

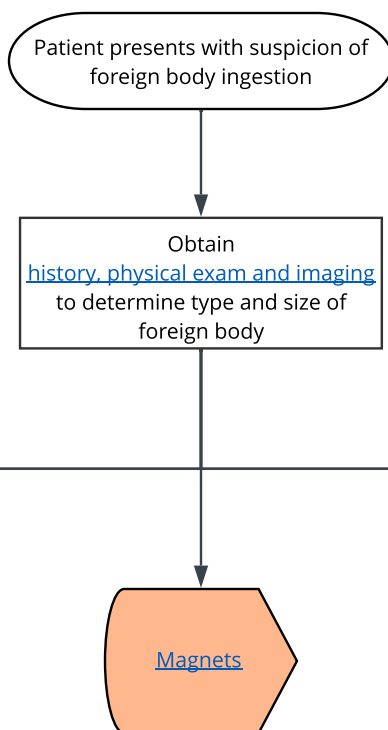


Exclusion criteria:

- Respiratory distress or failure
- Known abnormal GI anatomy
- Previous GI surgery
- Suspected aspiration of foreign body (See [Foreign Body Aspiration Clinical Pathway](#))



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Pre-Hospital Recommendations for Ingestion of Button Batteries

Children ≥ 1 yr, ingestion in prior 12 hrs:

- Consider giving honey:
 - 10 mL every 10 minutes until recovery of the foreign body, for a maximum of 6 times
- Proceed to ED immediately

Certain button batteries have a bitterant coating and a **blue dye released on contact with saliva**. This will stain the tongue/buccal mucosa blue to help identify a potential button battery ingestion.

Magnet Precautions

- Remove all metallic, magnetic objects from child's environment
- Ensure no magnets, metal on child's clothing (buckles, snaps, buttons)
- Ensure no magnets available for ingestion
- Continue precautions until magnets are passed

Foreign Body Ingestion: Button Batteries



Children's Mercy
KANSAS CITY

Evidence Based Practice

Exclusion criteria:

- Respiratory distress or failure
- Known abnormal GI anatomy
- Previous GI surgery
- Suspected aspiration of foreign body (See [Foreign Body Aspiration Clinical Pathway](#))
- Magnet co-ingestion (see [Ingested Foreign Bodies: Magnets pathway](#))



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Considerations for Emergent Esophageal Removal of Batteries

General considerations:

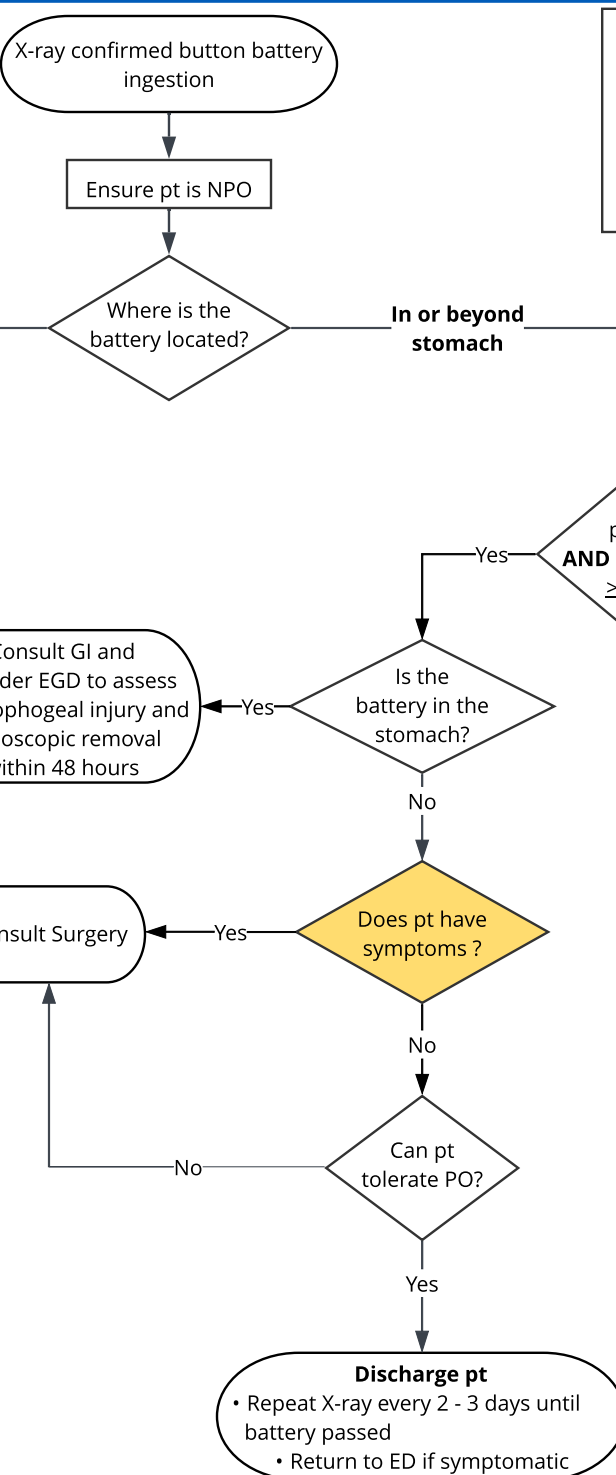
- Serious burns can occur within 2 hrs of ingestion
- Symptoms may be delayed
- If mucosal injury is present after removal, observe for delayed complications (esophageal perforation, tracheoesophageal fistula, vocal cord paralysis, tracheal stenosis, mediastinitis, aspiration pneumonia, perforation into a large vessel)
- Complications may be delayed weeks, months

