

A rare cause of obstructive jaundice and gastric outlet obstruction

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Abstract

Superior mesenteric artery syndrome is a rare cause of upper gastrointestinal obstruction, and is characterized by 3rd duodenal obstruction between the abdominal aorta and the superior mesenteric artery. Classical symptoms are postprandial epigastric pain, nausea, vomiting, and weight loss, or acute upper gastrointestinal obstruction. We herein describe an unusual presentation, with jaundice due to compression of the common bile duct by the gastric obstruction and dilated duodenum.

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Key words: Upper gastrointestinal obstruction; Superior mesenteric artery syndrome; Obstructive jaundice

Core tip: Superior mesenteric artery syndrome is a rare cause of upper gastrointestinal obstruction, with

sometime unusual presentation, as in the present case, obstructive jaundice. Clinicians need to be aware of this rare situation and its main radiographic sign *i.e.*, extraluminal compression of the duodenum between the superior mesenteric artery and the aorta.

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INTRODUCTION

Superior mesenteric artery syndrome is a rare cause of upper gastrointestinal obstruction, and is characterized by 3rd duodenal obstruction between the abdominal aorta and the superior mesenteric artery. This can be due to loss of intra-abdominal fat by malabsorption, cancer, anorexia nervosa, or spinal surgery decreasing aorto-mesenteric angle and the distance between the superior mesenteric artery (SMA) and aorta. Classical symptoms are postprandial epigastric pain, nausea, vomiting, and weight loss, or acute upper gastrointestinal obstruction. We report an unusual presentation, with jaundice due to compression of the common bile duct by the gastric obstruction and dilated duodenum.

CASE REPORT

A 31-years old man was admitted in a traumatology unit after a fall from the 3rd floor, and was operated for a thoracic spine injury (without spinal cord injury) requiring a T2-T6 osteosynthesis. Three weeks later, and after a more than 10 kg weight loss, the patients progressively complain of abdominal discomfort, nausea, vomiting and jaundice. Physical examination only revealed abdominal

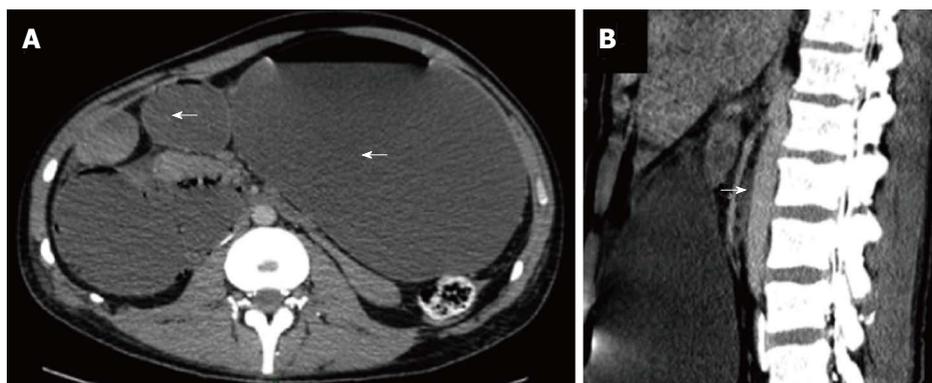


Figure 1 Contrast computed tomography revealing. A: A complete gastric outlet obstruction (white arrow); B: With distension of the stomach, and the duodenum, with a flat bowel after its pass behind the superior mesenteric artery (white arrow).

