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# An uncommon cause of upper abdominal pain, nausea and vomiting.

M.S. Kramps, MD & L.C. van den Hengel, MD
Emergency Department, Franciscus Gasthuis & Vlietland, Rotterdam, The Netherlands

franciscus Gasthuis & Vlietland

**Introduction**:
This is a case of an uncommon cause of upper abdominal pain in a young healthy patient who was presented to our Emergency Department (ED).

**History:**
A 33-year-old man, without any previous medical history, presented to our ED by ambulance. He reported to have cramping upper abdominal pain, without radiation, for 10 hours. This pain was accompanied by nausea and vomiting. There was no fever. In the previous four days patient had experienced epigastric pain with pyrosis, for which his general practitioner had prescribed a proton pomp inhibitor two days ago. He reported to smoke three joints a day and he does not drink alcohol anymore. A warm shower three times a day gives pain relief, but does not completely eliminate the pain. The patient had no problems with urinating, his urine seems a bit dark. There were no problems or changes in stool.

**Physical examination:**
The patient was painful and was nauseous. His vital signs were, despite his pain, unremarkable and no fever was present. Cardiac and lung examination showed no abnormalities. Abdominal examination showed painful palpation of the epigastric area and upper left quadrant and left sided flank pain. There were no signs of defense musculaire.

**Differential diagnosis:**
Peptic ulcer, Perforated peptic ulcer, Pancreatitis, Cannabinoid hyperemesis syndrome, Diverticulitis, Kidney infarction, Kidney stones, Splenic infarction, (Splenic abscess)

**Test Results:**
ECG was unremarkable.
Laboratory tests showed a haemoglobin level of 9.1 mmol/L (normal range) with normal leukocytes. Lactate was normal at 1.7 mmol/L. C-reactive protein was elevated 78 mg/L as was lactatedehydrogenase 673 U/L (range <248 U/L). Liverenzymes were also elevate: ALAT 121U/L and ASAT 98 U/L (range <45 and <35 respectively).
Urine analysis was weak positive for haematuria.

Radiographic: Computer tomography of the abdomen with intravenous contrast showed splenomegaly (length fourteen centimetres) with perfusion defects in the spleen, indicating splenic infarctions. No occlusion was seen in the arteries. There was no intra-abdominal free fluid or air.

**Figure 1. Frontal view of CT-abdomen with splenic infarction (red arrow)**

**Conclusion:**
This patient presented to our ED with abdominal pain in the left upper quadrant due to infarctions of the spleen. Patient was admitted in the hospital and treated with pain medication and anti-platelets until underlying causes were investigated. He was admitted for 3 days until pain resolved and patient stayed hemodynamically stable. Hypercoagulability, embolic diseases, anomalies of the arteries, portal vein thrombosis and neoplasms, as possible underlying cause were excluded. Due to the presence of atypical lymphocytes at presentation and his quick recovery, the hypothesis is that the infarctions were secondary to a viral infection. Infectious mononucleosis and hepatitis were ruled out. His blood smear showed no Howell-Jolly bodies and patient recovered fully.

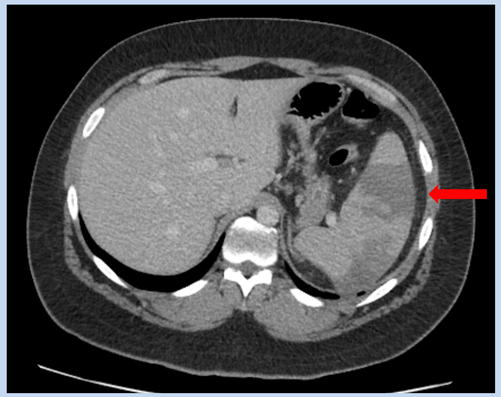

**Figure 2: Transversal view of CT-abdomen with splenic infarction(red arrow)**

**Discussion:**

Splenic infarction is a rare condition. The prevalence is unknown. Limited case series and case reports describe a variety of clinical presentations.[1,2,3] Due to this variety it is thought to be an often missed diagnosis. Abdominal pain can be present in about 80% - 85% of patients with confirmed splenic infarction. Specifically the originally described left upper quadrant pain seems to be present in 30-35%. [1,2,3] Ultrasound can reveal splenic infarctions, but computed tomography has better sensitivity as already described in 1986.[4] The cause of splenic infarctions can be sought in hypercoagulable conditions, emboli, trauma, dissection, haemoglobinopathies and rapid growth due to an infection, lymphoma or hematologic malignancies. Infections known to be associated with splenic infarctions include infectious mononucleosis, cytomegalovirus, brucella and malaria.

Often an underlying disease is present and splenic infarction can even be the first symptom of an unknown illness. Older literature, mostly deriving from autopsy series, mentions a lot of possible devastating complications including splenic abscess, the formation of pseudocysts, haemorrhage and splenic rupture. More recent case series describe mostly uncomplicated outcomes.[4]

Emergency Physicians should keep splenic infarctions in their differential diagnosis, even if a patient presents as a possible acute abdomen or shows symptoms of nephrolithiasis. A normal lactate level does not rule out splenic infarction. When the diagnosis is made, search for the underlying cause.

**References:**

[1] Schattner A et al. Acute splenic infarction at an academic general hospital over 10 years. Medicine 2015: 94:36

[2] Lawrence YR et al. Splenic infarction: an update on William Oslers observations. IMAJ 2010:12:362-365

[3]Antopolsky M et al. Splenic infarction: 10 years of experience. Am J Emerg. Med 200927:262-165

[4] Jaroch MT et al. The natural history of splenic infarction. Surgery 1986:100: 743-750