Risk factors for severe esophageal injury:

- Ingested batteries ≥ 20 mm in diameter
- Children < 5 yrs of age
- Multiple battery ingestions
- Esophageal exposure time > 2 hrs

Upon endoscopic removal:

- Irrigate esophagus with 50 - 100 mL of 0.25% acetic acid upon battery removal
- Consider antibiotic prophylaxis for children with severe esophageal injury, perforation, or fever



Pre-Hospital Recommendations

- Children ≥ 1 yr, ingestion in prior 12 hrs:
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 - Proceed to ED immediately

Certain button batteries have a bitterant coating and a **blue dye released on contact with saliva**. This will stain the tongue/buccal mucosa blue to help identify a potential button battery ingestion.

Consider Endoscopic removal if:

- Pt develops GI symptoms **OR**
- Object has not passed stomach by time of repeat X-ray

Symptoms

- Anorexia
- Vomiting
- Abdominal pain
- Fever
- Hematochezia
- Abdominal distention

Battery Facts

- Lithium cell batteries are most frequently involved in esophageal injuries
- Determination of actual battery diameter prior to removal or passage is unlikely in at least 40% of cases
- Assume hearing aid batteries are < 12 mm
- X-ray overestimates the diameter

Resources

- National Capital Poison Center
 - 1-800-222-1222
- Button Battery Ingestion Triage and Treatment Guideline:
www.poisson.org/battery/guideline
- National Battery Ingestion Hotline:
 - 1-800-498-8666

Contact: EvidenceBasedPractice@cmh.edu

[Link to synopsis and references](#)

Last Updated: 7.22.2024

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Foreign Body Ingestion: Coins/Blunt Objects



Children's Mercy
KANSAS CITY

Evidence Based Practice

Exclusion criteria:

- Ingestion of radiolucent objects
- Respiratory distress or failure
- Known abnormal GI anatomy
- Previous GI surgery
- Suspected aspiration of foreign body ([See Foreign Body Aspiration Clinical Pathway](#))

Coin flip procedures:

- May be performed at the discretion of Surgery

X-ray confirmed
coins/blunt
objects

Ensure pt is NPO

Consider composition of foreign
body and potential for toxicity
See information regarding
lead-containing foreign bodies

