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Extra-Intestinal Perforations Secondary to Ingested Foreign Body Perforations

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ABSTRACT

Foreign body ingestion is a common problem worldwide, with an estimated incidence of 120 per million. It is responsible for almost 1500 deaths per year. Toddlers are most frequently affected, although rare in conscious and mostly accidental, it is fairly common in psychiatric patients. 10–20% of the patients require endoscopic removal, and approximately 1% will develop perforation. Fish bone may account for 84% of the foreign bodies ingested accidentally, and the majority are eliminated from the gastrointestinal system without any symptoms.

INTRODUCTION

Swallowed fish bones are the most common cause of gastrointestinal perforation due to their sharp tips and long bodies. The most critical risk factor for fish bone ingestion is the use of dentures. Other minor risk factors are fast eating, extreme ages (children or elderly), alcohol abuse and mental retardation.

Goh BK et al reports that accidentally Ingested Foreign Bodies (IFB) are a common problem. Most of the IFB passes uneventfully through the gastrointestinal tract and is excreted in the stool.IFB are usually seen in alcoholics, elderly individuals with dentures, drug abusers, prisoners, individuals with mental disorders or learning difficulties, people with fast eating habits, and workers such as carpenters and dressmakers who tend to hold small sharp objects in their mouths. Elderly people may have trouble using dentures, and as the sense of feeling in the palate decreases, they may become prone to Foreign Body (FB) ingestion. The aim of this study, the authors state, is to present a review of case studies from a literature review of IFB, its diagnosis, and management.

Goh et al state that most of the foreign bodies causing gastrointestinal tract perforation were of a food origin, such as fish bones, chicken bones, bone fragments or shells. Another study on IFB found that a fish bone was the most frequently encountered foreign body causing GI tract perforation. In some cultures, or religions, people prefer to eat all parts of the fish, and thus, fish bone ingestion and related complications are common in these populations. Additionally, various GI complications were attributed to poultry bones, duck bones, rabbit bones, and meat bone fragments in the literature.

Omentum and Liver

Chen et al presented a 37-year-old man with a history of vague epigastric discomfort for about 2 months. A diagnosis of the foreign body-induced hepatic inflammatory mass was made based on abdominal computed tomographic scan and upper gastrointestinal endoscopy.

The patient underwent laparoscopic laparotomy. They maintain that during the operation, inflammatory signs were seen in the lesser omentum and the liver. Ultrasound-guided excision of the mass was performed

Dissecting the specimen revealed a fish bone measuring 1.7 cm in length. Early diagnosis and decisive treatment in time are lifesaving for patients with this potentially lethal condition [1].

Foreign Body-Induced Hepatic Inflammatory Mass

Chen J, et al reports on a 37-year-old man presented with a history of vague epigastric discomfort for about 2 months. The foreign body-induced hepatic inflammatory mass was diagnosed based on abdominal computed tomographic scan and upper gastrointestinal endoscopy. The patient underwent laparoscopic laparotomy. During the operation, inflammatory signs were seen in the lesser omentum and the segment the liver. Ultrasound-guided excision of the mass was performed. The authors state that dissecting the specimen revealed a fish bone measuring 1.7 cm in length. The patient recovered uneventfully and was discharged on day 5 after surgery [1].

Pericardial Involvement

Liu et al reported a 55-year-old man who suffered from chest pain and dyspnea on exertion for two weeks associated with night sweats, general malaise, poor appetite, and body weight loss. Friction rub was noted. Cardiac echo showed massive pericardial and pleural effusion with normal left ventricular function. Constrictive pericarditis was diagnosed based on clinical information. The Differential diagnosis included Tuberculosis (TB), malignancy, autoimmune disease, infection, hypothyroidism, and idiopathic conditions. CT showed thickness of the pericardium and a left lobe of the liver abscess. A straight tubular structure about 6 cm in length traverses the lateral segment of the liver to the pericardial space, and an unknown foreign body was suspected. Laparotomy was performed, and a 6.5 cm toothpick was found through the liver into the pericardium. The post-operative course was uneventful, and he was discharged one week later. The patient could not remember swallowing the toothpick before. He had no chest pain and dyspnea on exertion during a 6-month follow-up period [2].

Meckel's Diverticulum

Shahid et al report six patients who developed bowel perforation after fish bone ingestion, four of them found to have a rent in the ileum and two through Meckel's diverticulum, and presented with abdominal pain and localized peritonitis. All underwent surgical exploration and removal of the fish bone and closure of the small intestine excision of the diverticulum. Foreign body ingestion should be kept in mind in suspicious cases [3].

Hydronephrosis

Nigri et al report a case of a 36-year-old man who was admitted to the Emergency Department with right flank pain suggestive of renal colic. CT scan showed the presence of a foreign body in the inferior duodenal flexure. Upper gastrointestinal endoscopy demonstrated a 6.5-cm wooden toothpick deeply embedded in the duodenal wall; this was removed via endoscopy. According to the authors, the peri-duodenal inflammatory reaction had encased the right ureter, resulting in hydronephrosis. The patient did well and was discharged on post-operative day. He did not recall

toothpick ingestion. The authors state that when evaluating patients with acute abdominal pain, foreign body ingestion should be considered. In patients with a history of toothpick ingestion, immediate diagnosis with endoscopic management should be performed [4].

Hendricks A, et al. reports on a Migration of the ingested bone into the thyroid gland.

They report the case of a 71-year-old female patient presenting with an ingested fish bone that migrated into the right thyroid lobe as a rare cause of suppurative thyroiditis with the clinical features of sepsis.

Fish bone migration into the thyroid gland is an extremely rare event, the successful detection and surgical management of which can be achieved through a careful interdisciplinary approach, according to the authors. Hendricks A, et al suppurative thyroiditis caused by ingested fish bone in the thyroid gland: a case report on its diagnostics and surgical therapy. BMC Surg. 2022. PMID: 35272656

Foreign Body-Induced Perforated Appendicitis

Uchihara T, et al report a 63-year-old man who presented with abdominal pain. Workup, including a focused history and imaging, revealed fishbone-induced perforated appendicitis. The patient was managed safely and successfully with laparoscopic removal of the foreign body and appendectomy.

Klingler et al report on a case of an elective appendectomy in a patient with known ingestion of a sharp foreign body. The metal drill bit was ingested unintentionally 3 months before presentation. A laparoscopic exploration was performed, and the foreign body was found to lie in the appendix. A laparoscopic-assisted appendectomy was performed. On pathologic examination the drill bit was embedded in the tip of the appendix with signs of intramucosal acute inflammation [5].

Appendicitis Treatment in the Elderly

Ngoc Nguyen S, et al state that in the elderly, both the diagnosis and treatment of acute appendicitis require particular attention. The diagnosis is often made very late, with 40% to 80% of the cases already having perforated. Reasons for the delayed hospitalization include atypical course, reduction in sensitivity to pain in old age, and an inadequate ability to communicate. According to the authors, the prognosis of uncomplicated appendicitis is just as good in the old as in the young patient, but perforation and concomitant diseases worsen the situation appreciably. Early operation is therefore desirable. The preference of the author is for open, rather than laparoscopic, appendectomy [15].

CONCLUSIONS AND AUTHOR'S COMMENT

This review has attempted to shown that it's not just the GI tract that's involved but IFB perforations can involve organ systems outside the intestine and should be a point to remember in the differential diagnosis of diseases of the omentum liver pericardium: Meckel's diverticulum, hydronephrosis and thyroid involvement as well as foreign body induced perforated appendicitis.

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