

Acute mesenteric ischaemia

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Section: Abdominal imaging

Area of Interest: Abdomen

Procedure: Contrast agent-intravenous

Imaging Technique: CT

Special Focus: Embolism / Thrombosis Case Type:
Clinical Cases

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Patient: 65 years, female

Clinical History:

A 65-year-old diabetic female patient with abdominal pain and abdominal distension.

Imaging Findings:

Abdominal CT arterial phase shows superior mesenteric vein thrombosis (Fig 1).

Abdominal CT portal phase (Fig. 2) shows spleno-mesenteric venous thrombosis (Fig 2a).

Mural thickened wall and target appearance of small bowel segments with mesenteric oedema (Fig 2b).

Perihepatic and perisplenic ascites (Fig 2c).

Discussion:

Mesenteric ischaemia is a rare but potentially life-threatening condition caused by blood flow that is insufficient to meet the metabolic demands of the visceral organs. Acute mesenteric ischaemia has several aetiologies : thrombosis of a mesenteric artery , non-occlusive mesenteric ischaemia and portomesenteric venous thrombosis while chronic mesenteric ischaemia is most frequently caused by atherosclerosis. [7]

Patients with mesenteric ischaemia usually present with nonspecific abdominal symptoms and laboratory findings. Acute mesenteric ischaemia (AMI) should be suspected in patients with severe abdominal pain contrasting with a relatively poor clinical examination [3, 5]. In case of chronic mesenteric ischaemia patients often have postprandial abdominal pain and weight loss.

Computed tomography angiography (CTA) is the imaging modality of choice for AMI. CTA is performed with intravenous iodine contrast agent for enhancing both vessels and parenchymatous organs. Axial images are reconstructed to thin axial slices of 1-3 mm for further multiplanar reformatting and 3D reconstructions. Unenhanced CT can depict submucosal haemorrhage, hyperdense/calcified thrombi and atherosclerotic plaque. The arterial acquisition of the abdomen is performed 15-s after intravenous contrast material administration to depict mesenteric vessels thrombosis or occlusion and abnormal bowel enhancement. Portal venous phase after a 60-s is useful to evaluate solid organ infarction and mesenteric venous thrombosis.

CT diagnosis of acute mesenteric ischaemia is based on vascular findings (filling defect in the lumen of the vessel, abrupt termination or focal stenosis of the affected artery, collateral circulation) and non-vascular findings such as bowel wall thickening, hypoperfusion and hypoattenuation, bowel dilatation, bowel wall haemorrhage, mesenteric fat stranding, mesenteric oedema , pneumatosis intestinalis, and portal venous gas [9, 10].

In chronic mesenteric ischaemia CT findings are [9, 11] :

Direct signs :

- Calcified or non-calcified atheromatous plaques

significant increase in systolic and diastolic velocities (>200 and >55 cm/s).

Medical treatment includes fluid resuscitation, Heparin and vasodilators.

Endovascular Repair: thrombectomy or angioplasty and stenting.

Laparotomy aimed to revascularise the occluded vessel, assess the viability of the bowel, and resect the necrotic bowel [4].

CTA is a fast and efficient tool in the diagnosis of mesenteric ischaemia which is a life-threatening condition requiring early management.

Differential Diagnosis List: Mesenteric venous ischaemia, Inflammatory bowel disease, Mural haemorrhage, Vasculitis such as Henoch-Schönlein purpura

Final Diagnosis: Mesenteric venous ischaemia

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Figure 1

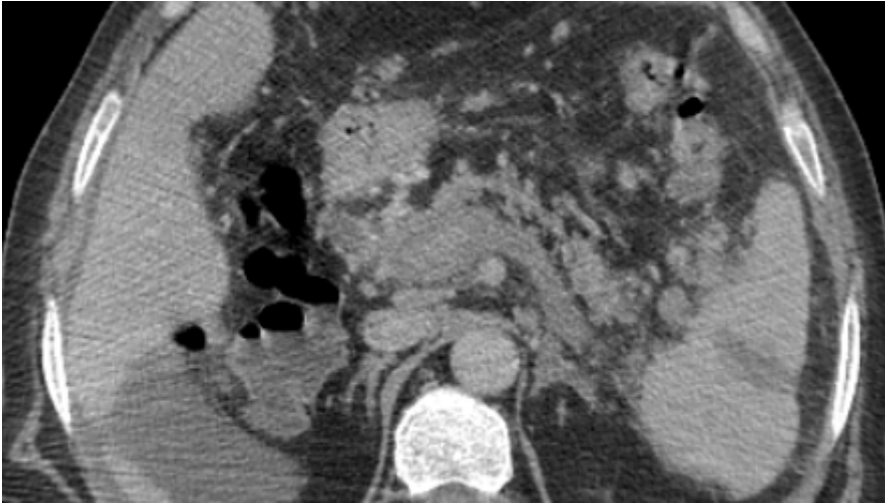
a



Description: Superior mesenteric vein thrombosis. **Origin:** Emergency department of Radiology Ibn Rochd Hospital/Casablanca- Morocco

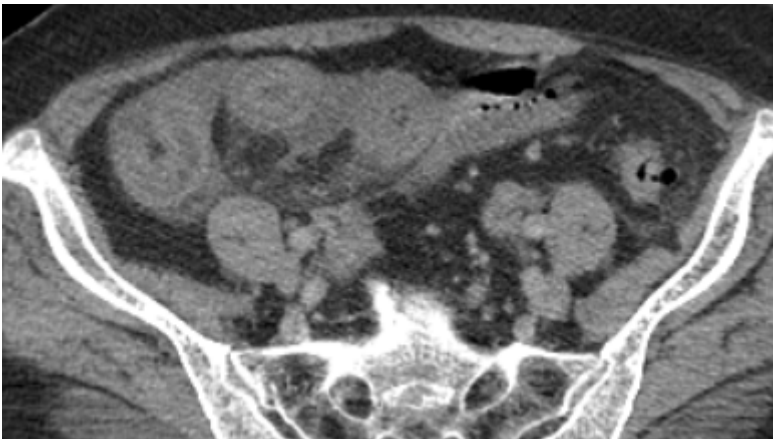
Figure 2

a



Description: Spleno-mesenteric venous thrombosis. **Origin:** Emergency department of radiology Ibn Rochd Hospital Casablanca-Morocco

b



Description: Mural thickened wall and target appearance of small bowel segments with mesenteric oedema. **Origin:** Emergency department of radioogy Ibn Rochd Hospital Casablanca - Morocco

c



Description: Ascites. **Origin:** Emergency department of radiology Ibn Rochd Hospital Casablanca - Morocco