

AN INCIDENTAL CASE OF - HOLLOW VISCUS PERFORATION SECONDARY TO FOREIGN BODY IMPACTION

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Abstract:

Introduction:

Ingestion of foreign bodies is a common occurrence, with the majority passing through the gastrointestinal tract without issue. However, in rare cases, foreign bodies can lead to bowel perforation, presenting challenges in preoperative diagnosis due to various factors such as patients' inability to recall ingestion and the difficulty of identifying certain foreign bodies on imaging scans.

Presentation of the Case:

A 58-year-old male with a known history of Bronchial Asthma presented to JSS Hospital with abdominal pain, constipation, and distension. Upon examination, rigidity and diffuse tenderness were noted. X-ray and ultrasound findings suggested hollow viscus perforation, leading to a working diagnosis of emergency exploratory laparotomy.

Discussion:

Foreign body ingestion is frequently observed in certain populations and can lead to gastrointestinal perforation, with the terminal ileum being the most common site. Diagnosis of silent perforations is often incidental, with imaging modalities such as CT scans playing a crucial role. Management of asymptomatic abdominal foreign bodies presents challenges and requires individualized approaches. Clinical presentations vary widely, with some cases being asymptomatic, further complicating diagnosis without a definitive history of foreign body ingestion.

Conclusion:

Gastrointestinal perforation resulting from unintentional ingestion, particularly of dietary items like fish bones, is prevalent in the adult population. Patients often do not recall swallowing foreign bodies prior to surgery, with denture wearers being at higher risk. Clinical presentation varies depending on the perforation site, with perforations in the jejunum or ileum typically having a more severe clinical course compared to other sites. Early recognition and management are essential in mitigating complications associated with gastrointestinal perforation from foreign body ingestion.

Keywords: Hollow viscus perforation , foreign body , Ileal perforation

BACKGROUND

Although human ingestion of foreign bodies is not unheard of, most pass through the gastrointestinal tract without complication. Of all foreign bodies ingested, less than 1% lodge in the gastrointestinal tract, making bowel perforation due to such ingestion relatively rare. However, for those ingestions that do cause perforations, surgeons face quite difficult challenges in preoperative diagnosis, because of: (1) the patient's inability to recall such ingestion; (2) the most common symptoms, abdominal pain and fever, mimicking those of appendicitis or diverticulitis; and (3) most ingested foreign bodies being various bones, which are quite difficult to identify by abdominal X-ray film or even CT scan. Therefore, ingested dietary foreign body perforations are more commonly diagnosed during laparotomy for an acute abdomen. [1]

CASE PRESENTATION

A 58-year-old male, known case of Bronchial Asthma, came to JSS hospital with complaints of pain in abdomen for 1 day associated with constipation and abdominal distension. Clinically, rigidity was present on per abdomen examination, with diffuse tenderness. X-ray erect abdomen showed air under diaphragm. Ultrasound of abdomen and pelvis - mild ascites and prostatomegaly. Bowel loops very obscured by gas shadows and could not be assessed. All Haematological investigations were within normal limits. 2d echo - gave an impression of Rheumatic heart disease with Dilated left atrium and severe pulmonary hypertension. Patient was admitted with a working diagnosis of Hollow viscus perforation and was worked up for emergency exploratory laparotomy and proceed.



Figure 1: *Perforation notes with Foreign body (Bone shard)*

Upon visualization, a through and through perforation of the Terminal ileum 30 cm from the ileocolic junction was noted. One perforation was at the mesenteric and the other on the antimesenteric border as shown in figure 1. A foreign body (bone shard) was noted at the site of the perforation. Moderate collection was noted in the pelvis. There was bowel and mesenteric edema noted. Resection of the perforated segment was carried out - around 7 cm was resected and, ileoileal end to end anastomosis was carried out. Patient was not extubated, as he had abnormal breathing patterns and was shifted to the ICU.



