

CASE REPORT

Acute pancreatitis due to diverticular compression of the gland

Pancreatitis aguda por compresión diverticular de la glándula

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Abstract

Diverticula are commonly located in the colon and are less frequent in other parts of the gastrointestinal tract. Diverticula of the duodenum are the most common in the small intestine and are usually asymptomatic. In rare cases they can lead to abdominal pain, bleeding and obstruction of the bowel or biliary system. In exceedingly rare cases they may be the cause for acute pancreatitis, usually when they are located near the major papilla. We present a rare case where the pancreas was compressed by a large 38 mm by 49.7 mm diverticulum of the horizontal part of the duodenum, and was managed conservatively.

Keywords: pancreas, duodenal diverticulum, acute pancreatitis, diet.

Resumen

Los divertículos suelen localizarse en el colon y son menos frecuentes en otras partes del tracto gastrointestinal. Los divertículos del duodeno son los más frecuentes en el intestino delgado y suelen ser asintomáticos. En raras ocasiones pueden provocar dolor abdominal, hemorragia y obstrucción intestinal o del sistema biliar. En casos extremadamente raros pueden ser la causa de pancreatitis aguda, normalmente cuando se localizan cerca de la papila mayor. Presentamos un caso poco frecuente en el que el páncreas estaba comprimido por un gran divertículo de 38 mm por 49,7 mm de la parte horizontal del duodeno, y fue tratado de forma conservadora.

Palabras clave: páncreas, divertículo duodenal, pancreatitis aguda, dieta.

Introduction

Diverticula are commonly located in the colon and are less frequent in other parts of the gastrointestinal tract^{1,2}. Diverticula of the duodenum are the most common in the small intestine. They are usually asymptomatic except for cases of pain, bleeding and obstruction of the bowel or biliary system¹. Pancreatitis due to duodenal diverticulum are rare and usually are caused by juxtapapillary diverticula³. We report a rare case of a large diverticula located in the horizontal portion of duodenum that caused acute pancreatitis due to its compression of the pancreas.

Case summary

A 57-year-old male patient was admitted with complaints of pain in the upper abdomen with irradiation to the back, nausea, and vomiting. According to the patient, he considers himself ill for about a year, when he began to notice epigastric pain and nausea after eating. During the last year he lost 5 kg. At the time of examination, he had pain in the epigastric region. Laboratory values were normal, with the exception of an increased amylase (309 U/L, normal value 28-100 U/L). Ultrasound of the abdominal cavity revealed an increase in the size

Figure 1: Upper gastrointestinal endoscopy. DD – duodenal diverticulum, DL – duodenal lumen.

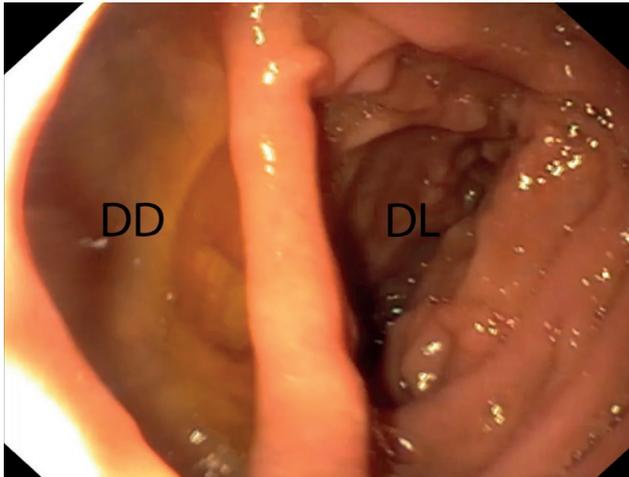


Figure 2: Abdominal X-ray with oral contrasting.