Lead-containing foreign bodies or large burdens of lead paint chips

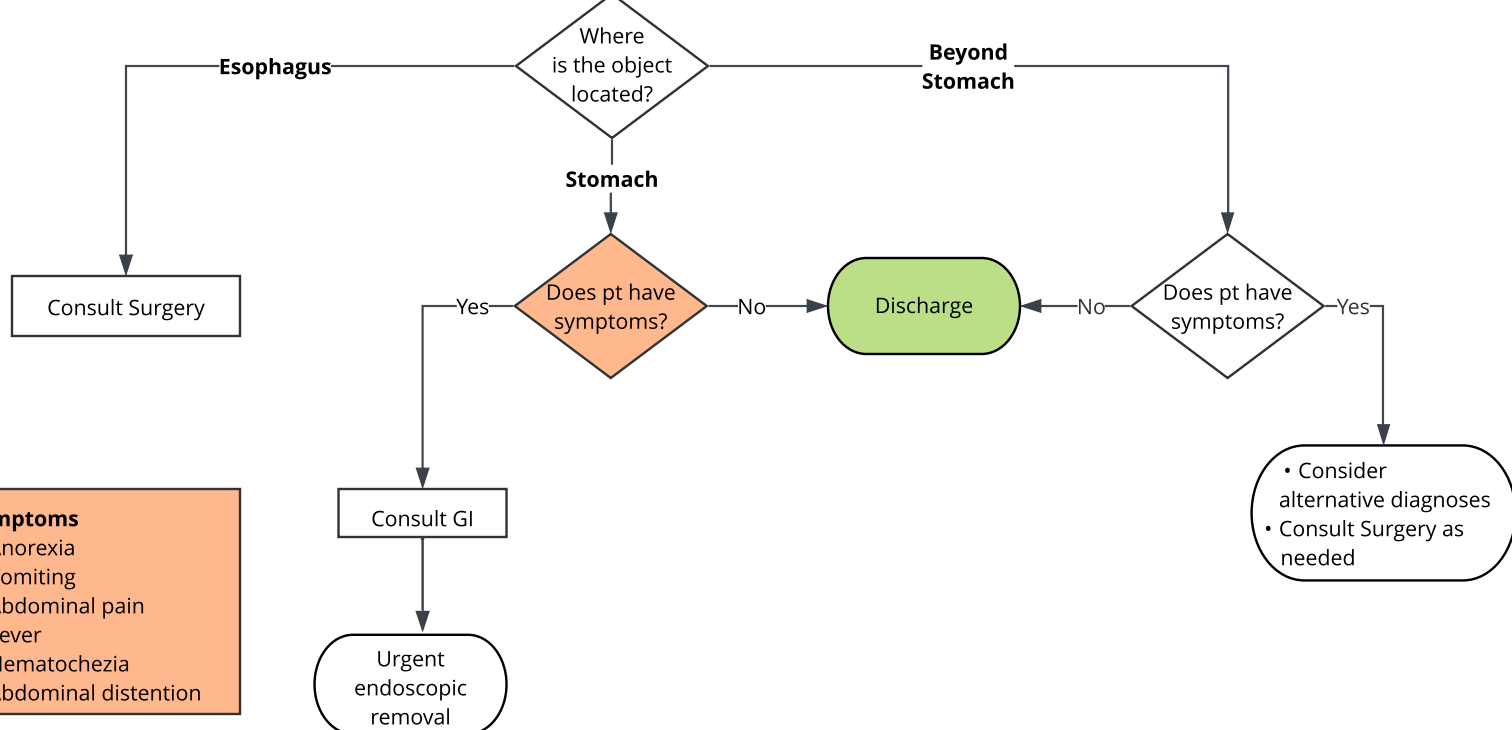
- Lead-containing foreign bodies may result in significantly elevated blood lead levels within 24 hrs.

Gastric location

- Consult Toxicology and GI, obtain baseline blood lead level.
- Prompt endoscopic removal should be considered.
- Proton pump inhibitor and prokinetic therapy may also be of value.

Location beyond pylorus

- Consult Toxicology and GI, obtain baseline blood lead level.
- Whole bowel irrigation with Golytely may be of value, especially for large burdens of lead paint chips.
- Rarely, there may be a role for endoscopy or surgery.



Symptoms

- Anorexia
- Vomiting
- Abdominal pain
- Fever
- Hematochezia
- Abdominal distention

Diameters of standard US coins

Quarter	24 mm
Nickel	21 mm
Penny	19 mm
Dime	18 mm
Coins may appear larger on X-ray	



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Discharge Instructions:

- No endoscopy needed
- Follow up with GI or PCP and repeat X-ray at 2 weeks
- Endoscopic removal if not passed within 2 - 4 weeks
- Repeat X-ray immediately before removal to ensure object still present

Items in Stomach

- Cylindrical battery
 - Repeat X-ray 3 - 4 days
- **Note:** Width > 2 cm, length > 5 cm, less likely to pass pylorus/duodenum

Items Beyond Stomach

- Will likely pass
- Return if symptomatic

Contact: EvidenceBasedPractice@cmh.edu

[Link to synopsis and references](#)

Last Updated: 7.22.2024

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Considerations for multiple non-separated magnets

- Size and formation of attached magnets (ball vs. bracelet)
- Number of magnets
- Low threshold to treat non-separated magnets as "multiple"

