

Endoscopic Retrieval of Impacted Toothbrush in the Jejunum Causing Small Bowel Obstruction

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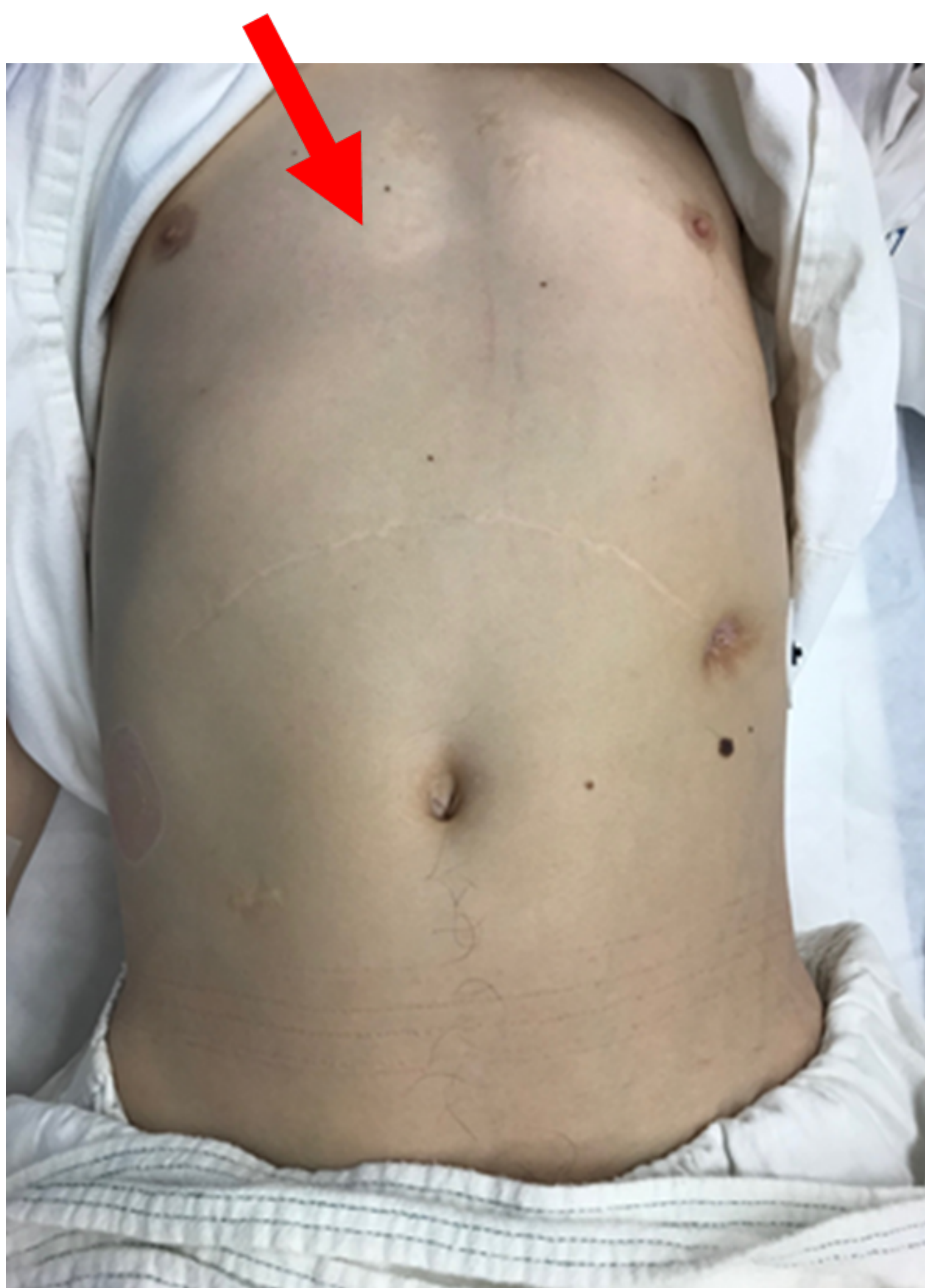
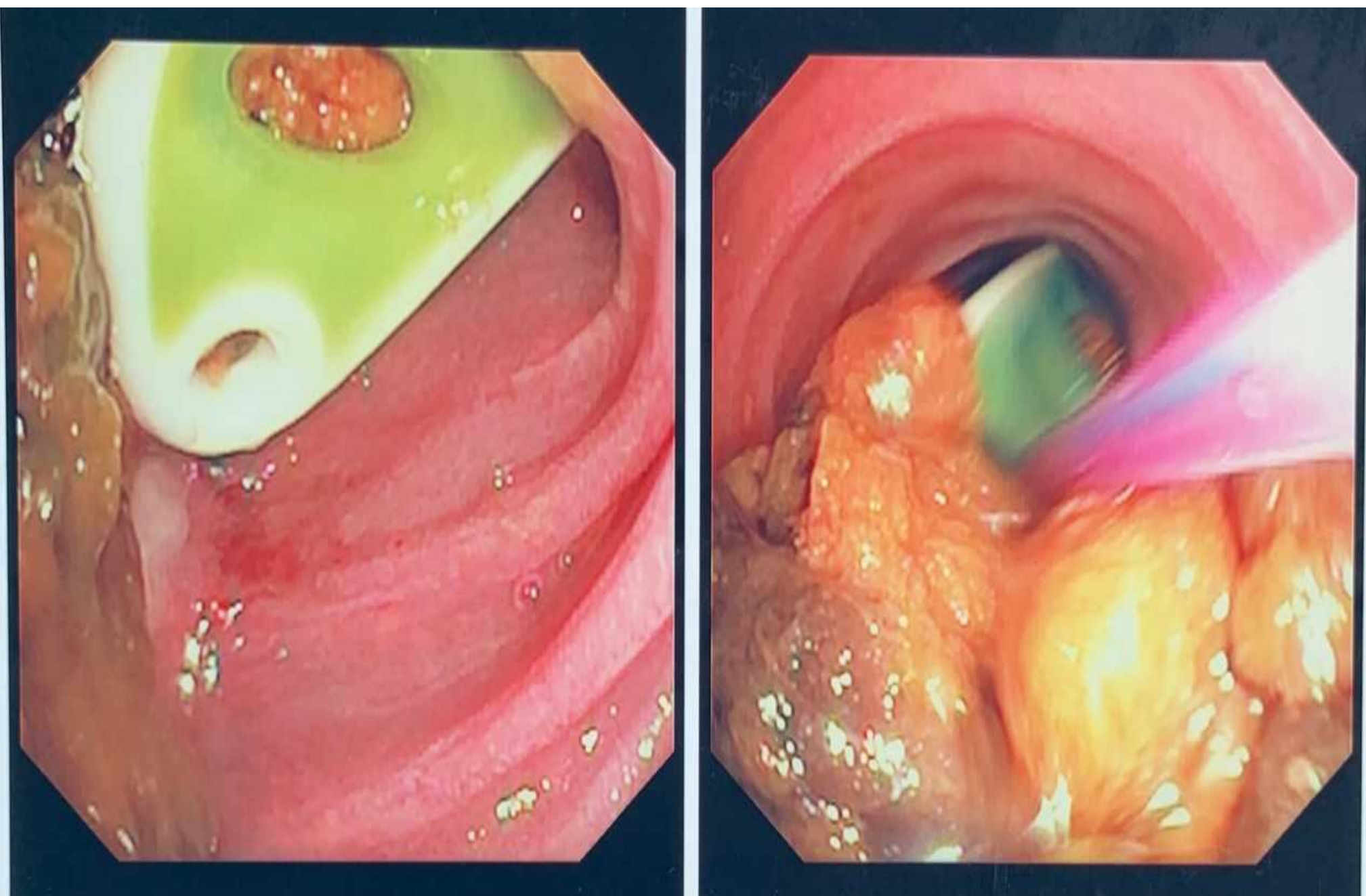
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Introduction