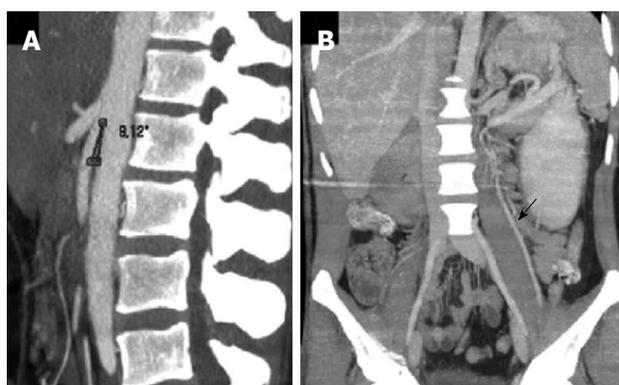


Figure 2 Contrast computed tomography with vascular reconstruction revealing. A: That the aortomesenteric angle was decreased to 9; B: A left renal vein obstruction with left gonadal vein dilatation.

distension without tenderness in an undernourished and jaundiced patient. Blood work was significant for a bilirubin of 168 mmol/L and elevated liver enzymes Aspartate Aminotransferase (92 UI/L), Alanine Aminotransferase (109 UI/L), and Gama Glutanyltransferase (288 UI/L). The remainder of his laboratory works was within normal limits. Contrast computed tomography (CT) was performed, revealing a complete gastric outlet obstruction (Figure 1), and elucidated the clinical situation.

DISCUSSION

On the basis of clinical presentation and CT scan imaging SMA syndrome was suspected. CT scan revealed distension of the stomach, and the duodenum, with a flat bowel after its pass behind the SMA (Figure 1A). When compared to initial imaging, aortomesenteric angle was decreased to 9° (Figure 1A and 2A), because of the rapid and intense weight loss following surgery, associated with a decreased retroperitoneal fat thickness. Additionally, because of the chronic gastric outlet obstruction, there either a direct compression of the common bile duct by the distended stomach and duodenum or an increased intraduodenal pressure, responsible for the obstructive jaundice, as proven by the rapid bilirubin and liver function test decreased after nasogastric tube decompression. The mechanism of this upper gastrointestinal (GI) obstruction is an extraluminal compression of the duodenum between the SMA and the

aorta. This was associated with a left renal vein obstruction with left gonadal vein dilatation (Figure 2B). After nasogastric tube decompression, obstructive jaundice and abdominal discomfort rapidly disappeared. Because of failure of parenteral nutrition and enteral feeding, possibly due to an important catabolism following extensive spine surgery, and anorexia in relation to a depressive syndrome, a Roux-en-Y gastrojejunostomy associated with duodenojejunal flexure lowering (Strong's procedure) was performed, allowing oral feeding and weight gain within the next weeks.

SMA syndrome is a rare cause of upper gastrointestinal, first described in 1842 by Von Rokitanski, and characterized by 3rd duodenal obstruction between the abdominal aorta and the SMA^[1]. This can be due to loss of intra-abdominal fat by malabsorption, cancer, anorexia nervosa, or spinal surgery^[2,3] decreasing aortomesenteric angle and the distance between the SMA and aorta. Classical symptoms are postprandial epigastric pain, nausea, vomiting, and weight loss, or acute upper GI obstruction^[4]. Biliary symptoms such as in this case have been rarely reported^[5].

CT angiography with 3-D reconstruction and oral contrast provides the diagnosis. Diagnostic criteria include: aortomesenteric angle < 20°, aortomesenteric distance < 8 mm, gastric and duodenal dilatation above the third duodenum^[6]. Left renal vein compression by SMA and its consequences such as varicocele, hematuria or orthostatic proteinuria, can also be seen so-called nutcracker syndrome^[7].

Initial conservative treatment, with nasogastric decompression, electrolytic resuscitation and nutritional support, is successful in more than half of patients and seems to be efficient only in patients with short story of SMA syndrome and mild duodenal stenosis^[8]. Two surgical options are indicated after medical treatment failure: obstruction bypass such as duodenojejunostomy and gastrojejunostomy or Treitz's ligament lowering (the Strong's procedure) to decompress the duodenum^[9]. Clinicians need to be aware of this rare situation and its main radiographic sign, *i.e.*, extraluminal compression of the duodenum between the SMA and the aorta, in order to promptly adapt their therapeutic strategy.

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