

Case Report

Gastric perforation due to fish bone ingestion presenting as gastric outlet obstruction: a case report

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ABSTRACT

Foreign body ingestion is mostly an accidental incident and usually seen in children than in adults. In adults fish bone ingestion is a common occurrence which is generally asymptomatic and passes through gut without any complications. Ingestion of fish bone leading to gut perforations has been reported and includes distal part of the gastrointestinal tract involving ileum, colon and rectum. Gastric perforation is quite rare due to its thick muscular wall. Here we present a case of a 65 year old female who presented to our hospital with complains of pain abdomen, vomiting and epigastric lump. On thorough investigation a perforation in the posterior wall of stomach was found along with a fish bone inside an inflammatory lump near the pylorus in the lesser sac, with features of gastric outlet obstruction. Initial conservative management resolved the inflammatory lump and then diagnostic laparoscopy followed by open surgery was performed to retrieve the fish bone. Both open and laparoscopic methods have been successful in retrieving these foreign bodies. Careful investigations and high level of suspicion is required for proper diagnosis and treatment for this benign condition.

Keywords: Fish bone, Gastric perforation, Gastric outlet obstruction

INTRODUCTION

Foreign body ingestion is not an uncommon occurrence and is usually seen in children, elderly and psychiatric patients. In adults it happens accidentally when they are ingested together with food. The most common foreign bodies accidentally ingested by adults is bones, especially fish bones (9-45%) and less commonly dentures where as in children it is commonly toys and coins.¹ Most of these foreign bodies pass through the gastrointestinal tract uneventfully without any complications.¹ Perforation of gastrointestinal tract due to fish bone is quite rare and is usually seen in the lower gastrointestinal tract including ileum (most common), rectum, anus, and colon. Upper gastrointestinal tract is infrequently involved but perforations have also been reported at esophagus, stomach and duodenum.² Gastric perforation is rarer due to its thick muscular wall. We hereby present an unusual

case of gastric perforation by a fish bone with its surgical management.

CASE REPORT

A 65 yr old female came to our outpatient with complains of fever, pain abdomen, vomiting, and decreased appetite for past 15 days. There was no history of hematemesis or malena. On examination there was a ill defined lump present in the epigastrium, continuous with liver, tender, not moving with respiration, with the rest of the abdomen being insignificant. The bowel sounds were present. Ultrasonogram was performed which showed a loculated collection with internal particulate materials and few air echoes posterior to antropyloic region of the stomach inseparable from adjacent edematous and thickened gastric wall including the first part of the duodenum. CECT scan of the abdomen was done (Figure 1) which revealed

antropyloric wall thickening with perigastric fat stranding and adhesion, intramural foreign body in posterior antral wall (fish bone?) gastric antral luminal narrowing (gastric outlet obstruction?). Gastroduodenoscopy showed a clean based ulcer of size 1.5 cm in the posterior wall causing surrounding mucosal edema and deformity of the pylorus causing gastric outlet obstruction (Figure 2). No foreign body was visible for extraction. The blood count showed total leucocyte count of 12.72, the rest blood parameters were in normal range. After a initial course of conservative management which reduced inflammation and edema of stomach wall, we went in for an diagnostic laparoscopy & excision of the foreign body and got converted to open surgery as the fish bone was deeply seeded in the posterior stomach wall with dense adhesions (Figure 3 and 4) and locating the small bone was difficult. The defect in the posterior wall was primarily closed with polyglactin sutures and a Ryle's tube was left in stomach for decompression. Abdomen was closed over a drain. Post operative period was uneventful and patient was discharged on 6th postoperative day.



Figure 1: Fish bone (arrow) in the gastric wall forming pseudotumor.

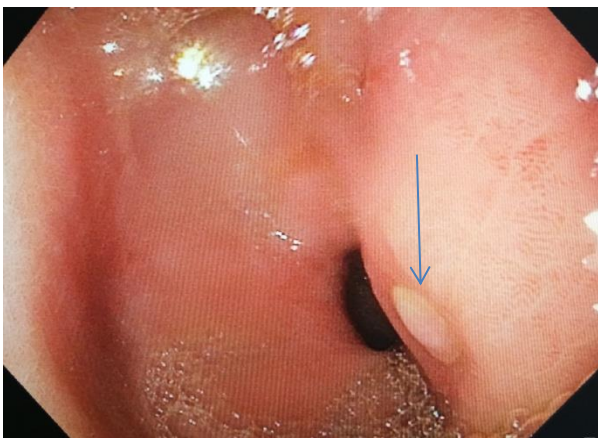


Figure 2: Endoscopic view showing site (arrow) of perforation.

