Omental Inflammatory Mass Secondary to a Migrating Fish Bone: A Case Report

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Most ingested fish bones pass through the gastrointestinal tract without major complications. Migration of an ingested sharp fish bone from the site of entry into the surrounding soft tissue is a rare complication. Inflammatory diseases of the omentum are usually caused by intra-abdominal conditions, such as colon diverticulitis, omental torsion and infarction, and bowel perforation. We report a 63-year-old woman who suffered from intermittent dull abdominal pain over the left lower quadrant for about 2 months. Abdominal computed tomography revealed an omental inflammatory mass with a foreign body. An omental inflammatory mass with abscess was noted during laparotomy, and was excised totally. No gastrointestinal tract perforation was noted. Pathology examination confirmed a fish bone in the omental inflammatory mass. The post-operative course was uneventful. The patient was discharged on the 6th day after the operation. [Dear Author: Please briefly add patient outcome.]

Key words: omentum, inflammatory mass, migrating, fish bone

Introduction

Inflammatory diseases of the omentum are usually caused by intra-abdominal conditions, including omental disease (infarction, adhesions, cysts, and torsion), gastrointestinal (GI) tract inflammatory disease, GI tract perforation, colon diverticulitis with / without perforation, previous abdominal surgery, and pelvic inflammatory disease. Perforation of the GI tract caused by an ingested fish bone is not common, because most fish bones pass uneventfully through the GI tract without complications(1). Herein, we report a rare case of an omental inflammatory mass secondary to a migrating fish bone without any complication in the GI tract.

Case Report

A 63-year-old woman presented to our emergency department with intermittent dull left lower quadrant abdominal pain with chills for two months. She had been well being before and denied any previous operations. She had a history of diabetes mellitus and hypertension. She had no recall of fish bone ingestion in the past 2 months. There was no nausea, vomiting, anorexia, constipation, or diarrhea. On clinical examination in the emergency department, she was mildly febrile with a temperature of 37.6°C, and had a heart rate of 77 beats per minute with a blood pressure of 133/81 mmHg. Physical examination revealed severe tenderness, rebound pain and muscle...
guarding in the left lower quadrant of the abdomen, and decreased bowel sounds. A tender palpable mass of about 8 cm was noted at the left lower quadrant of the abdomen. Chest radiography did not reveal any active lung lesion or pneumoperitoneum. Abdominal radiography demonstrated nonspecific gas-distended bowel loops. Laboratory examination revealed an elevated white blood cell count of 12400/µL, a hemoglobin level of 13 g/dl, and a C-reactive protein level of 201.1 mg/l. Diverticulitis of the sigmoid colon was suspected. An abdominal computed tomography (CT) scan revealed an infiltrative mass (5.6 cm) in the left lower quadrant of the abdomen surrounding a linear high density. An inflammatory mass, probably from a fish bone-induced perforation of jejunum, was suspected. (Fig. 1). The inflammatory mass was just beneath the anterior abdominal wall and adhered to the

Fig. 1 An abdominal computed tomography scan shows an inflammatory process with an immature abscess (Arrowhead) in the left lower quadrant of the abdomen, probably due to an animal bone (Arrow)
abdominal wall. There were no penumoperitoneum and ascites on the abdominal CT scan. Surgery was performed. During laparotomy, a well-circumscribed omental inflammatory mass, about 9 cm × 7 cm, was noted over the left lower quadrant of the abdomen. The omental mass did not adhere to the bowel wall or any other structures. There was no ascites or pus in the abdominal cavity. The stomach, duodenum, small intestine, colon, and rectum were examined carefully. No bowel perforation was noted. Therefore, we excised the omental inflammatory mass. A 2.5-cm-long sharp, linear fish bone was noted in the excised omental mass, with small amount of pus. The postoperative course was uneventful. Oral intake began on the 3rd day after surgery. The patient was discharged on the 6th day after the operation. The patient has been followed up for 5 months and has recovered well. On gross pathological examination, the excised specimen showed acute suppurative inflammation of the fat tissue, and measured 9.4 cm × 6.8 cm. A histological examination (Fig. 2) revealed chronic

![A](image1.png)  
**A**  The omentum tissue shows acute suppurative inflammation with peripheral fibrosis. (H&E, 40x)  

![B](image2.png)  
**B**  Acute and chronic inflammatory cells infiltrate with granulation tissue between the adipocytes. (H&E, 200x)
and acute inflammatory cell infiltration, granulation tissue, fibrosis, necrosis, bacterial colonies, and aggregation of degenerative leukocytes. The culture of the abscess revealed Klebsiella pneumoniae. Therefore, a diagnosis of omental inflammatory mass secondary to a migrating fish bone was made.