Magnet Precautions

- Remove all metallic, magnetic objects from child's environment
- Ensure no magnets, metal on child's clothing (buckles, snaps, buttons)
- Ensure no magnets available for ingestion
- Continue precautions until magnets are passed

Symptoms

- Anorexia
- Vomiting
- Abdominal pain
- Fever
- Hematochezia
- Abdominal distention

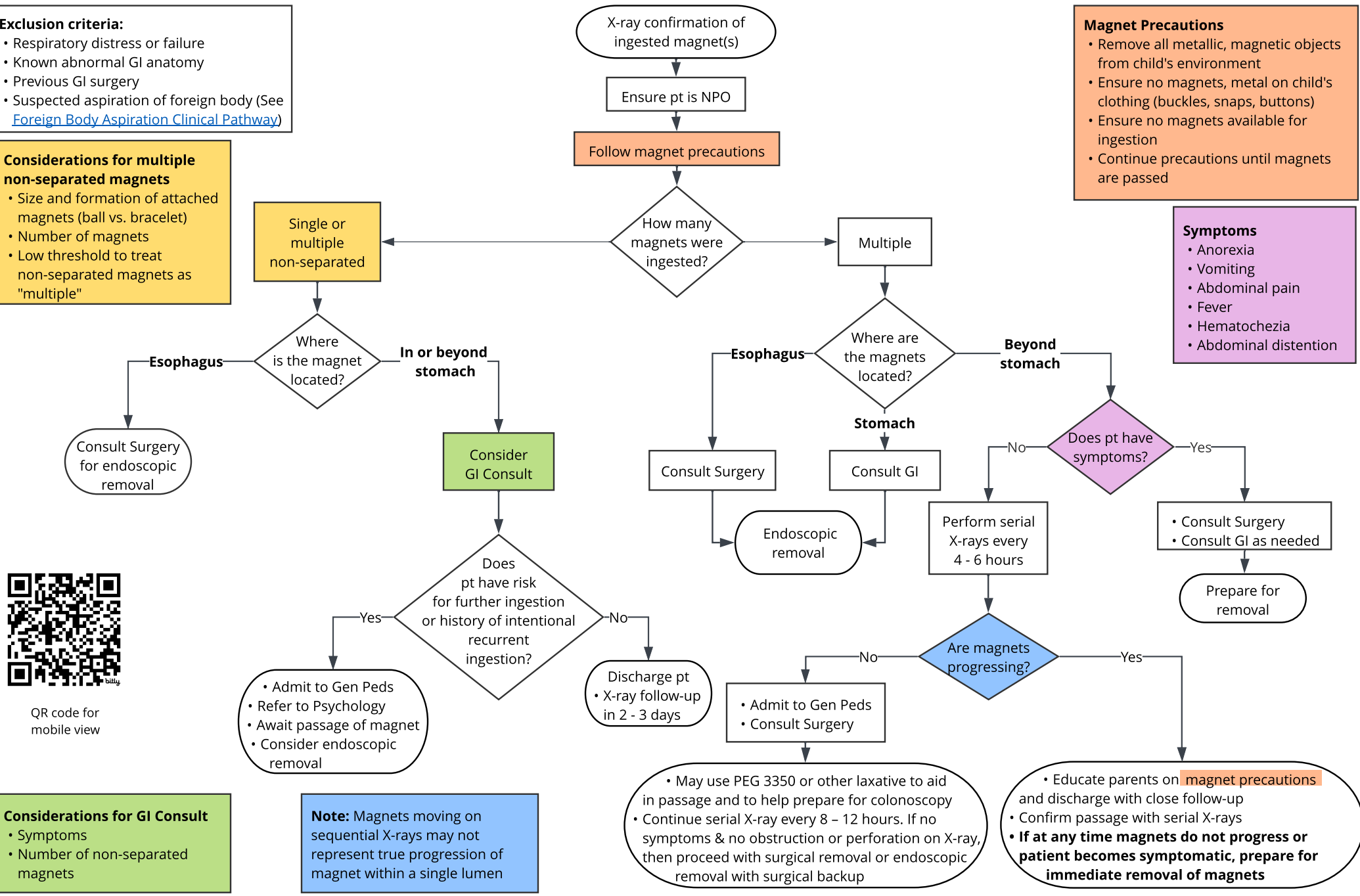


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Considerations for GI Consult

