Septic pylephlebitis: A rare complication of acute appendicitis
Published on 17.04.2016

DOI: 10.1594/EURORAD/CASE.13551
ISSN: 1563-4086
Section: Abdominal imaging
Area of Interest: Abdomen
Procedure: Diagnostic procedure
Technique: CT
Special Focus: Infection Case Type: Clinical Cases
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Patient: 27 years, female

Clinical History:

27-year-old women, with history of 3 days of abdominal pain, fever and diarrhoea. Physical examination showed diffuse abdominal pain without tenderness. She was discharged with the diagnosis of gastroenteritis.

10 days later, she presented fever, upper right quadrant abdominal pain, diarrhoea and jaundice. The laboratory finding revealed 13,000 leukocytes/mm3.

Imaging Findings:

An abdominal and pelvic CT scan was completed to rule out the possibility of appendicitis, diverticulitis, or an intra-abdominal abscess.

The enhanced CT revealed the presence of an acute appendicitis with a non-occlusive thrombus within the portal vein. Particularly, CT scan showed inflammation of the appendix with marked periappendiceal infiltrates (Fig. 1), and a hypodensity was seen in the portal vein (Fig. 2).

Apparently, the septic allocation passed through the ileocolic vessel to the portal vein, predisposing its thrombosis. The patient was treated with emergency open appendectomy and received broad spectrum antibiotics and anticoagulation therapy.

Discussion:

Pylephlebitis is defined as septic thrombophlebitis of the portal vein or one of its tributaries, usually secondary to suppuration either in the region drained by the portal system or in structures contiguous to the portal vein such as colonic diverticulitis, appendicitis, pancreatitis, cholangitis, inflammatory bowel diseases, bowel perforation, and early post-surgical conditions [1].

Pylephlebitis begins with thrombophlebitis of the small veins that drain the infected area. The extension of the thrombophlebitis into larger veins leads to septic thrombophlebitis of the mesenteric vein, which can extend further to involve the portal vein [2].

Pylephlebitis is a severe clinical entity with a reported mortality rate of 11%–32% [3]. The clinical manifestation is usually confusing. The patient may be asymptomatic, exhibit minimal symptoms related to the primary infection site, or have an acute abdomen. Signs and symptoms depend on the location and extent of the thrombus and underlying disease. Liver involvement can cause hepatomegaly, elevation of liver enzyme levels, abscesses, and jaundice. An associated hypercoagulable state is present in many patients with pylephlebitis [4].

Imaging findings are related to venous involvement, the primary source of infection, and intrahepatic anomalies. Doppler ultrasound examination is highly sensitive in confirming portal vein thrombosis and is mostly useful in the
follow-up of these cases [2].

CT scanning may be less operator-dependent than ultrasonography.

Considering the possibility of pylephlebitis, the CT acquisition protocol should include the entire abdomen and pelvis with intravenous contrast enhancement unless contraindicated. CT scanning allows characterizing pylephlebitis since it detects the primary source of infection, the portal venous thrombus and presence of intravascular gas, and possible complications such as transient parenchymal attenuation differences, hepatic abscesses [5].

The current treatment approach is based on aggressive broad-spectrum antibiotic administration (blood cultures are strongly indicated), with immediate surgical removal or drainage of the septic focus (in the present case appendectomy) and anticoagulation therapy. Anticoagulants are administered in an effort to recanalise the thrombotic vein and reduce the possibility of septic embolisation and abscess formation in the liver [6]. In cases where bowel ischaemia encounters as complication, a thrombectomy could be indicated.

Pylephlebitis is a rare complication of acute appendicitis with a high mortality rate. Early diagnosis allows prompt treatment.

**Differential Diagnosis List:** Septic pylephlebitis (complication of acute appendicitis), Uncomplicated acute appendicitis, Aseptic portal vein thrombosis

**Final Diagnosis:** Septic pylephlebitis (complication of acute appendicitis)

**References:**


**Figure 1**

*Description:* Abdomen CT shows an inflammation of the appendix with marked periappendiceal infiltrates (red arrow) *Origin:* departement of radiology.CHU ibn sina, RABAT
Figure 2

Description: Abdomen CT shows a non-occlusive thrombus within the portal vein (red arrow) Origin: departement of radiology, CHU ibn sina, Rabat, Morroco

Description: Abdomen CT shows a non-occlusive thrombus within the portal vein (red arrow) Origin: departement of radiology, CHU ibn sina, Rabat, Morroco