A rare complication of the duodenal diverticulum

Figure 1 Computed tomography scan of the abdomen with contrast (coronal section). A diverticulum in the second portion of the duodenum (arrow) and retroperitoneal air (asterisk) are shown.

Figure 2 Computed tomography scan of the abdomen with contrast (axial section). The area with retroperitoneal air (asterisk) is marked.

INTRODUCTION

An 80-year-old woman presented to the emergency department with severe right-sided abdominal pain that had started after her last meal. Physical examination revealed fever (38.6°C) and rebound tenderness in the right upper quadrant of the abdomen. The laboratory studies showed a leucocyte count of $11.3 \times 10^9/L$ (normal, $3.7\text{--}8.0 \times 10^9/L$) and a C-reactive protein level of 2.34 mg/dL (normal, <0.03 mg/dL). There were no other significant findings. A CT scan of the abdomen with contrast revealed retroperitoneal air around a duodenal diverticulum (figures 1 and 2).

QUESTION

What is the most likely diagnosis and the cause underlying the condition?

INSIDE VIEW

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ANSWER

A duodenal perforation was suspected. An emergency exploratory laparotomy performed using the Kocher maneuver did not reveal the duodenal diverticulum because of intense inflammation around the second portion of the duodenum. We performed intraoperative endoscopy, and a fish bone penetrating the duodenal diverticulum was observed and removed by intraoperative endoscopy (figures 3 and 4). Two drains were placed around the penetrated diverticulum. Postoperatively, nutritional support was provided enterally via jejunostomy. After the operation, it became clear that she had eaten a boiled idiot fish for dinner 2 days earlier. The

Figure 3 Intraoperative endoscopic view of the second portion of the duodenum.

postoperative course was uneventful except for a urinary tract infection. She was discharged on postoperative day 35 after aggressive physical rehabilitation due to her frailty on admission.

Duodenal diverticulum is a common asymptomatic anomaly. Perforated duodenal diverticulum is a rare complication.¹ A digested fish bone is commonly lodged in the tonsil (48.5%), tongue base (25.0%), and oropharynx (14.4%); however, it can also be located in the gastrointestinal tract.² In this patient, the causative fish bone could not be detected by laparotomy alone; thus, intraoperative endoscopy was required. The remaining fish bone might have caused serious complications, such as injury of adjacent organs or abscess formation.^{3,4} This case is reminiscent of rare complications of common anomalies and suggests that intraoperative endoscopy may aid in detecting the cause of duodenal perforation when it is unclear.

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Figure 4 The fish bone that was removed.

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