

LIMITATIONS OF ENDOSCOPIC TOOLS FOR FOREIGN BODY RETRIEVAL: A CASE OF MASSIVE FERROMAGNET INGESTION



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INTRODUCTION

- Foreign body (FB) ingestion and subsequent complications are commonly encountered in the pediatric population. In adults, most ingested foreign objects are either bone or other food particles. However, in those with psychosis, the foreign body ingested is often a material or substance other than food.
- Esophagogastroduodenoscopy (EGD) remains the standard of care for FB retrieval. The decision to pursue endoscopic therapy, is based on multiple considerations including the size of the FB, degree of possible injury and risk of perforation.
- We present a case of FB ingestion resulting in practically impossible endoscopic retrieval. We also highlight endoscopic cues that should prompt a gastroenterologist to consider surgical evaluation in high-risk cases.



Figure 1a: X-Ray without contrast on admission



Figure 1b: X-Ray without contrast post-surgery

CLINICAL PRESENTATION

- A 49-year-old man with schizoaffective disorder and a history of multiple ingestions of magnets requiring surgical removal, presented to the hospital for vomiting and diarrhea for 4 days.
- An abdominal x-ray revealed a large radiopaque structure taking the shape of the stomach in the gastric region [Figure 1a].
- EGD revealed multiple large consolidated ovoid masses of metal in the gastric body and antrum [Figure 2a].
- Endoscopic retrieval was attempted using a cold snare, which could not be wrapped around or secured around the FB without slipping upon closure. A Roth net was tried with the same result.
- Bites of the FB using rat-tooth forceps slightly deteriorated the mass and impeded the full-closing of the jaws of the forceps so that the forceps could not be retrieved through the working channel. The malleable material then had to be irrigated and scraped off to allow for reuse. Due to the large size of the FB and small space for gastroscope maneuverability and presence of multiple scattered large and deeply cratered ulcers along the gastric wall, the procedure was aborted to avoid perforation [Figure 2b].
- The patient was referred for surgical intervention and soon thereafter underwent FB removal via partial gastrectomy with gastric reconstruction [Figure 1b].
- Removed FB weighed 2885 grams and measured 32 x 31 x 1.5 cm.

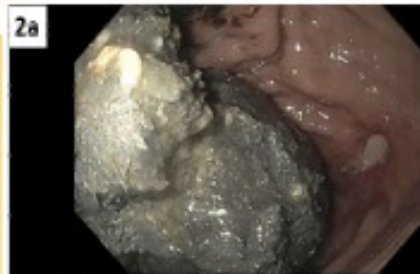


Figure 2a: Foreign body in gastric body

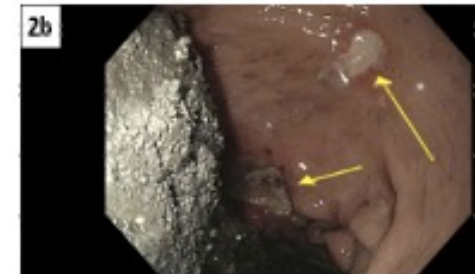


Figure 2b: Foreign body with ulcers in gastric body

CONCLUSION

- EGD is the standard of care for the management of FB ingestion, care should be practiced when planning and executing these procedures.
- The type, size, and location of FB, history of surgical anatomy, contact ulceration and risk of perforation are important considerations for the endoscopist.
- Removal of a large amount of crushed ferrite magnet is practically impossible to remove from the stomach with commonly used endoscopic tools. Surgical intervention should be considered when the risk of perforation with endoscopic intervention is high and/or endoscopic attempts at retrieval have been practically exhausted.