Figure 2: 2 perforations noted at mesenteric and antimesenteric border of Terminal ileum

DISCUSSION

Although most ingested foreign bodies pass through the gastrointestinal tract without incident, approximately 1% lodge in the gastrointestinal tract. [1] Foreign body ingestion is frequently seen in prisoners, psychiatric patients, alcoholics and senile patients [2] The alimentary canal is remarkably resistant to perforation, with less than 4% of ingested bodies retained in the gastrointestinal tract causing perforations between the mouth and anus, and cases of perforation are mostly caused by sharp objects and erosion. Because larger objects are usually retained in the oesophagus and stomach, intestinal perforation by foreign bodies is rare. [1]

Sometimes, a foreign body migrates asymptotically into the abdominal cavity by eroding through the bowel wall without causing leakage of bowel contents. Most foreign bodies causing a so-called silent perforation are diagnosed as incidental finding on imaging, with incidences rising due to increased use of imaging modalities such as CT scans. Optimal management of asymptomatic abdominal foreign bodies, conservative or surgical removal, is challenging and has to be determined on individual basis. [6]

Goh found the most common site of intra-abdominal perforation is the Terminal ileum (38.6 %) [3] The presence of free gas under the diaphragm is uncommon with foreign bodies perforation of the GI tract. This is because the perforation is usually caused by impaction and progressive erosion through the intestinal wall, allowing it to be covered by fibrin, omentum, or adjacent loops of the bowel. This limits the passage of large or detectable amounts of intraluminal air into the peritoneal cavity. [4]

A retrospective study conducted by Tingting Hu et al , published in August 2022 , concluded that Foreign bodies located in the jejunum or ileum were more likely to cause severe complications than those located in the duodenum , and are also more likely to undergo surgery. [5]

Intraabdominal FB perforations of the GI tract have a wide spectrum of clinical presentations that may be acute or chronic. They may be broadly classified as acute peritonitis, which may be localized or generalized, an abdominal wall tumor or abscess, or an intraabdominal mass or abscess formation. Occasionally, patients present with unusual or even bizarre clinical manifestations, including hemorrhage, bowel obstruction, or even ureteric colic. In stark contrast, FB perforations may also be totally asymptomatic. With these varied clinical presentations, it is not surprising that a clinical diagnosis is seldom made without a definitive history of FB ingestion.[3]

Goh et al also pointed out in their study , that only one (2%) of the patients with a perforating dietary FB provided a definitive history of FB ingestion.

Hence to conclude , Perforation in the gastrointestinal tract, commonly resulting from unintentional ingestion, particularly of dietary items such as fish bones, is a prevalent occurrence in the adult population. Our findings suggest that the consumption of non-vegetarian food during alcohol ingestion significantly increases the risk of intestinal perforation, and individuals should exercise caution to mitigate this potential danger. The clinical presentation of intra-abdominal perforations varies widely, influenced in part by the perforation site. Perforations in the stomach, duodenum, or large intestine often manifest with a longer, less severe clinical course compared to those in the jejunum or ileum.

LEARNING POINTS

- 1. **Prevalence and Complications:** Although most ingested foreign bodies pass through the gastrointestinal tract without incident, approximately 1% can cause perforations, with certain populations like prisoners, psychiatric patients, alcoholics, and senile patients being more susceptible.**
- 2. **Challenges in Diagnosis:** Surgeons face difficulties in preoperative diagnosis due to patients' inability to recall ingestion, symptoms mimicking other conditions like appendicitis, and the difficulty of identifying certain foreign bodies, such as bones, on imaging scans.**
- 3. **Sites of Perforation:** The terminal ileum is the most common site of intra-abdominal perforation caused by foreign bodies, with less common perforations occurring in other parts of the gastrointestinal tract.**
- 4. **Variety of Clinical Presentations:** Intra-abdominal foreign body perforations can present with a wide range of symptoms, from acute peritonitis to chronic conditions, and may even be asymptomatic, making clinical diagnosis challenging.**

5. **Risk Factors and Clinical Course: Certain factors, such as being a denture wearer, increase the risk of perforation. Additionally, the clinical course can vary depending on the perforation site, with those in the jejunum or ileum often presenting with more severe complications compared to other parts of the gastrointestinal tract.**

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