Intestinal perforation due to fish bone diagnosed preoperatively by computed tomography

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ABSTRACT
Abstract is not required for Clinical Images
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CASE REPORT

A 73-year-old female was presented to emergency department with a one-day history of increasing lower abdominal pain. The patient had attended a wedding party of her grandson and ate baked red snapper. Her past medical history was unremarkable and she was taking medication for hypertension. Her vital signs included blood pressure 119/66 mmHg, pulse rate 80 beats/min, and body temperature 36.2°C. On examination, the patient had a slightly distended abdomen with significant right iliac fossa guarding and tenderness. Her white cell count and C-reactive protein levels were 11900/mm³ and 1.24 mg/dL, respectively, indicating systemic inflammation. Abdominal computed tomography demonstrated pneumoperitoneum and fluid within the abdominal cavity, as well as dilated intestine, suggesting diffuse peritonitis due to alimentary tract perforation (Figures 1 and 2). Under general anesthesia, the patient underwent diagnostic/therapeutic laparoscopy, which showed acutely inflamed ileum and purulent ascites. A foreign body, assumed to be a fish bone, was observed piercing through the small bowel wall at the ileum. As the site of perforation was not clearly determined via laparoscope, a lower median laparotomy was performed. Lavage of the abdominal cavity enabled us to detect a 2-mm ileal perforation by foreign body by confirming bubble from the perforation. Diffuse purulent peritonitis was evident in an area with adhesions. The foreign body was removed, primary suture of the intestinal perforation was performed, and the abdominal cavity was drained. Intravenous antibiotics were administered. The patient was discharged on day-5 after admission without complications.

Figure 1: Plain abdominal computed tomography showing thickened intestinal segment, localized pneumoperitoneum. Linear density crossing the intestinal wall was noted (black arrow).
DISCUSSION

Ingestion of foreign bodies is a common clinical problem encountered in emergency departments. Meat boluses are the most common foreign bodies ingested in Western countries, while fish bones are the most common in Oriental countries where unfilleted fish is a culinary delicacy [1, 2]. Although most fish bones pass through the gastrointestinal tract without complications, patients who accidentally ingest a fish bone are occasionally asymptomatic after ingestion initially, but may at a later date present remotely with serious complications such as perforation, obstruction, and abscess formation in the gastrointestinal tract. In fact, fish bones are the most common objects ingested and the most common foreign body to perforate the gastrointestinal tract [3]. Fish bones can perforate all segments of the alimentary tract. However, perforation tends to occur in areas of acute angulation such as the rectosigmoid and ileocecal junctions [4]. Early laparoscopic or surgical removal of the fish bone and abdominal lavage is recommended [5]. Eventually, as with our patient, determining the perforation site on laparotomy is difficult. Careful observation and administration of antibiotics are absolutely required for the treatment of intestinal perforation by fish bone.

Diagnosis of foreign body perforation of the gastrointestinal tract can be challenging and is rarely correctly diagnosed preoperatively. Radiography is unreliable in the diagnosis of fish bone perforation. Computed tomography (CT) scan has been helpful in the detection of nonmetallic foreign body perforation. Fish bone perforation typically appears as a linear calcified lesion surrounded by an inflamed area on CT scan [6]. Evidence of pneumoperitoneum is only seen in approximately 30% of patients with intestinal perforation caused by fish bone ingestion [1]. Computed tomography scan sensitivity for detection of fish bone peritonitis is known to be relatively high (71–100%). Since the main reason for missed diagnosis is the observer’s lack of awareness, a high degree of clinical suspicion should be maintained in order to make a correct diagnosis.

CONCLUSION

We described a case of acute peritonitis after perforation of the ileum by a fish bone that was detected by computed tomography. We emphasize the value of CT in diagnosing fish bone peritonitis; familiarity with its appearance on CT scan can help to detect fish bone perforation along with any associated complications and help guide further management.

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