

Biliary stone causing afferent loop syndrome and pancreatitis

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Abstract

We report the case of an 84-year-old female who had a partial gastrectomy with Billroth-II anastomosis 24 years ago for a benign peptic ulcer who now presented an acute pancreatitis secondary to an afferent loop syndrome. The syndrome was caused by a gallstone that migrated through a cholecystoenteric fistula. This is the first description in the literature of a biliary stone causing afferent loop syndrome.

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Key words: Afferent loop syndrome; Biliary stone; Acute pancreatitis; Gallstone ileus

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INTRODUCTION

The afferent loop syndrome is a mechanical obstruction that impairs the clearance of bile and pancreatic juices from the afferent jejunal loop of a gastrojejunostomy. Entrapment of the afferent loop by postoperative adhesions, internal hernias, loop kinking at the gastrojejunostomy, intestinal volvulus, intussusception, anastomotic cancer, enteroliths and bezoars have all been incriminated as causes. A cholecystoenteric fistula with biliary stone impaction in the anastomosis as a cause has never been reported, as far as we know.

CASE REPORT

An 84-year-old female presented in the emergency room with severe right upper quadrant pain and vomiting in the last 8 h. She referred cholecystolithiasis with infrequent episodes of pain; the last one extended for 6 d and ended

4 d ago, being longer and more severe than usual. She brought a previous abdominal sonography showing a single stone of 1.5 cm in the gallbladder.

Her past history included diabetes mellitus and a partial gastrectomy with a Billroth II reconstruction for benign peptic ulcer 24 years ago. On physical examination the patient reported intense pain in the superior half of the abdomen. Vital signs were stable. Laboratory exams showed mild leukocytosis and acute pancreatitis.

An abdominal sonography was performed and demonstrated air inside the gallbladder associated with a dilatation of the afferent jejunal loop, suggesting a gallstone ileus as a possible cause for the bowel distension.

A computed tomography was then performed and revealed an afferent loop syndrome due to a stone impacted in the gastrojejunal anastomosis. Pancreatitis was also observed (Figure 1, Figure 2, Figure 3, Figure 4).

A few hours after the admission the patient presented hypotension and a decline in her mental status requiring orotracheal intubation and vasopressors. She was then transferred to an intensive care unit.

An upper digestive endoscopy was performed and successfully removed the stone with a basket (Figure 5). During the following two days her white blood cell count increased, her renal and liver functions declined and the vasopressors were progressively augmented. She also presented an abdominal compartment syndrome on the second day being submitted to a decompressive laparotomy. During the laparotomy adhesions were observed between the afferent loop and the gallbladder.

On the third day the patient presented a cardiac arrest and died.

DISCUSSION

The afferent loop syndrome results from the obstruction of the afferent jejunal loop of a gastrojejunostomy. Its acute form usually occurs in the early postoperative period but it can occur decades after the surgery having a devastating course unless promptly treated^[1-4].

There are various causes of the afferent loop syndrome. Adhesions, volvulus, intussusception are some of the most common while enteroliths, cancer and bezoars are some of the rarest^[1-7]. This is the first report in the literature of a biliary stone causing the syndrome (Pubmed, Medscape, Cochrane database and Scielo database were systematically reviewed).

The pain reported by the patient 4 d before the admission might have been an acute cholecystitis that led to the formation of a cholecystoenteric fistula, allowing the biliary stone to ingress the afferent loop and ultimately

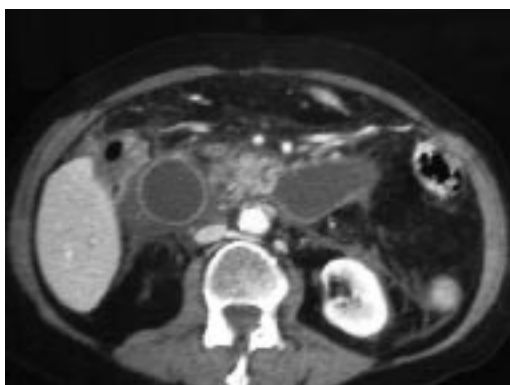


Figure 1 Dilated jejunal loop crossing the midline.

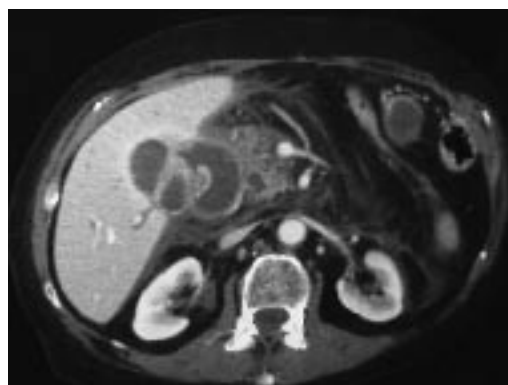


Figure 2 The dilated afferent loop and the stone (arrow).



Figure 3 Stone in more detail (arrow).



Figure 4 The relation between the gastrojejunal anastomosis (right arrow) and the stone (left arrow) in a tomographic reconstruction.



Figure 5 Biliary stone (with a diameter of 3 centimeters) after endoscopic removal.

stop in the anastomosis causing the obstruction.

Concerning the acute pancreatitis it is an uncommon and aggressive manifestation of the afferent loop syndrome with few cases found in the literature. The transmission of high pressures back to the biliopancreatic ductal system leading to duodenopancreatic reflux seems to play an important role in its pathogenesis. An experimental model of “closed duodenal loop” can simulate this clinical situation^[4,6,8].

Regarding the management of the obstruction, the choice to perform a gastrointestinal endoscopy was based on the patient’s vital signs that were quickly declining. In fact this is a rapid procedure, with low risk of complications, far less aggressive than a laparotomy and it has already been successfully used to remove gallstones

occluding the upper digestive tract^[9,10]. Percutaneous drainage is also a conservative option^[11]. Either way surgical lithotomy can always be performed, even as a last resource when the other options failed^[12].

Although the obstruction was rapidly resolved and the measures for severe pancreatitis were quickly introduced the multiple organ dysfunction was already installed. The patient’s age and the diabetes also contributed to the outcome.

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