**Discussion**

Omental inflammatory diseases frequently occur secondary to omental infarction, noepalms, cysts, torsion, and adhesions. Other intra-abdominal causes include conditons with a GI tract origin (enteritis, colitis, perforation, and colon diverticulitis), pelvic inflammatory disease, and previous abdominal surgery. Ligation of the omentum from a previous herniorrhaphy or abdominal surgery has also been reported as a predisposing factor for an omentum abscess(2). Linen sutures, fragments of gauze, and a foreign body(3-5) have all been reported in omental abscesses. Primary omental abscesses are rare. Wang et al(6) reported a case of primary omental abscess with abdominal wall involvement successfully treated by resection of the abscess. Otagiri et al(7) reported on the difficulty of accurately diagnosing this disease preoperatively. In their literature review(6-18), they found that only 1 of 13 cases of primary omental abscess of unknown etiology had been diagnosed as an omental abscess preoperatively. An omentectomy was performed in all 13 patients, and an additional bowel resection was done in two cases.

Accidental ingestion of foreign bodies such as fish and chicken bones is common. However, most digested foreign bodies pass through the GI tract within a week, and seldom cause major complications. Perforation of the GI tract occurs in less than 1% of patients(1,19-22). Commonly ingested foreign bodies include fish bones, chicken bones, dentures, and toothpicks. Perforations from these foreign bodies can occur throughout the GI tract, but they tend to develop at sites of acute angulation such as the ileocecum or rectosigmoid(1). Goh et al reported that the most common site of perforation was the terminal ileum(1). Other rare sites of perforation have included a hernia sac, Meckel’s diverticulum, the appendix(23), esophagus(24), and pharynx(25). Ingested foreign bodies can migrate from their entry point in the GI tract into adjacent tissues. Chung et al(14) reported four unusual cases of ingested fish bones that migrated out of the upper digestive tract to the neck causing retropharyngeal abscesses. Joshi et al(26) reported a rare case in a 45-year-old woman who had swallowed a sharp pointed metallic foreign body while eating meat. The foreign body had migrated from the cricopharynx through the parapharyngeal space and penetrated the internal jugular vein over a period of 10 days, presenting as a tender neck swelling. Santo et al(27) reported a liver abscess resulting from perforation and intra-hepatic migration of a bone.

Clinical presentations of GI tract perforation caused by digested foreign bodies vary from case to case, and can be acute, subtle, or chronic. The clinical presentations include acute peritonitis, abdominal wall tumor or abscess(28), intraabdominal mass and abscess formation(21,23,29). Henderson(30) and Goh(1) reported that chronic perforation and abscess formation seemed to occur more commonly with perforation of the duodenum, stomach, and colon compared with the jejunum and ileum. However, there have been totally asymptomatic cases(1,31,32). Moreover, Chung(33) reported a patient with subtle esophageal perforation caused by a chicken bone, who was successfully treated with endoscopic dislodgement followed by conservative treatment with intravenous antibiotics. Because of the variety of clinical manifestations, the correct preoperative diagnosis is seldom made. Goh(1) reported that a correct preoperative diagnosis was made in only
10 (23%) of 44 patients. Furthermore, only few patients can recall foreign body ingestion. In Goh’s(1) report, only one (2%) patient provided a definitive history of foreign body ingestion. Our patient also could not recall any fish bone ingestion.

