

Acute left-sided abdominal pain

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CASE REPORT

A 65-year-old Caucasian male with obesity (BMI 34) and no medical history was referred to our emergency room for acute and continuous left-sided abdominal pain. The pain increased during inspiration. The patient was vomiting and had constipation. He had no motion tendency or fever. The patient was not on any medication, smoked ten cigarettes and consumed three alcoholic beverages each day. On physical examination, the patient was in pain and sweating. He had an irregular pulse and pain on the left-sided hemithorax and left upper abdominal quadrant. No enlarged lymph nodes were palpated.

An ECG revealed atrial fibrillation with a ventricular rate response of 95 beats/min. A thoracic X-ray showed an enlarged heart, with no pulmonary or bone abnormalities. Laboratory tests revealed normal renal and liver function, a negative d-dimer (0.39 µg/ml), a mild leucocytosis ($13.4 \times 10^9/l$), a CRP of 162 mg/l, and a conjugated bilirubin of 29 µmol/l. No protein, leucocytes or erythrocytes were found in the urine dipstick. A pulmonary embolism was unlikely because of a low Wells score and a negative d-dimer. We performed an abdominal ultrasound which revealed an hypo-echogenic lesion in the spleen. Next step was a CT angiography of the abdomen, which showed a wedge-shaped hypodensity in the spleen (*figure 1*).

Figure 1. Contrast CT abdomen. There is a wedge-shaped hypodensity in the spleen



WHAT IS YOUR DIAGNOSIS?

See page 87 for the answer to this photo quiz.

ANSWER TO PHOTO QUIZ (PAGE 84)
ACUTE LEFT-SIDED ABDOMINAL PAIN

DIAGNOSIS

The CT angiography of the abdomen clearly showed a wedge-shaped hypodensity in the spleen indicating a splenic infarction (*figure 1*). Contrast CT scan of the abdomen is currently the best non-invasive test available to diagnose splenic infarctions. It has the advantage of showing the infarction in the spleen and other target organs, while the extent of the thrombosis and sometimes the source of the infarction can be clarified. Ultrasonography has a low diagnostic yield for acute splenic infarction, however, ultrasonography can be useful in the follow-up of patients with acute splenic infarction, for detection of possible complications such as peritoneal haemorrhage, or pseudocyst or abscess formation.¹

Different causes of spleen infarction are thromboembolic causes (such atrial fibrillation (AF), patent foramen ovale, endocarditis), hypercoagulable disorders, haemoglobinopathy, myeloproliferative diseases, acute infection, splenomegaly, trauma or obstruction of the spleen artery. Infarction is caused by total occlusion of the splenic artery or one of the side branches due to thrombi or emboli. The incidence of splenic infarction found in the literature is very low.² Single patient case reports are still published in peer-reviewed medical journals,^{3,4} emphasising that the diagnosis of splenic infarction is far from obvious at the emergency department. In this case, AF was probably the cause of the splenic infarction. The mechanism of thrombus formation in AF patients is due to: 1) Stagnation of blood flow in the left atrium, visible

on an echocardiogram as spontaneous echo-contrast; 2) Anatomical cardiac wall defects, such as progressive atrial dilatation; and 3) Abnormal platelet activation and changes in coagulation factors, contributing to an increased propensity for blood clot formation.⁵ In the literature, the incidence of splenic infarction due to AF is unknown.

In summary, this patient presented with acute abdominal pain, worsening during inspiration based on a splenic infarction due to thromboemboli formed during AF. The patient received analgesics, anti-emetics, and intravenous fluids. For his AF he was treated with anticoagulants (acenocoumarol after fraxiparin) and rate control with beta blockers. He recovered fully with this conservative treatment.

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