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Small Intestinal Fish Bone Perforation

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An 85-year-old woman with type 2 diabetes mellitus presented to the hospital with abdominal distention and pain in the left lower quadrant since the previous night. She had a history of surgery for transverse colon cancer and hospitalization for postoperative adhesive intestinal obstruction. Physical examination revealed a body temperature of 37.5°C and tenderness of the left lower quadrant of the abdomen (without rebound tenderness). Laboratory tests revealed the following: white blood cell count, 9.50×10^9/L ($3.17–8.40\times10^9$/L); neutrophil count, 84.2%, and C-reactive protein level, 2.0 mg/L (reference <3.0 mg/L). Plain abdominal computed tomography (CT) revealed that the small intestine in the lower left abdomen was surrounded by fat stranding with intraperitoneal free air; a high-density body, indicating a fish bone (Fig. 1a, b), was found penetrating the wall.

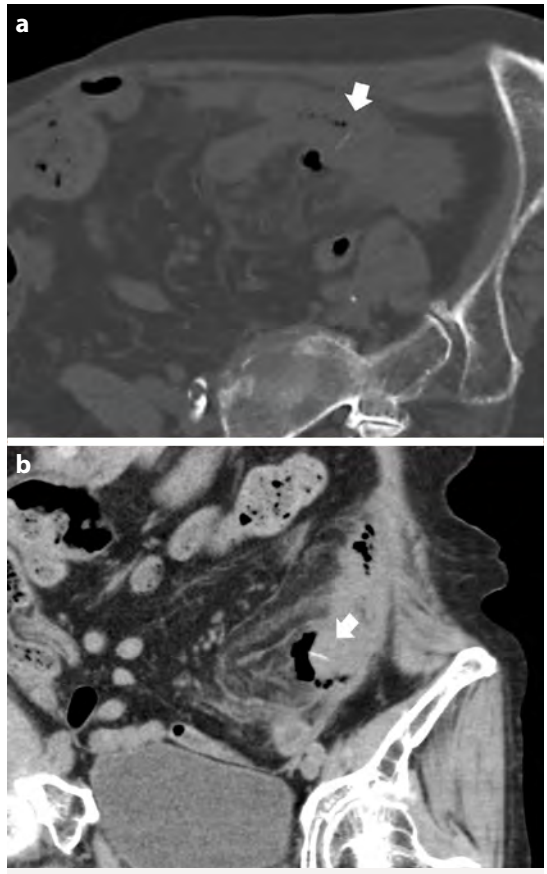

Figure 1. Plain abdominal computed tomography reveals a linear and high-density object that penetrates the edematous wall of the small intestine with fat stranding and intraperitoneal free air (white arrows). **(a)** Axial view, bone window; **(b)** coronal view, soft tissue window.

The patient was diagnosed with small intestinal perforation caused by the fish bone. Emergency laparotomy revealed an extensively adherent and edematous small intestine. The small intestinal wall was thickened with a mesenteric abscess, i.e., the suspected culprit lesion. However, the perforation site was unidentified. Partial small intestinal resection was performed, and a fish bone (approximately 2.5 cm long) was found in the resected intestine (Fig. 2). The patient's postoperative course was uneventful.

Approximately 75% of swallowed foreign bodies pass spontaneously and are expelled via stools; less than 1% perforate the gastrointestinal tract.[1] Perforation due to foreign bodies is commonly caused by physiological narrowing or angulation of the intestine, such as at the ileocecal and rectosigmoid junctions.[1] However, anatomical changes in the intestine owing to adhesive alterations from previous intraperitoneal surgeries may affect the passage of ingested foreign bodies.

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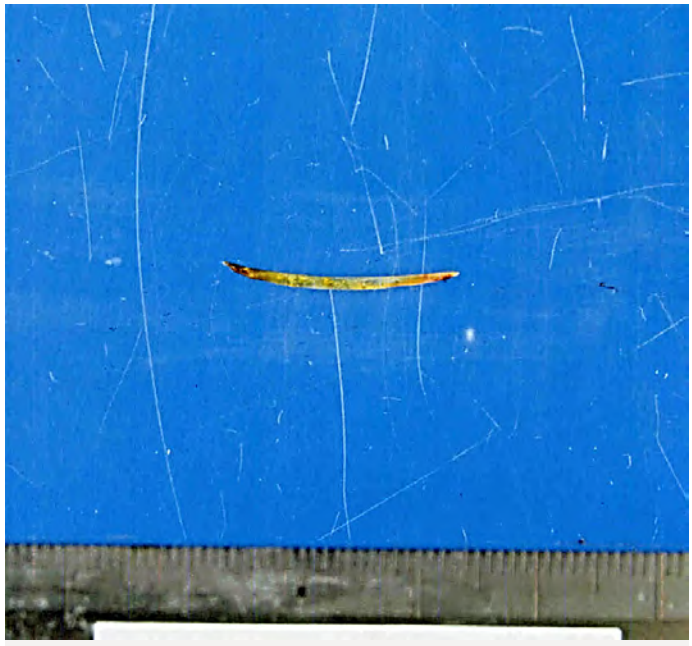

Figure 2. A fish bone, approximately 2.5 cm in length, is noted in the resected small intestine.

CT is considered the most sensitive and accurate method for visualizing fish bones in the gastrointestinal tract. However, the inflammatory changes caused by intestinal fish bone perforation can mimic gastrointestinal and submucosal tumors, appendicitis, and Crohn's disease.[2] Moreover, high-density fish bones may be invisible on contrast-enhanced CT due to contrast effects.

Patients are occasionally unaware of the accidental ingestion of fish bones. Moreover, old age, mental retardation, and fast eating may be risk factors for fish bone ingestion.[2,3] Therefore, when interpreting imaging findings of patients with unexplained abdominal pain, attention should always be paid to the presence of foreign bodies. Various approaches, such as use of a thin slice thickness and multiplanar reformation on CT, can help detect small fish bones (2) and prevent the overlooking of fish bone perforation.

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