- Symptoms
- Number of non-separated magnets

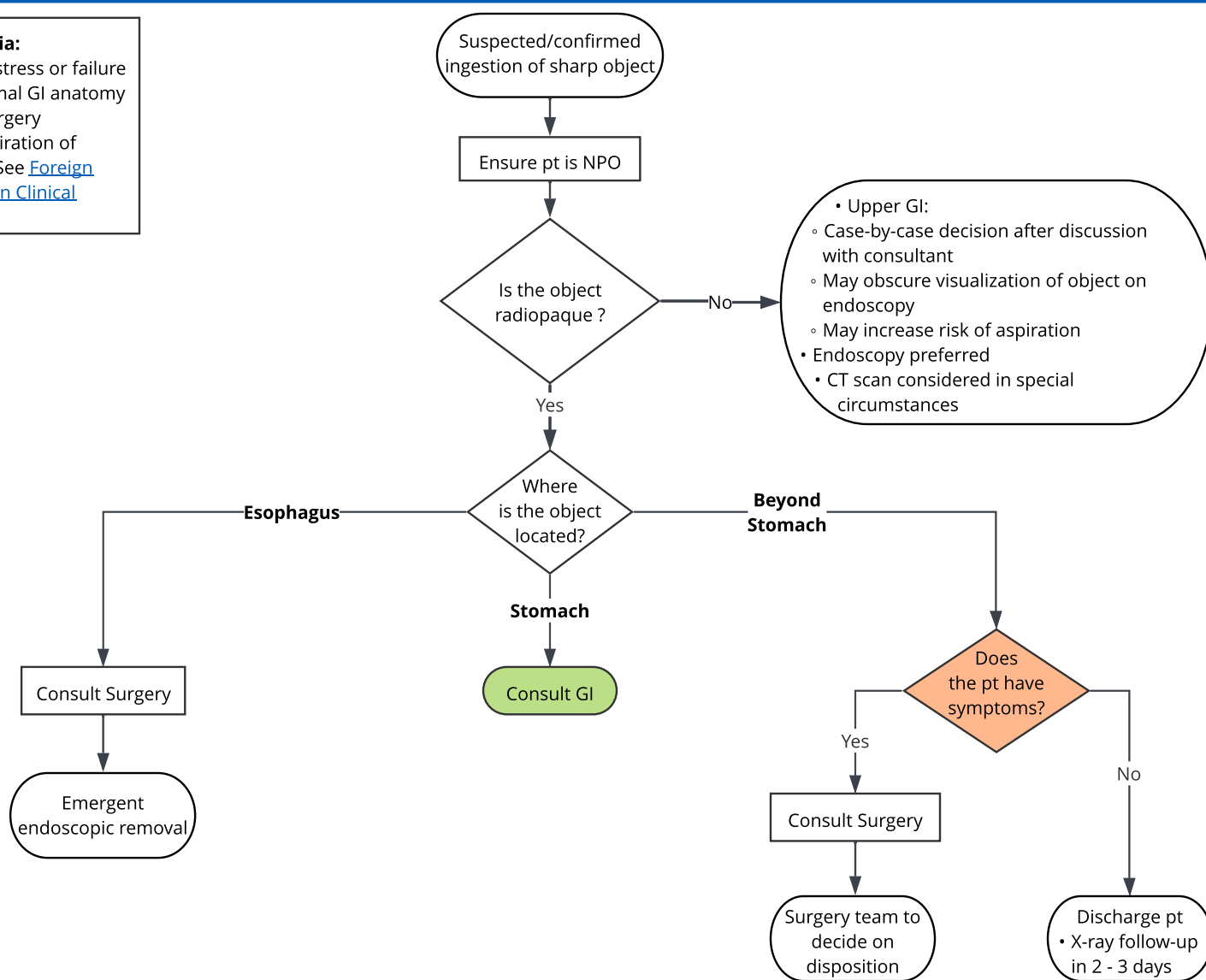
Note: Magnets moving on sequential X-rays may not represent true progression of magnet within a single lumen





Exclusion criteria:

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Considerations for GI:

- Consider urgent endoscopic removal for items ≥ 3 cm in length or ≥ 2 cm in width
- For short objects with a heavier blunt end (like a nail), consider discharge and follow-up X-ray in 2 - 3 days

Symptoms

- Anorexia
- Vomiting
- Abdominal pain
- Fever
- Hematochezia
- Abdominal distention



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