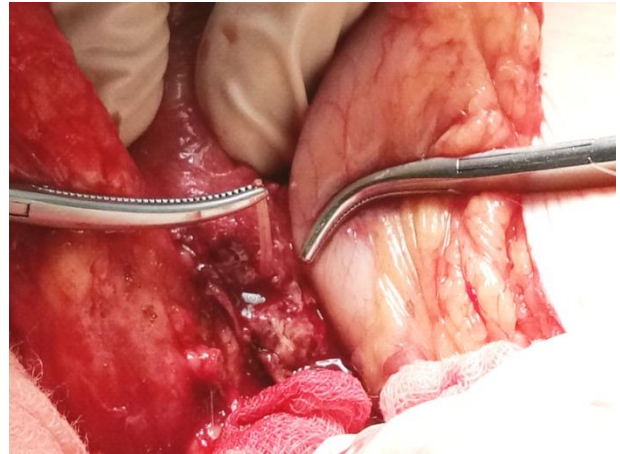


Figure 3: Intra-operative view with retrieval of fish bone.



Figure 4: Retrieved fish bone.

DISCUSSION

Ingestion of foreign bodies is not uncommon. Most of these pass through the gastrointestinal tract without the need for any intervention.¹ A small number of cases require active management because of complications such as perforation, obstruction, and fistula or abscess formation. Less than 1% of all foreign bodies ingested causes perforation of the gastrointestinal tract.^{2,3} Objects such as toothpicks, paperclips, chicken bones etc have been implicated in causing perforation of which fish bone is a rare cause.⁴ Stomach is a rare site of perforation due to its thick muscular wall and is reported infrequently.

Clinical features associated with gastric perforation due to foreign bodies are non specific and varied including abdominal pain, vomiting, fever, melena, intra-abdominal abscess or mass as in our case. Initial diagnosis can be missed and the condition may become chronic and present as pseudotumoral lesion in and around stomach even after a long time of primary event.^{5,6} In the present case fish bone had perforated the posterior wall of stomach and formed an inflammatory lump in lesser sac. Occasionally the foreign body might migrate into

adjacent structures like liver, spleen and form an abscess.⁷ Clinical diagnosis is often difficult as patient is unaware of ingesting any foreign body and the incident normally occurs during food intake. For diagnosis x-rays are rarely helpful except for objects which are radioopaque such as metals or chicken bones. Free intraperitoneal gas is seldom seen as the process is a slow one and normally sealed off by omentum, adjacent structures, fibrin.² Ultrasonogram may reveal

intraperitoneal collection or a mass lesion. CT scan is a more sensitive investigation in identifying radiolucent foreign bodies such as fish bone, toothpicks etc and is the preferred investigation.⁸ Gastroscopy can be both diagnostic and therapeutic if done during the initial period of perforation with the foreign body visible intraluminally. Endoscopic ultrasound also helps in delineating the mass or foreign body mostly in submucosal or intramural location.⁹

Table 1: Gastric perforation by fish bone and their surgical management.

Author	Year	Presentation/clinical diagnosis	Procedure
Goh et al ¹²	2004	Locally-advanced pancreatic carcinoma	subtotal pancreatectomy, partial gastrectomy, splenectomy and segmental colectomy
Bajwa et al ¹³	2007	Gastric submucosal tumor	subtotal gastrectomy
Al-Deeb et al ⁵	2009	Pseudotumoral gastric lesion	subtotal gastrectomy
Kim et al ¹⁰	2014	Gastric submucosal tumor	Laparoscopic removal

Surgical intervention becomes necessary when the foreign body becomes extraluminal. Preoperative diagnosis is the key to procedure performed. Exploratory laparotomy followed by retrieval of the fish bones with drainage of the abscess cavity is required. In case of pseudotumoral lesions where diagnosis was inconclusive and malignancy was suspected, various procedures have been done including subtotal gastrectomy, partial pancreatectomy, and wedge resections of colon (Table 1). Laparoscopy has also been successful in a similar case of gastric perforation due to fish bone by Kim et al and due to chicken bone by Ricci et al.^{10,11} In our case radiologist was able to give a definitive diagnosis of fish bone causing gastric perforation, so a more conservative surgical procedure was possible which led to less morbidity of the patient.

CONCLUSION

Gastric perforation by fish bone ingestion is a rare presentation. Clinical diagnosis is difficult and requires high level of suspicion. CT scan is a sensitive investigation and aids in definitive preoperative diagnosis leading to a less morbid surgical treatment for the patient. Laparoscopy is feasible option for extraction of such foreign bodies.

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