


Rare fatal complication of appendicitis  
in a child: pylephlebitisSaloua Ammar <sup>1,2</sup>, Hana Benameur,<sup>1,2</sup> Mahdi Ben Dhaou,<sup>1,2</sup> Emna Daoud,<sup>2,3</sup>  
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An 11-year-old boy without any medical history presented with a 4-day history of vomiting and abdominal pain, followed by appearance of fever and decreased energy. Physical examination showed a blood pressure of 90/60 mm Hg, a pulse rate of 120/min, a temperature of 40°C, oxygen saturation of 93% on air, and diffuse abdominal contracture. Laboratory values showed hyperleukocytosis (24,000/mm<sup>3</sup>), hemoglobin of 15 g/L, prothrombin time of 48%, and creatinine of 127 mmol/L. An abdominal computed tomography (CT) showed a thick perforated appendix, an abundant intraperitoneal effusion, and pneumoperitoneum. There were air bubbles in the Wirsung canal, parietal pneumatosis of the duodenum and the jejunum, and hepatic portal venous gas (figure 1). Thromboses of the mesenteric vein, splenic vein, and portal vein were suspected due to the CT scan findings. A contrast enhancement study was not performed because of the elevated creatinine. The boy was admitted to the department of pediatric surgery for resuscitation and surgery. He was perfused, scoped and given antibiotic therapy. Anticoagulation was not introduced in front of the low prothrombin time level. Parents were informed about the gravity of the situation. In fact, the patient presented with complicated appendicitis accompanied by infective phlebitis. A median laparotomy was performed. There was a purulent effusion. Gangrenous changes and necrosis on the colon and small bowel wall and extensive adhesions and inflammation were found (figure 2). The extensive mesenteric infarction was not amenable to surgical management. The appendix was perforated. The patient had severe sepsis and was shocked. Vasoactive drugs were introduced during surgery. The outcome was marked by the death of the patient. Pathologic examination of the appendix concluded with a perforated appendicitis and confirmed bowel necrosis as well as mesenteric venous thrombosis.



**Figure 1** CT showed intraperitoneal effusion and pneumoperitoneum and parietal pneumatosis.

Pylephlebitis is a septic thrombophlebitis of the portal vein or of any of its branches that is associated with multiple suppurative abdominal infections.<sup>1–3</sup> The most common etiologies of pylephlebitis are ascending acute infectious diseases of an abdominal organ, such as pancreatic necrosis, appendicitis, acute cholecystitis, acute or perforated diverticulitis.<sup>2</sup> The initial septic focus is often silent. Appendicitis accounts for about 10% of all cases presenting with pylephlebitis.<sup>4</sup> It is a rare complication with an incidence of 0.05% for acute appendicitis.<sup>5</sup> The diagnosis is usually difficult and delayed. The mortality rate remains high (11%–32%).<sup>2,4,5</sup> The initial



**Figure 2** Peri-operative view showing gangrenous changes and necrosis on the colon and small bowel wall with the extensive mesenteric infarction.



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manifestations of venous mesenteric thrombosis include high fever, chills, malaise, right upper quadrant pain, and tenderness. These are easy to be confused with manifestations of the primary diseases and may lead to low index of suspicion.<sup>6</sup> Contrast-enhanced CT is an effective diagnostic examination. Pylephlebitis manifests as enlargement and occlusion of the portal vein and/or its branches with intravascular thrombus. As few as 5% of cases may lead to bowel necrosis,<sup>4</sup> as seen in our case. Once thrombophlebitis of the portal and mesenteric veins is suspected, appropriate treatment should be initiated as soon as possible. Management of this condition is based on the surgical control of the abdominal septic focus and the treatment with broad-spectrum antibiotics and anticoagulation, which may decrease the fatality rate of pylephlebitis.<sup>1</sup> A recent study reported a more favorable evolution in patients who received early anticoagulation compared with those who received antibiotics only. In fact, antibiotics associated with anticoagulants seem to accelerate the process of recanalization.<sup>7</sup> In shocked patients with an acute abdomen, emergency imaging, if possible by contrast enhanced CT scan, is warranted to guide early treatment, as with pylephlebitis.

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