Acute Afferent Loop Syndrome: a True Emergency. A Case Report


Aristotle’s University of Thessaloniki, 2nd Prop. Department of Surgery*, Department of Anaesthesiology**, Hippokration General Hospital, Thessaloniki, Greece.

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Abstract. Afferent loop syndrome is a relatively rare complication after subtotal gastrectomy. We present a late onset of afferent loop obstruction, in a patient who underwent Billroth II gastrectomy with Roux-Y reconstruction for a gastric ulcer 27 years ago.

A 60-year-old male was admitted to the hospital with an 8-hour history of acute epigastric pain, associated with vomiting, fever and signs of sepsis. Laboratory tests revealed leukocytosis, elevated liver function tests and high serum amylase. An obstructed afferent loop appeared on CT as a fluid filled tubular mass, crossing the middle line between the aorta and the mesenteric vessels. Advanced sepsis was also seen in the peripancreatic and retroperitoneal region. Although the patient was operated on immediately after diagnosis with reconstruction of Roux-Y anastomosis, he died 12 hours later.

Afferent loop syndrome is quite uncommon, and must be suspected in patients who have undergone subtotal gastrectomy. Clinical manifestations of the syndrome are usually non-specific. CT is the examination of choice and surgery the first choice treatment.

Introduction

Afferent loop syndrome (ALS) is an uncommon complication of gastric surgery and is caused by obstruction of the duodenum and jejunum proximal to the gastrojejunal anastomosis. The obstruction is most commonly caused by adhesions, kinking of the anastomosis, internal hernia, intussusception, marginal ulceration, stomal stenosis and recurrent malignancy (1). Clinical findings of ALS are relatively non-specific including in most cases abdominal pain, nausea and vomiting, postprandial fullness and obstructive jaundice (2). Development of stones in the chronically obstructed afferent loop, as well as malignant transformation, may also be encountered (3). Onset of symptoms can be acute, or more usually intermittent, due to chronic partial obstruction (4).

We present a case of acute afferent loop obstruction in a patient, 30 years after Billroth II gastrectomy with Roux-Y reconstruction.

Case report

A 60-year-old male was admitted with diffuse epigastric pain, fever of 38.9°C, nausea and vomiting of 8 hours duration. The patient had been complaining for almost a year about postprandial abdominal pain, localized to the right upper quadrant (RUQ), with associated abdominal fullness. His past medical history was unremarkable, except for subtotal gastrectomy with Roux-en Y reconstruction for a peptic ulcer 27 years previously.

Upon admission, physical examination revealed a distended abdomen with tenderness and guarding of the upper abdomen. Laboratory findings showed a WBC count of 19200/ml, total bilirubin 2.98 mg/dl, direct bilirubin 1.47 mg/dl, alkaline phosphatase 105 U/L, -GT 179 U/L, SGOT 287 U/L, SGPT 168 U/L, serum amylase 1777 U/L and urine amylase 2576 U/L. Plain abdominal films revealed only a few dilated small bowel loops. Clinical and laboratory findings were suggestive of acute pancreatitis and a CT scan was performed to further confirm the diagnosis.

The CT scan, after oral and intravenous contrast medium, revealed mild pancreatitis with associated fluid collection around the pancreatic head extending into the right pararenal space. Unexpectedly, an enormous dilatation of the second part of the duodenum and a fluid filled tubular structure, with no contrast inside, crossing the midline between the aorta and the mesenteric vessels, were found (Fig. 1). Additionally, intra- and extrahepatic biliary dilatation was seen. Based on these findings a diagnosis of acute pancreatitis secondary to afferent loop obstruction was made.

In the next few hours the patient’s condition dramatically deteriorated and an emergency operation was decided upon.
Laparotomy revealed enormous dilatation of the afferent loop and duodenum, as a consequence of complete obstruction of the Roux entero-enterostomy due to scarring, with dispersed ischaemic areas.

Because of haemodynamic instability, the patient underwent only external drainage of the duodenal stump using a Foley catheter, strictureplasty of the anastomosis and extensive drainage of the retroperitoneal space. However, the patient died 12 hours later.

Discussion

Afferent loop syndrome was first reported in 1881. Its incidence has decreased with modern surgical techniques (short afferent loop and closure of the retro-anastomotic space) and nowadays, it is estimated to be about 0.3% (5). ALS may present as an acute or chronic condition (5).

Patients with chronic ALS experience abdominal fullness and epigastric pain usually within one hour postprandially (6). In its classic manifestation, symptoms may be difficult to establish. In cases of a Roux-en-Y reconstruction, symptoms are even more unspecific and vomiting is usually absent since the anastomosis is far away from the gastric remnant. We believe that our patient’s oneyear history of postprandial pain represented an undiagnosed chronic form of afferent loop syndrome. In a few cases increased intraluminal pressure within the afferent loop may provoke dilatation of the biliary tree as well as relapsing episodes of acute pancreatitis.

Upon suspicion, the imaging study of choice is a CT scan, since both plain abdominal x-rays and ultrasonography offer little in diagnosis. The appearance of the afferent loop in the CT is usually characteristic. A U-shaped, liquid filled, tubular structure, which does not opacify with oral contrast and usually surrounds the head of pancreas, is seen. The obstructed loop can extend from the gall-bladder to the site of gastrojejunal anastomosis, crossing the middle line between the aorta and the superior mesenteric vessels (2, 8). Additional findings are biliary and pancreatic duct dilatation, pancreatitis, enterolith and recurrent malignancy (2, 3).

In most cases treatment of the chronic form is individualized, depending on the cause of the afferent loop obstruction. In any case this does not represent an emergency. Surgery however, should not be delayed if signs and symptoms consistent with complete obstruction develop (8).

In contrast to the chronic form, acute ALS is caused by complete obstruction of the afferent loop and is a true surgical emergency; if left untreated, ischaemia, necrosis and rupture of the afferent loop may follow (9). It is very rare, occurs usually in the early postoperative period but, as in the case presented, it may appear several years after surgery. Symptoms are non-specific and vomitus is not bilious because the biliary and pancreatic secretions remain in the obstructed loop. In most severe cases, signs of acute abdomen due to bowel ischaemia are present. Immediate laparotomy is necessary and the main goal of surgical treatment is decompression of the obstructed loop.

In conclusion, afferent loop syndrome should be considered in patients who have undergone gastric surgery and who present with episodes of acute or recurrent abdominal pain or pancreatitis. Acute ALS is a true emergency and should be in the surgeon’s mind when dealing with a case of acute abdomen in a patient with
prior gastric surgery. Favourable outcome depends on early diagnosis and prompt surgery.

References


A. Sakadamis
5 Omirou St, Panorama
552 36 Thessaloniki, Greece
Tel. : +302310992933
Fax : +302310992932
E-mail: svrafail@otenet.gr; asakadam@med.auth.gr