The diagnosis of radiolucent nonmetallic foreign bodies, for example fish bones and chicken bones, can be difficult. Plain radiography is usually unreliable in the diagnosis of GI tract perforation caused by nonmetallic foreign bodies. Ngan(36) reported that plain radiography had a sensitivity of 32% in their prospective study of 358 patients. However, Goh(1) reported that only one (5.6%) of the reported nonmetallic foreign bodies was seen on plain radiography and reaffirmed its poor utility for diagnosis of this condition. CT scan is superior to plain radiography in the diagnosis of GI tract perforation caused by a foreign body. Coulier et al(35) reported the use of CT scan to diagnose 7 patients with GI tract caused by perforation of a nonmetallic foreign body, including 3 patients with perforation by a fish bone. Goh et al(37) reported that the sensitivity of a CT scan in the detection of intraabdominal fish bones was 71.4% (5/7) in initial reports. They also concluded that the clinical presentation and radiography were unreliable in the preoperative diagnosis of GI tract perforation caused by a fish bone. However, this limitation can be overcome with the use of CT, which is accurate in showing the offending fish bone. A high index of suspicion is needed to obtain the correct diagnosis(37). Moreover, a CT scan can also show the depth of penetration, location of both ends of the foreign bodies, the region of perforation as a thickened segment of bowel, localized pneumoperitoneum, regional mesentery infiltration, and associated intestinal obstruction. In our case, the fish bone was not shown on plain radiography, but was suggested on the abdominal CT scan. In addition, abdominal CT also revealed an inflammatory mass with an immature abscess in the left lower quadrant of the abdomen. However, there was no evidence of a thickened intestinal segment, localized pneumoperitoneum, or mesentery infiltration on CT. Ultrasonography is also a useful diagnostic tool in the detection of ingested foreign bodies. Rioux and Langis(38) reported ultrasonographic detection of 4 cases of surgically (2 cases) and endoscopically (2 cases) -proven toothpick-related gastrointestinal perforation. The sonographic appearance of the toothpick was a linear, hyperechoic (3 cases) or hypoechoic (1 case) image of variable length (mean: 2.5 cm) with inconsistent posterior shadowing in the longitudinal axis. In the transverse section, a hyperechoic dot (4 cases) with clear, thin, sharp, posterior shadowing (3 cases) was seen. Coulier(39) reported six cases of complicated foreign bodies very successfully and specifically diagnosed by sonography at six different sites in the gastrointestinal tract. They recommended the systematic ultrasonographic investigation of foreign bodies in close relation with the gastrointestinal tract in all atypical inflammatory processes or the use of ultrasonography as a complement to CT.

We examined the whole GI tract during laparotomy. No bowel perforation or adhesions were noted. Because the fish bone was sharp and linear, it could have penetrated the small intestinal wall and migrated into the omentum. Then, the small intestinal wall could have quickly sealed off, with later formation of the omental mass. Therefore, we excised the omental mass totally. The postoperative recovery was uneventful. Pathology confirmed the diagnosis of omental inflammatory mass secondary to a migrating fish bone. To our knowledge, ours is the first reported case of omental inflammatory mass secondary to a migrating fish bone without an evident GI tract perforation.

Treatment of GI tract perforation caused by ingested foreign bodies includes conservative
treatment and surgical intervention, depending on the etiology, size of the perforation, and severity of symptoms. When the perforation of the GI tract is subtle and there is no peritonitis, conservative treatment with intravenous antibiotics and no oral intake might be considered. In recent years, endoscopic clips have been used to treat small perforations of the stomach after foreign body removal. The reported indications for surgical intervention are as follows: (1) bowel perforation, (2) peritonitis due to bowel perforation, (3) migration to other organs adjacent to the perforation site, (4) bleeding or severe inflammation in the abdominal cavity, (5) penetration of vessels, and (6) abscess formation. Surgery usually involves resection of the perforated bowel in most cases with severe peritonitis.

In conclusion, ingestion of a foreign body is a common entity. However, perforation of the GI tract by fish bones is not common. Clinical symptoms vary from severe peritonitis to subtle symptoms. Most patients cannot recall foreign body ingestion, so the clinical presentation and radiography are unreliable in the preoperative diagnosis of fish bone perforation of the GI tract. When this situation is suspected, abdominal CT plays a potential role in detecting the nonmetallic fish bone and associated bowel or mesentery abnormalities. A systematic ultrasonographic investigation can be a complement to CT and a convenient follow-up tool.

References

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遊移的魚骨引起的大網膜發炎性腫塊：病例報告

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大多數吞入的魚骨會經由腸胃道順利排出，而無嚴重的併發症。大網膜的發炎性疾病通常是由腹腔內的疾病所引起的，例如大腸憩室炎、大網膜扭轉和梗塞、及腸胃道穿孔。我們報告一位63歲女性因左下腹疼痛兩個月而至本院就醫。腹部電腦斷層掃描顯示左下腹有一個大網膜發炎性腫塊，裡面有一高亮度異物。術中發現一個大網膜發炎性腫塊，並將其整個完全切除，而且無任何腸胃道穿孔發生。術後病理報告證實有一魚骨在大網膜內。

關鍵詞：大網膜，發炎性腫塊，遊移的，魚骨