

Image in Medicine

PNEUMATOSIS INTESTINALIS AND ARCUATE LIGAMENT

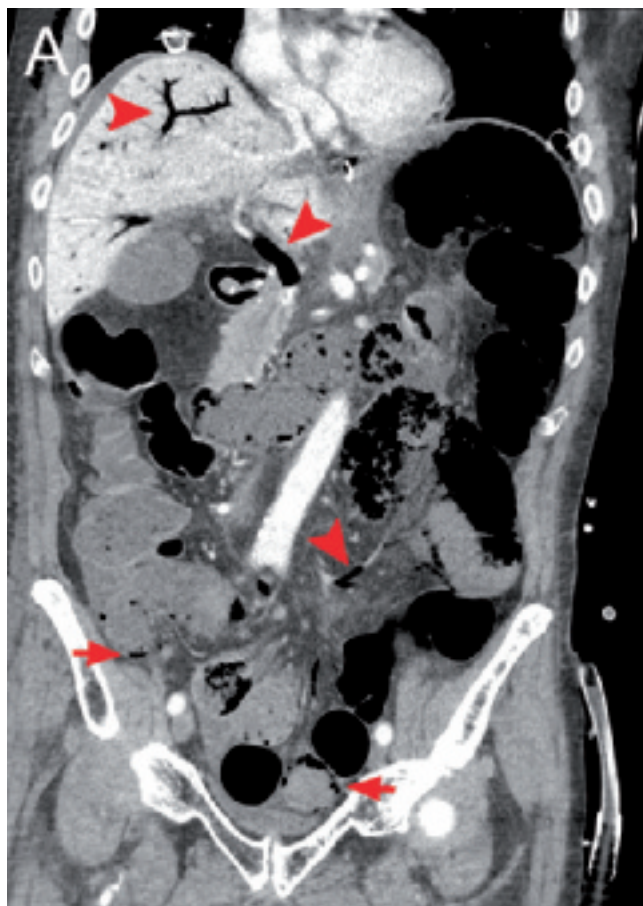
F. Jouret¹, M. Dupont², A. Jouret-Mourin³, D. Castanares Zapatero¹

Key words: mesenteric ischemia, portomesenteric venous gas, abdominal compartment syndrome

A 74-year-old patient developed acute abdominal pain and distension, with signs of peritoneal irritation, two days after oesophagogastrectomy with oesophagostomy and feeding jejunostomy for oesophageal epidermoid carcinoma. The patient's clinical condition rapidly declined, with the onset of acute renal failure and lactic acidosis despite hemodynamic support. Intra-abdominal pressure progressively reached 26 mmHg.

Abdominal computed tomography (CT) showed diffuse bowel dilation and *pneumatosis intestinalis* throughout the small intestine (Panel A, arrows), as well as gas in the portomesenteric venous system (Panel A, arrowheads). In addition, CT imaging revealed significant atherosclerosis and the presence of a median arcuate ligament (MAL) responsible for extrinsic stenosis of the celiac trunk (Panel B, arrowhead), with post-stenotic dilation.

Surgical exploration found a diffusely necrotic small-bowel, which was removed. Pathological examination revealed flattened blue-black mucosa with areas of muscular necrosis and transmural haemorrhages. Microscopy further showed the loss of intestinal epithelium, with fibrinous membranes, withering crypts and congestive lamina propria, thereby confirming the ischemic origin of the lesion.



¹ Department of Critical Care Medicine

² Department of Radiology

³ Department of Pathology,
Cliniques Universitaires Saint-Luc,
Université catholique de Louvain,
Brussels, Belgium

Address for Correspondence

Dr D. Castanares-Zapatero
Department of Critical Care Medicine
Cliniques Universitaires Saint-Luc
Université catholique de Louvain
Avenue Hippocrate, 10
B-1200 Brussels, Belgium
Tel.: +32/2.764.27.32
E-mail: diego.castanares@uclouvain.be



Radiological findings of acute bowel ischemia depends on its cause, severity and location, as well as on the presence and extent of intraparietal haemorrhage, concomitant infection, and/or perforation. *Pneumatosis intestinalis* and portomesenteric venous gas have been reported as less common but more specific signs for acute bowel ischemia, being present in 6%-28% and 3%-14% of cases, respectively (1). Of note, various non-ischemic conditions, including traumatic, inflammatory, infectious, neoplastic, and obstructive causes, may also be associated with such imaging. Here, MAL-related stenosis of the celiac artery may have worsened post-operative mesenteric underperfusion (2). The clinical outcome of patients with intestinal ischemia mostly depends on the time delay between diagnosis and surgical exploration.

REFERENCES

1. Wiesner W, Khurana B, Ji H, Ros PR. CT of acute bowel ischemia. *Radiology* 2003; 226: 635-50.
2. Tseng YC, Tseng CK, Chou JW et al. A rare cause of mesenteric ischemia: celiac axis compression syndrome. *Intern Med* 2007; 46: 1187-90