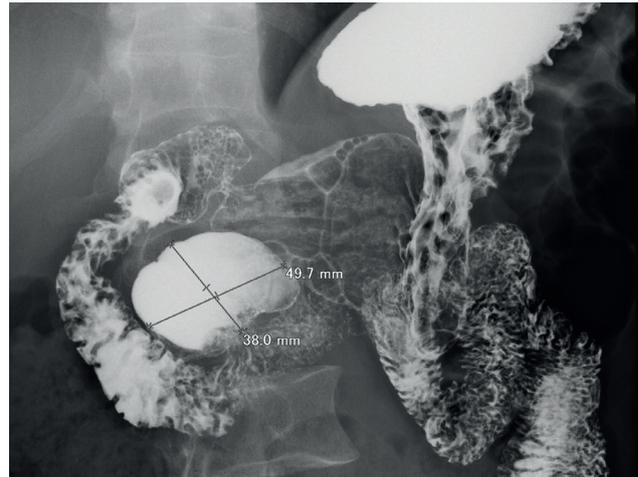
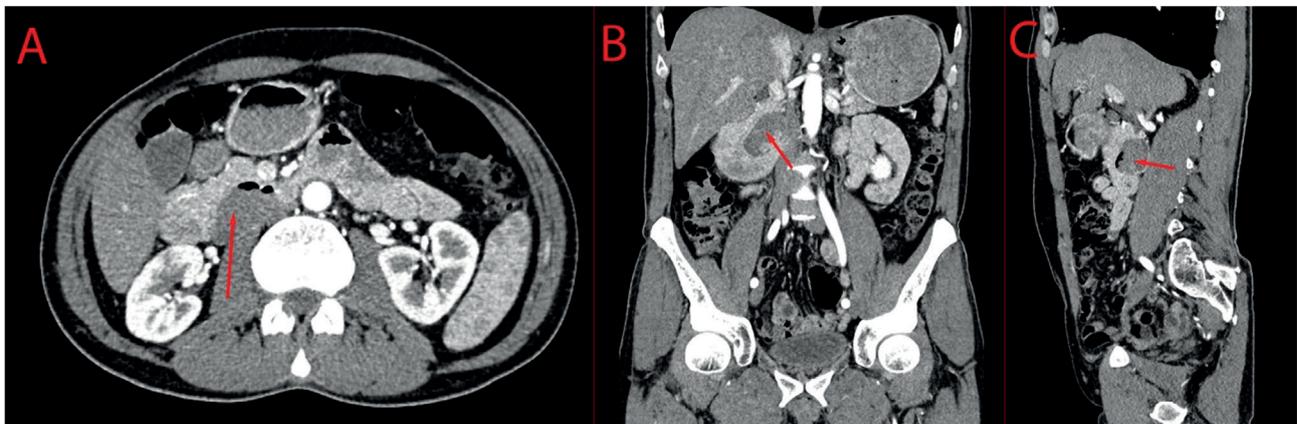


Figure 3: Abdominal CT showing large diverticulum that compresses the pancreas (arrow indicates the duodenal diverticulum). A – Axial plane, B – coronal plane, C – sagittal plane.



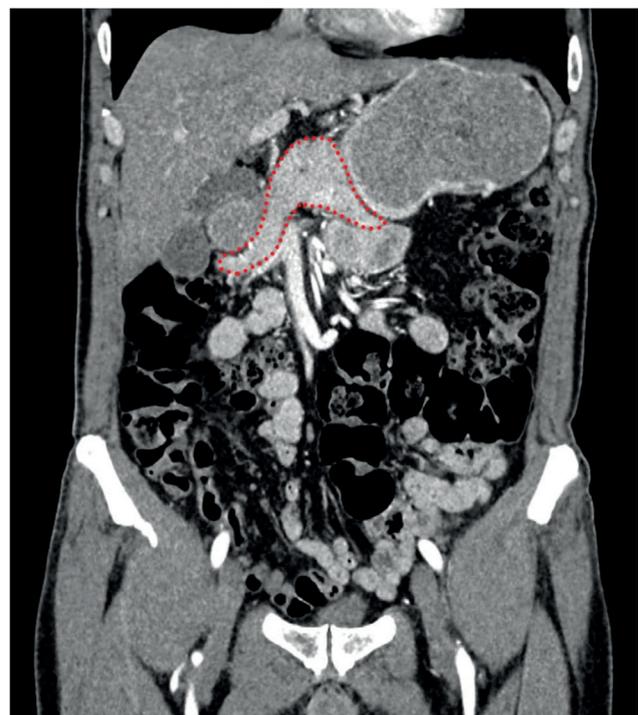
of the pancreas with diffuse changes in its structure. For the purpose of differential diagnosis, an upper gastrointestinal endoscopy was performed, which revealed a diverticulum of the horizontal duodenal part without signs diverticulitis (**Figure 1**).

