

## Letters to the Editor

### Clinical challenge: diverticulitis of third and fourth portion of the duodenum with perforation

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*Key words: Perforation. Diverticulitis. Duodenum.*

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Dear Editor,

Duodenal diverticulum is not rare, and it represents the second most frequent place in the digestive tract. Localization of diverticula in the third or fourth portions of the duodenum is rare and the symptoms are often non-specific. Computed tomography may be helpful to make a diagnosis. We present a rare case of diverticulitis of third and fourth portion of the duodenum with perforation and it was treated successfully by duodenal-jejunostomy and abscess drainage.

#### Case report

A 77-year-old man presented with vomiting and abdominal pain for 1 day prior to the emergency department. On arrival, his vital signs showed temperature of 37.8 °C, heart rate of 86/min, and blood pressure of 110/68 mmHg. Physical examination revealed tender in the epigastric area with signs of peritoneal irritation. Blood tests were: white blood cells 23,300/mm<sup>3</sup>, hemoglobin, 13.9 g/dL, and platelets, 230,000/mm<sup>3</sup>. The differential count of white blood cell was: neutrophils, 96%; monocytes, 3%; and lymphocytes, 1%. C-reactive protein (CRP) was 32.6 ng/dL. The liver and renal function tests and amylase concentrations were normal. Abdominal X-ray showed no intraperitoneal free air. Computed tomography (CT) of abdomen showed extraluminal retroperitoneal air around 3<sup>rd</sup> and 4<sup>th</sup> portion of the duodenum with fatty stranding. Perforated diverticulitis of the duodenum and a retroperitoneal abscess were considered.

The emergency laparotomy was performed. After mobilization (Kocher maneuver), pus was found around retroperitoneal duodenum. Further examination showed a perforated diverticulum in the 3<sup>rd</sup> and 4<sup>th</sup> portion of the duodenum. We performed the procedure of duodeno-jejunostomy bypass. The abscess cavity was irrigated and multiple drainages were placed. The post-operative course was uneventful. The patient was discharged without complication.

#### Discussion

We report the patient with perforated diverticulitis in the third and fourth portion of the duodenum. It is uncommon and fewer cases have been reported in the literature. The prevalence of duodenal diverticula is higher in the people with over than 50-year-old year (1). Diverticulum in duodenum is the second common site to the colon in the alimentary tract (2). The typical location is in the second portion of the duodenum (3). Most patients with duodenal diverticula are asymptomatic and they are discovered incidental during upper gastrointestinal image studies. There are only 5% of patients with symptoms resulting from the hemorrhage, inflammation, or perforation (4). Perforation is rare, but the most serious complication. It may be caused by the diverticulitis, enterolithiasis, ulceration, foreign body or trauma (5). Only 1-2% of patients with duodenal diverticula require surgical treatment for complications (4).

Abdominal CT is the useful diagnostic tool for duodenal diverticula because it is powerful to demonstrate adjacent anatomy and helpful to find complications such as perforation (3). CT findings may show the mesenteric fat stranding, thickened bowel wall, and an extraluminal, retroperitoneal collection of air or fluid (6). Treatment of symptomatic duodenal diverticula depends on its type and location. The standard treatment for perforated duodenal diverticula is surgical intervention. But the detailed recommendations or procedure about surgical techniques are lack. Resection of the duodenal diverticula with one or two-layer closure is the choice to surgical management (7). Besides, it has been reported that duodenal diverticula treated by intra-abdominal drainage and feeding jejunostomy successfully (8). In the literature, only one case of segmental resection for the perforated diver-

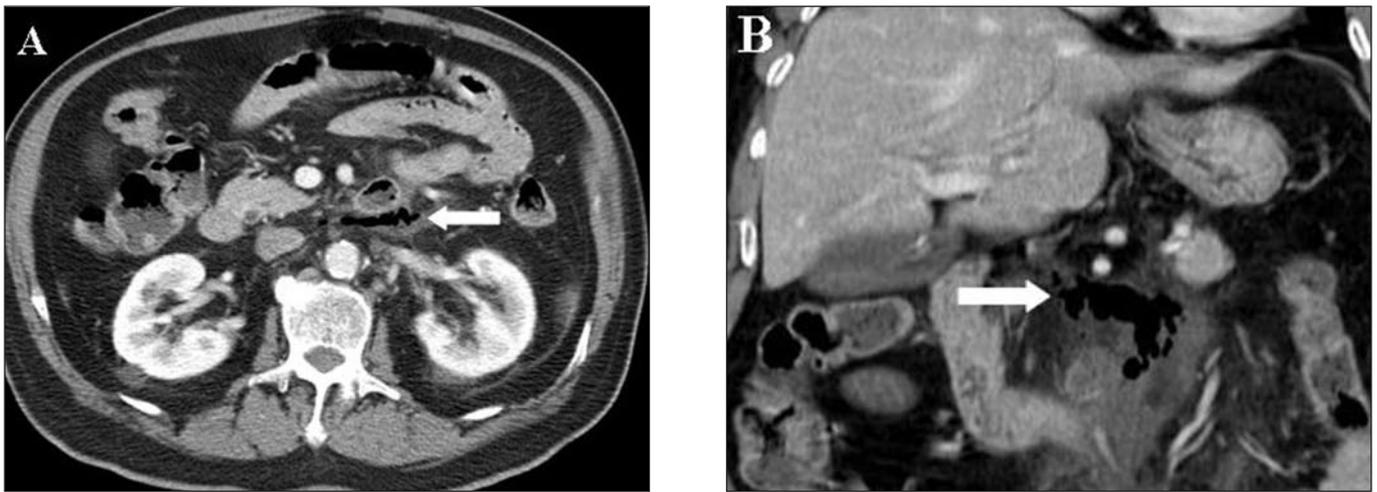


Fig. 1. Computed tomography of abdomen showed extra-luminal retroperitoneal air (white arrow) around the duodenal segment with fat stranding. A. Axial view. B. Coronal view.

ticulitis in the 3<sup>rd</sup> and 4<sup>th</sup> portion of the duodenum is reported (4). We describe here a duodenal-jejunostomy and abscess drainage methods in such patient and it has satisfactory results.

It is usually difficult to make a diagnosis and manage the complications of duodenal diverticula. Perforation is rare in the third and fourth portion of the duodenum and it requires immediate surgical intervention. Duodenal-jejunostomy and abscess drainage may be an useful surgical approach to the elderly patients.

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