, vomiting, gagging, oral intake tolerance, GI bleed, sternal/abdo pain, etc.	▪ OVERALL: vitals, distress ▪ RESP: drooling, stridor, wheeze, work of breathing, unequal breath sounds ▪ HEENT: oral lesions, neck crepitus, check ears and nose for FB ▪ ABDO: distention, tenderness	▪ Obtain foreign body X-ray series (exposing neck, chest and abdo) ▪ Laterals especially important if: battery/magnet suspected, location of FB is esophageal or unknown

	BUTTON BATTERY (BB)	COINS / BLUNT OBJECTS	MAGNETS	SHARP OBJECTS	FOOD IMPACTION
ESOPHAGUS (ENT)	ALL PATIENTS: ▪ Call ENT STAT for **emergent*** endoscopic removal ▪ NOTE: BB in NOSE should be treated with same urgency (possible nasal perf) ▪ Admit, NPO, IV ▪ +/- direct to OR ▪ Consider possibility of aortic injury (may require CT angio)	SEVERE SYMPTOMS**? YES: ▪ Call ENT for **emergent*** removal NO: ▪ **Urgent*** removal by ENT ▪ Admit, NPO, IV, repeat x-ray prior to endoscopy to R/A FB location	SINGLE MAGNET: ▪ Consult ENT ▪ Consider removal only if having symptoms or at risk of further ingestions ≥ 2 MAGNETS: ▪ Call ENT +/- surgery for **emergent*** removal if symptomatic, otherwise **urgent*** ▪ Admit, NPO, IV	RADIO-OPAQUE: ▪ Call ENT for **emergent*** removal if severe symptoms**, otherwise **urgent*** RADIOLUCENT: ▪ If symptomatic, call ENT for endoscopy ▪ If no symptoms but history concerning – consider CT, MRI, U/S, or esophagram	SIGNS OF ESOPHAGEAL NEAR-COMPLETE OBSTRUCTION? (drooling, neck pain) YES: ▪ Call ENT for **emergent*** removal +/- esophageal biopsy NO: ▪ Consult ENT for **urgent*** removal +/- Gastrografin study Consider GI referral
STOMACH AND DUODENUM (GI)	If BB >20 mm <u>and</u> <5 years old: ▪ Call GI for **urgent*** endoscopic removal ▪ Admit, NPO, IV If BB <20 mm: ▪ Consult GI, may not require admission ▪ If not passed in BM, repeat X-ray: in 48 hrs for BB >20 mm, or in 10-14 days for BB <20 mm ▪ Consider elective* removal if in stomach still on repeat X-ray	SYMPTOMATIC? YES: ▪ Call GI to discuss need for removal ▪ Admit, NPO, IV, repeat X-ray prior to endoscopy NO: ▪ Safe for discharge ▪ Repeat X-ray in 2-3 weeks, or sooner if patient becomes symptomatic ▪ Consider GI consult if object is very large (e.g. > 5cm)	SINGLE MAGNET: ▪ Consider conservative management if no symptoms ▪ Consult GI if having symptoms, suspected co-ingestion with another metal, or at risk of further ingestion ≥2 MAGNETS: ▪ Consult GI for **emergent*** removal if symptomatic, otherwise urgent ▪ Admit, NPO, IV	RADIO-OPAQUE: ▪ If symptomatic, call GI to consider endoscopy ▪ If no symptoms, consider conservative management for low risk*** object RADIOLUCENT: ▪ If symptomatic, call GI to consider endoscopy ▪ If no symptoms but history concerning – consider CT, MRI, U/S for further assessment	
BEYOND DUODENUM	SYMPTOMATIC? YES: ▪ Consult Gen Surgery NO: ▪ Monitor stool, conservative Mgmt	SYMPTOMATIC? YES: ▪ Consult Gen Surgery NO: ▪ Monitor stool, conservative Mgmt	≥2 MAGNETS and/or SYMPTOMATIC: ▪ Consult Gen Surgery SINGLE MAGNET with no symptoms: ▪ Conservative Mgmt	SYMPTOMATIC? YES: ▪ Consult Gen Surgery NO: ▪ Conservative Mgmt, unless concerning	
USEFUL TIPS	Must consult for all BB. On X-ray, look for halo sign on AP and step-off on lateral. Assume hearing aid batteries are < 12 mm.	Width >2.5 cm less likely to pass through pylorus. Consider possible toxic composition, bezoars	Single vs multiple might be difficult to differentiate, must obtain 2 views and confirm with radiologist if there is uncertainty	Sharp objects may include nails, pins, fish bone, tacks, toothpicks, needles. *"Advancing points puncture, trailing do not"*	Often secondary to underlying esophageal pathology: eosinophilic esophagitis, achalasia, stricture, TEF repair, etc

DEFINITIONS

***ENDOSCOPY TIMING**:

<u>**Emergent**</u>
<2 hr from presentation, regardless of NPO status

<u>**Urgent**</u>
<24 hr from presentation, follow usual NPO status

<u>**Elective**</u>
>24 hr from presentation, follow usual NPO status

****SEVERE SYMPTOMS**:
- respiratory distress
- hemodynamic instability
- not tolerating secretions

*****LOW RISK**:
- <5 cm
- blunt end advancing

Last Updated October 2019

REFERENCES

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