Contrast abdominal X-ray (**Figure 2**) and abdominal CT scan (**Figures 3a, 3b, 3c**) revealed a 38 mm by 49.7 mm diverticulum, which exerted pressure on the pancreas causing an inverted V shape lie (**Figure 4**). Against the background of conservative therapy, withhold of food and fluid there was an improvement in the condition. Amylase level decreased to 107 U/L when re-examined after two days. The patient was discharged 9 days after hospitalization with normal laboratory values and improved overall condition. One year follow up revealed no exacerbation of his condition on diet of smaller but more frequent meals with high amounts of fluid.

Discussion

Duodenal diverticula are encountered in up to 23% of cases, depending on the mode of diagnosis. They

Figure 4: Abdominal CT demonstrating an inverted V shape of the pancreas (the pancreas is marked in red).



can be congenital or acquired, while the last are more frequent. The acquired type represents a protrusion of the mucosa, muscularis mucosa, or submucosa through a local weakness in the duodenal wall. They are symptomatic in approximately 5-10% of cases. In the majority of cases duodenal diverticula are small and are located in the periampullary region or in the medial aspect of the second and third portions of the duodenum. They can mimic a variety of conditions of the duodenum and pancreas including pancreatic pseudocyst or abscess^{3,4}.

Giant or large diverticula are rare and there are only a few cases reported in the literature with measurements up to 11 cm, typically in the second or third part of the duodenum^{1,5,6}. However, there is no measurement scale when a diverticulum is considered to be giant. None of these cases caused symptoms related to pancreatic diseases. Periampullary diverticula are traditionally associated with diseases of the biliary or pancreatic tree. Nevertheless, the association with acute pancreatitis is rare and there are only several cases reported in the literature. The pathogenetic mechanism is usually compression of the duodenal papilla, diverticular inflammation or compression of the common bile duct^{7,8}. The present case demonstrates a different mechanism when the size of the diverticula permitted constant compression on the pancreatic parenchyma after a heavy meal. Dietary modifications allowed to decrease the symptoms of the disease. Conservative management is possible for cases where the duodenal neck is wide, therefore allowing fast emptying of the diverticular content.

There are no commonly accepted guidelines on the management of duodenal diverticula. However, commonly accepted approach is to treat a duodenal

diverticulum when it becomes symptomatic or causes complications^{6,9}. The most common surgical treatment is open or laparoscopic resection, but there are several reports of successful conservative management^{6,9}.

Acute pancreatitis is a condition when the pancreas becomes inflamed in a short period of time. The most common reasons for acute pancreatitis are alcohol use, gallstones, and hypertriglyceridemia cause. However, the list of causes is extensive and includes other etiological factors such as anomalies of development of the gland, viral infections, systemic conditions, medications, trauma etc^{10,11,12}. Acute pancreatitis due to external compression from adjacent anatomical structures is an exceedingly rare condition and there are only a few case reports in the literature. The current case describes successful conservative management of such patients, however, surgical management is possible in refractory cases or when complications occur.

Conflict of interest

The authors have no conflict of interest to declare

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Author contribution

SC - concept and design of the study, editing, analysis of the literature; INL - concept and design of the study, editing, collecting material, text writing; AIE - research concept and design, editing, literature analysis, text writing; AAK - collection and processing of material, editing, analysis of literature; DSB - collection and processing of material, text writing, editing.

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