Ingestion of a foreign body is commonly seen in emergency rooms. Apart from sharp, corrosive or magnetic materials, most will pass spontaneously without the need for intervention. Generally, once a foreign body reaches the stomach, conservative management is indicated. The American Society for Gastrointestinal Endoscopy recommends endoscopic removal of objects longer than 6-10cm as these will have difficulty passing the duodenal sweep. However, there are currently no clear recommendations on the management of a foreign body distal to the duodenum, that is unlikely to pass spontaneously. There are a few reported cases of small objects being successfully retrieved by double balloon endoscopy. To our knowledge, there are no reported cases of larger objects successfully removed from the distal small bowel using endoscopy.

Case Report

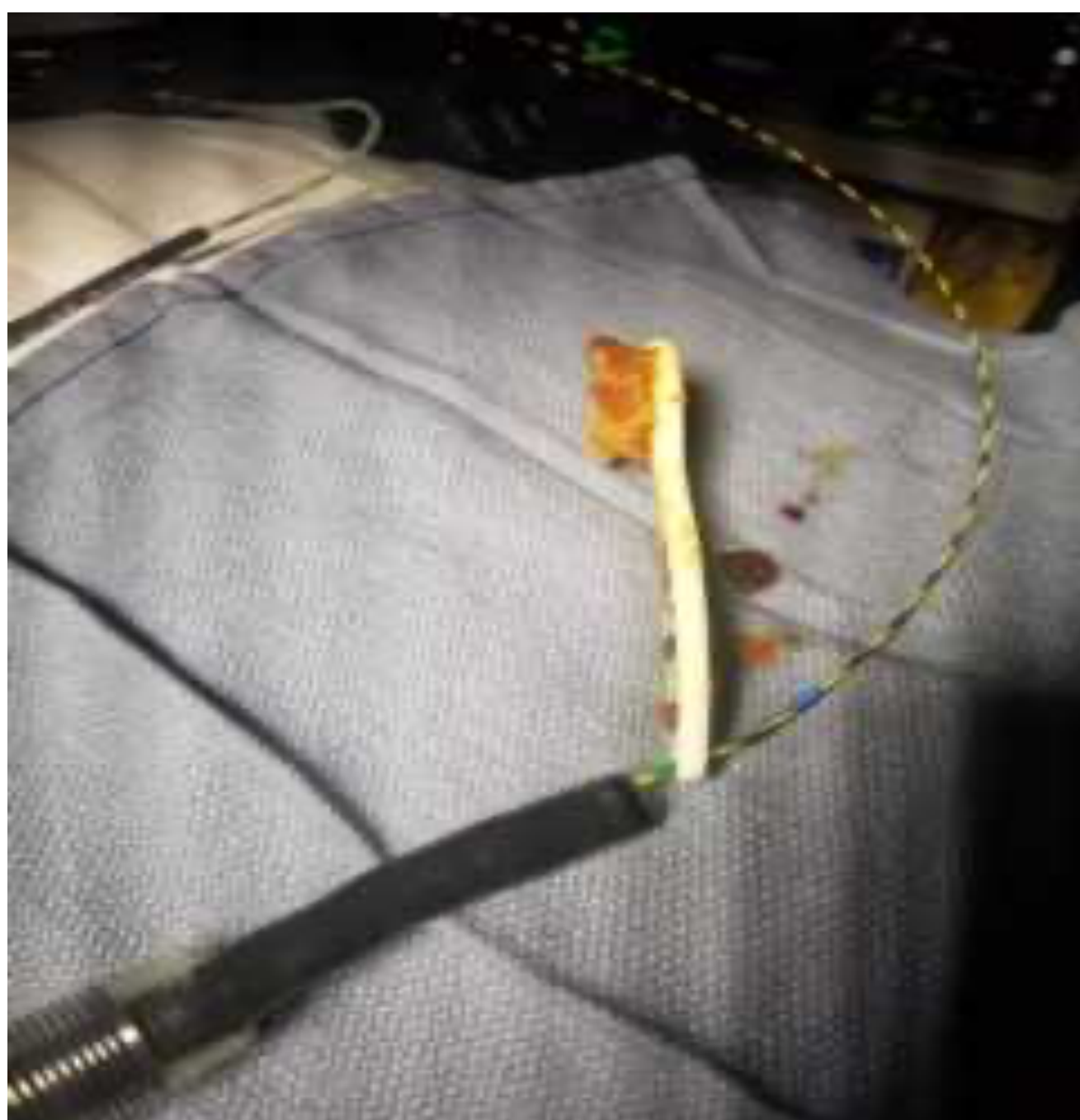
- A 24-year-old male presented to Northwest Texas Hospital 48 hours after intentionally ingesting a toothbrush
- **Past Medical History**
 - Abdominal surgery as a baby
 - Patient did not recall details of the procedure
- **Physical exam**
 - Tenderness to palpation in the epigastric area
 - Transverse abdominal scar
- CT scan showed a linear object within the proximal small bowel in the right upper quadrant causing an obstruction
- Decided to take patient to OR
- **Operating Room**
 - Planned to attempt to retrieve the foreign body endoscopically and proceed with robotic assisted exploration if unsuccessful.
 - A gastroscope was inserted into the stomach and to the duodenal bulb
 - Duodenal bulb was dilated with a blind end and a side opening
 - Most consistent with previous surgery for duodenal atresia with a duodenojejunostomy anastomosis
 - For the need of the length, colonoscope was used and introduced to the duodenal bulb and then sideways into the jejunum
 - After failed attempts using a CRE balloon, an Apollo 3 sphincterotome was introduced into the scope
 - The tip of the Apollo was inserted into the proximal hole and the balloon was inflated
 - All was pulled back through the mouth
- **Patient tolerated the procedure well**



