Case 14315

Splenic infarct: an infrequent thrombotic manifestation in polycythemia vera (PV).
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Section: Abdominal imaging
Area of Interest: Spleen
Procedure: Contrast agent-intravenous
Imaging Technique: CT
Special Focus: Embolism / Thrombosis Ischaemia / Infarction
Case Type: Clinical Cases
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Patient: 48 years, male

Clinical History:

A 48-year-old male presented to the ER with 3 days of intermittent abdominal pain localized in the left hypochondria. Abdominal examination revealed left upper quadrant tenderness without rebound tenderness. No history of trauma. Laboratory findings showed hemoglobin 11.6 mmol/L, leukocytes 10, 5 10^9/L, CRP 109mg/L, thrombocytes 561 10^9/L and erythrocytes 53 vol.fr.

Imaging Findings:

Emergency CT abdomen with i.v contrast (Fig. 1a, b) showed a 5x4 cm hypodense, wedge-shaped, irregular central area in the spleen (HU-42) and marked splenomegaly (17x9cm). Associated findings were left-sided pneumothorax and basal atelactasis. Clinical findings and CT findings excluded splenic rupture and the patient received conservative treatment. Follow Op CT-abdomen showed no new findings.

Discussion:

Splenic infarction (SI) is a result of tissue necrosis caused by parenchymal ischaemia due to interruption of arterial blood supply to the spleen. Infarction may involve a segment of the spleen or the entire spleen [1]. SI can present with nonspecific clinical symptoms in the form of left upper quadrant pain or haemorrhagic shock resulting from massive sub-scapular bleeding [2, 3]. Pain can be accompanied by fever, chills, pleuritic chest pain and left shoulder pain (Kehr finding) [1]. SI caused by polycythaemia vera (PV) has been reported as a rare complication and the incidence is unknown. Other symptoms include post bathing pruritis, secondary to basophil degranulation, weakness and dizziness.

PV is a chronic myeloproliferative disorder characterized by excessive proliferation of erythrocytes, leukocytes and thrombocytes [4]. Hyperviscosity of blood due to increased red cell mass and plasma volume causes thrombotic events [5]. Splenomegaly is a known complication of PV which is caused by myeloid metaplasia and extramedullary haematopoiesis [6, 7] and it occurs in 75% of patients. However splenic infarction along with splenomegaly is an infrequent thrombotic manifestation seen in patients with PV [5].

CT (computerised tomography) scanning with contrast is the best method for the diagnosis of splenic infarction. SI appears as indistinct hypoattenuated areas in unenhanced scans, and it becomes considerably more distinct after intravenous contrast and appears as a wedge-shaped, sharply contoured hypodense lesion in CT scanning. Focal
Infarcts are better demarcated during the early and subacute phases and becomes isodense and atrophic in chronic stages. Atypical appearances as round, heterogeneous or poorly marginated lesions may render diagnostic uncertainty or be mistaken as abscess, haematoma or tumours [8]. Magnetic resonance imaging with intravenous gadolinium contrast medium is another option. Ultrasound imaging is useful where splenic parenchyma can be identified, however morbid obesity and increased bowel gas can make this modality less useful [3]. B mode ultrasound has high incidence of false negative results in acute phase of SI [9].

As in our case, the clinical history of abdominal pain, panmyelosis and increased hematocrit at 0.59 vol.fr, bone marrow biopsy finding of prefibrostisk myelofibrosis with Janus Kinase(JAK) 2 mutation 42% along with CT findings imaging findings came to the conclusion of splenic infarct caused by primary polycythemia vera. Our patient received phlebotomy and hydroxycarbamid without the need for splenectomy. So, splenic infarction should be considered in patients at risk and with non-specified left upper quadrant pain, and a CT should be performed.

**Differential Diagnosis List:** Splenic infarction complicating polycythaemia vera, Splenic abscess, Splenic rupture, Mononucleosis

**Final Diagnosis:** Splenic infarction complicating polycythaemia vera

**References:**


**Figure 1**

**a**

Description: CT-abdomen with i.v contrast showing splenic infarction. Origin: Slagelse Hospital, Department of radiology, Slagelse, Denmark

**b**

Description: CT-abdomen with i.v contrast showing wedge shaped, irregular, hypoattenuated area with the apex pointing towards the hilum, and the base on the splenic capsule. Origin: Slagelse Hospital Department of Radiology Slagelse Denmark