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Letters to the Editor

Pylephlebitis as a complication of acute appendicitis

Key words: Pylephlebitis. Acute appendicitis. Thrombosis.

Dear Editor,

Pylephlebitis is defined as septic thrombophlebitis of the portal venous system. It usually occurs due to secondary infection in the region drained into the portal system.

Early diagnosis and treatment decreased the mortality rate drastically, even though the mortality rate is 30-50% due to a delay in diagnosis from its atypical clinical findings and low index of suspicion.

We describe a case of acute appendicitis complicated with pylephlebitis and superior mesenteric vein thrombosis successfully treated with surgical and medical therapy.

Case report

A 17-year-old boy with history of 8 days of abdominal pain, fever and diarrhea. Physical examination showed diffuse abdominal pain without tenderness or rebound tenderness. *Laboratory values:* 16,400 leukocytes/mm^3 with neutrophilia. Chest, abdominal X-ray and ultrasonographic examination of the abdomen were normal. With the diagnosis of acute gastroenteritis the patient is discharged.

One week later, the patient presented fever, upper right quadrant abdominal pain, vomiting, diarrhea and jaundice. *Laboratory values:* 9,000 leukocytes/mm^3, hemoglobin 12.7 g/dl, platelets 83,000/µl, aspartate aminotransferase 423 UI/L, alanine aminotransferase 312 UI/L, total bilirrubin 4.40 mg/dl, direct bilirrubin 3.70 mg/dl and rate of prothrombin 48%. Assays for hepatitis A, B, C, EBV and CMV were negative. The blood culture grew gram-negative rods *(E. coli, B. fragilis)* and gram-positive cocci *(S. species)*. Empirical intravenous amoxicillin/clavulanate were initiated but must be replaced by ciprofloxacin and metronidazole 16 hours later due to the occurrence of an unknown allergy.

Abdominal CT (Fig. 1A) showed a swollen, air-filled appendix with surrounding inflammation related to acute appendicitis. Hypodensity was seen in the superior mesenteric vein and its branches suggesting venous thrombosis. There also were multiple hypodense hepatic areas with permeability of the portal and splenic veins.

At laparotomy, a gangrenous appendix with local peritonitis was found without other intraabdominal pathological findings. Appendectomy was performed.

Postoperative treatment consisted on parenteral nutrition, broad-spectrum antibiotic (Imipenem 1 g/8 h/4 weeks) and anticoagulation therapy (Nadroparine 0.8 cc/12 h/5 days and lat-

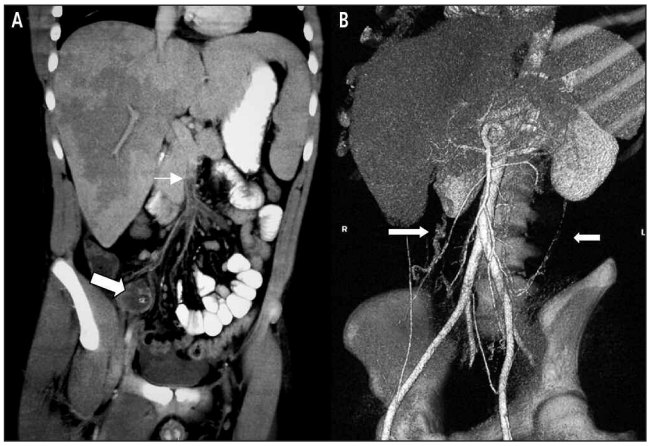

Fig. 1. A. CT shows an inflammatory mass in the right lower abdominal quadrant (large arrow) and thrombosis of the superior mesenteric vein (small arrow). B. Vascular reconstruction showing collateral circulation through colic veins (arrows).

er/24 hours) continued until four months with Acenocumarol. Hypercoagulability state was discarded.

One week after surgery CT showed persistence of superior mesenteric vein thrombosis with progression to partial thrombosis of intrahepatic branches of the portal vein to segments II and III, without intrahepatic abscesses.

Two months after discharged, liver function tests were normalized and follow-up CT showed collateral circulation through colic veins (Fig. 1B).

Discussion

Pylephlebitis usually occurs due to secondary infection in the region drained into the portal system, regarded as the most frequent cause diverticulitis (1).

The signs and symptoms of pylephlebitis can be minimal and nonspecific. Fever and abdominal pain are the initial clinical manifestations along with leukocytosis. In advanced cases appears liver dysfunction and jaundice.

Bacteriemia is present in 50-80% of patients and *B. fragilis, E. coli* and *Streptococcus* are the most common microorganisms isolated (1,2).

CT scan is the most reliable initial diagnostic choice. CT could detect the primary source of infection, involvement of the mesenteric and intrahepatic branches and intrahepatic abnormalities. The early hepatic abnormalities consists of zones of low attenuation, secondary to decreased intrahepatic blood flow, that could develop into hepatic abscesses. Although none of the individual radiographic findings should be considered pathognomonic, the association of several findings in the clinical setting of sepsis and nonspecific abdominal symptoms is diagnostic of pylephlebitis (3).

The reported mortality rate of up to 30-50% proves the importance of early recognition and early treatment (4).

The mainstay of treatment consists on broad spectrum antibiotic therapy that targets gram negative bacilli and anaerobes during 4 weeks. Patients with hepatic abscesses should receive at least 6 weeks of antibiotic therapy (5,6).

In most cases, immediate surgical intervention is necessary though there are reported cases of surgical treatment delayed 3 months with great outcome (7).

The role of anticoagulation in the treatment of pylephlebitis remains controversial because complications are present in 20% of patients due to a systematic use. It could be indicated in patients with hypercoagulable states or in superior or inferior mesenteric vein thrombosis for prevention of intestinal ischemia and to prevent thrombus propagation or in the presence of persistent fever (1,2,5,6).

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

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