

Fishbone Perforation of The Gastrointestinal (Gi) Tract

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Abstract:

Ingesting a foreign body (FB) is not an uncommon occurrence. Most pass through the gastrointestinal (GI) tract uneventfully, and perforation is rare. This article aims to review the medical literature on ingested FB perforations of the GI tract to enhance the clinician's differential diagnosis.

Keywords: GI tract; hepatology; gastroenterology; thrombosis

Introduction

According to Open Evidence AI [9], Fishbone gastrointestinal (GI) tract perforation is an uncommon but clinically significant event that can lead to a wide spectrum of complications.

While most ingested fishbones pass through the GI tract uneventfully, their sharp, rigid, and elongated structure makes them particularly prone to impaction and perforation, especially at anatomical sites of narrowing or angulation. The clinical presentation is often subtle and nonspecific, and the diagnosis is frequently delayed due to the lack of a recalled ingestion event and the limitations of conventional imaging. The consequences of missed or delayed diagnosis can be severe, including localized or generalized peritonitis, abscess formation, fistulae, bowel obstruction, hemorrhage, and, in rare cases, life-threatening sepsis or vascular injury. This comprehensive review synthesizes the current clinical knowledge regarding the pathophysiology, complications, diagnostic challenges, and management strategies for fishbone perforation of the GI tract, with a focus on gastrointestinal complications.

Epidemiology and Risk Factors

Fishbone ingestion is a common clinical scenario worldwide, particularly in regions with high fish consumption. However, GI perforation is rare, occurring in less than 1% of all foreign body ingestions. Adults, especially the elderly and those with dentures, are at higher risk for perforation due to decreased oropharyngeal sensation and impaired mastication, which increase the likelihood of unintentional ingestion and impaction of sharp bones. In children, while foreign body ingestion is frequent, the risk of perforation and severe GI complications is substantially lower, with most cases involving the esophagus and resolving with conservative or endoscopic management. The North American Society for Pediatric Gastroenterology, Hepatology and Nutrition (NASPGHAN) notes that sharp foreign body ingestion, including fishbones, can lead to serious complications in children, but the overall incidence of perforation is rare in this population [1].

Pathophysiology and Mechanisms of Complication

Fishbone perforation occurs when the sharp end of the bone penetrates the GI wall, most commonly at sites of physiological narrowing or angulation

such as the distal ileum, ileocecal region, rectosigmoid colon, and, less frequently, the stomach or duodenum. [3-5]. The process is often insidious, with the initial mucosal breach progressing over days to weeks before overt complications develop. Once the fishbone breaches the full thickness of the bowel wall, it introduces enteric bacteria into adjacent tissues, triggering a local inflammatory response. The omentum and mesentery may attempt to wall off the perforation, leading to localized abscess formation. If the perforation is not contained, enteric contents may spill freely into the peritoneal cavity, resulting in peritonitis. Chronic inflammation and persistent infection can lead to fistula formation, while migration of the fishbone beyond the GI tract can result in abscesses in distant locations or organ-specific complications. [6-8].

Common Gastrointestinal Complications

The most common GI complications following fishbone perforation include localized or generalized peritonitis, intra-abdominal abscess formation, fistulae, bowel obstruction, hemorrhage, and sepsis. These complications' clinical course and severity are influenced by the anatomical site of perforation, the time to diagnosis, and the presence of comorbidities.

Localized peritonitis is frequently observed when the perforation is contained by adjacent structures, leading to focal peritoneal inflammation and generalized peritonitis.

Case Reports

Goh et al report a total of 62 consecutive patients who underwent surgery for an ingested FB perforation of the GI tract between 1990 and 2005 were retrospectively reviewed. Three patients with no definite FB demonstrated intraoperatively were included. Of the 59 FBs recovered, 55 (93%) were toothpicks and dietary FBs such as fish bones or bone fragments. A definitive preoperative history of FB ingestion was obtained for only two patients, and 36 of 52 patients (69%) wore dentures. Altogether, 18 (29%) perforations occurred in the anus or distal rectum, and 44 perforations were intraabdominal, with the most common abdominal site being the distal ileum (39%). Patients with FB perforations in the stomach, duodenum, and large intestine were significantly more likely to be afebrile, to have chronic symptoms (> 3 days) to have a normal total white blood cell count, and to be

asymptomatic or present with an abdominal mass or abscess compared to those with FB perforations in the jejunum and ileum.

Shi et al present a case of duodenal perforation caused by accidental ingestion of a fishbone, presenting with right upper abdominal pain and jaundice. Imaging studies revealed duodenal perforation, common bile duct stones, and portal vein thrombosis. They analyzed the potential mechanisms underlying this complex pathological condition by reviewing the patient's clinical presentation, diagnostic process, treatment measures, and prognosis, and proposed appropriate clinical management strategies. Duodenal perforation caused by foreign bodies is a rare but potentially fatal condition that may lead to severe complications. Foreign body-induced duodenal and bile duct perforation can act as potential triggers for common bile duct stones and portal vein thrombosis.

Hakeem et al report on a case of duodenal perforation caused by accidental ingestion of a fishbone, presenting with right upper abdominal pain and jaundice. Imaging studies revealed duodenal perforation, common bile duct stones, and portal vein thrombosis. Duodenal perforation caused by foreign bodies is a potentially fatal condition that may lead to severe complications. Foreign body-induced duodenal and bile duct perforation can act as potential triggers for common bile duct stones and portal vein thrombosis.

Conclusions

Foreign body-induced intestinal perforation can act as a potential trigger for abdominal peritonitis and the above-listed complications. It requires heightened vigilance and comprehensive evaluation. Prompt diagnosis and individualized treatment strategies are critical for improving patient outcomes.

References

1. Kramer RE, Lerner DG, Lin T, et al. (2015). Management of Ingested Foreign Bodies in Children: A Clinical Report of the NASPGHAN Endoscopy Committee. *Journal of Pediatric Gastroenterology and Nutrition*.;60(4):562-574.
2. Quitadamo P, Battagliere I, Del Bene M, et al. (2023). Sharp-Pointed Foreign Body Ingestion in Pediatric Age. *Journal of Pediatric Gastroenterology and Nutrition*. ;76(2):213-217.
3. Song J, Yang W, Zhu Y, et al. (2020). Ingested a Fish Bone-Induced Ileal Perforation: A Case Report. *Medicine*.;99(15):19508.
4. Paixão TS, Leão RV, de Souza Maciel Rocha Horvat N, et al. (2017). Abdominal Manifestations of Fishbone Perforation: A Pictorial Essay. *Abdominal Radiology (New York)*.;42(4):1087-1095.
5. Goh BK, Chow PK, Quah HM, et al. (2006). Perforation of the Gastrointestinal Tract Secondary to Ingestion of Foreign Bodies. *World Journal of Surgery*.;30(3):372-327.
6. Rare Case of Omentum-Wrapped Abscess Caused by a Fish Bone Penetrating the Terminal Ileum.
7. Shi Y, Xu X, Wang Y, Qu W. (2025). Case Report: Fish Bone-Induced Duodenal Perforation Leading to Bile Duct Stones and Portal Vein Thrombosis. *Frontiers in Medicine*.;12:1546707.
8. Hakeem A, Shanmugam V, Badrinath K, Dube M, Panto P. (2015). Delay in Diagnosis and Lessons Learnt from a Case of Abdominal Wall Abscess Caused by Fishbone Perforation. *Annals of the Royal College of Surgeons of England*.;97(3):39-42.



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