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Discussion

- Management of an ingested foreign body is influenced by many factors including:
 - The patient- age, clinical condition, surgical history
 - Characteristics of the object- size, shape, composition, anatomic location
 - The endoscopist/surgeon- resources, expertise
- The Society for Gastrointestinal Endoscopy currently recommends endoscopic removal of sharp/pointed objects or those longer than 6 cm in the proximal duodenum or above
- There are no recommendations, however, for an object that has passed the duodenum but is unlikely to pass without intervention.



Conclusion

There are no current recommendations on management of a foreign body that is distal to the duodenum. We propose that endoscopic intervention should still be first line over surgical procedures.

References

- Webb A (1995) Management of Foreign Bodies of the Upper Gastrointestinal Tract: Update. Gastrointest Endosc 41(1):39-51
- American Society for Gastrointestinal Endoscopy Standards of Practice Committee, AGA Practice Committee, ACG Practice Committee, SAGES Practice Committee (1995) Guidelines for the Management of Ingested Foreign Bodies. Gastrointest Endosc 42(6):622-625
- Ertan A, Kedia SM, Agrawal NM, Akdamar K (1983) Endoscopic removal of a toothbrush. Gastrointest Endosc 29(2):144-145.
- Nakamura M, Hirooka Y, Watanabe O, Yamamura T, Nagura A, Yoshimura T, Nakano A, Ando T, Ohmiya N, Goto H (2015) Minimally Invasive Extraction of a Foreign Body from the Small Intestine Using Double-Balloon Endoscopy. Nagoya J Med Sci 77(1-2):189-194
- GG Ginsberg (1995) Management of ingested foreign objects and food bolus impactions. Gastrointest Endosc 41:33-38
- Palta R, Sahota A, Bemarki A, Salama P, Simpson N, Laine L (2009) Foreign-body ingestion: characteristics and outcomes in a lower socioeconomic population with predominantly intentional ingestion. Gastrointest Endosc 69(3):426-433