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Radiology

Septic Portal Vein Thrombosis Secondary to Acute Pancreatitis Revealing Infective Endocarditis in a Child: A Case Report

I. Zouidine[1*], Y. Bouktib[1], A. El Hajjami[1], B. Boutakioute[1], M. Ouali Idrissi[1], N.Cherif Idrissi Guanouni[1]

[1]Radiology Department, ARRAZI Hospital, Mohammed VI University Hospital, FMPM, Cadi Ayad University, Marrakech, Morocco

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***Corresponding author:** I. Zouidine
Radiology Department, ARRAZI Hospital, Mohammed VI University Hospital, FMPM, Cadi Ayad University, Marrakech, Morocco

Abstract | **Case Report**

Background: Acute pancreatitis in pediatric patients is uncommon, and infectious vascular complications such as pylephlebitis are exceptionally rare. When associated with pulmonary septic emboli, an underlying systemic infectious source should be suspected. We report a rare case in which acute pancreatitis complicated by pylephlebitis led to the etiological diagnosis of infective endocarditis in a child, highlighting the pivotal role of imaging in detecting multisystem involvement.

Keywords: Pediatric acute pancreatitis; Pylephlebitis; Portal vein thrombosis; Pulmonary septic emboli; Infective endocarditis; Computed tomography.

INTRODUCTION

Acute pancreatitis (AP) is a sudden inflammatory disorder of the pancreas that may lead to both local and systemic complications [1].

Pylephlebitis is a serious infectious condition involving suppurative thrombosis of the portal venous system, arising as a complication of intra-abdominal septic processes and associated with substantial morbidity and mortality [2].

The association between acute pancreatitis and pylephlebitis is rare but clinically significant. Inflammatory and infectious pancreatic processes may induce endothelial injury within the portal venous system, promoting septic thrombosis [3].

CASE PRESENTATION

A 14-year-old child was admitted to the emergency department with severe epigastric pain and high-grade fever reaching 40 °C. Laboratory investigations revealed elevated serum lipase (212 U/L), increased C-reactive protein (155 mg/L), leukocytosis (20,000/mm³), and impaired renal function with elevated creatinine (16.5 mg/L).

Contrast-enhanced abdominal computed tomography demonstrated acute pancreatitis with portal venous thrombosis consistent with pylephlebitis, a moderate peritoneal effusion, perfusion abnormalities in the liver, and no evidence of biliary lithiasis. Thoracic sections obtained during the same examination revealed two peripheral pulmonary nodules suggestive of septic emboli.

During hospitalization, an etiological workup was undertaken. Transthoracic echocardiography demonstrated valvular vegetations, and blood cultures grew Staphylococcus aureus, confirming the diagnosis of infective endocarditis. Despite appropriate antibiotic therapy and intensive supportive care, the patient developed severe complications and eventually died.

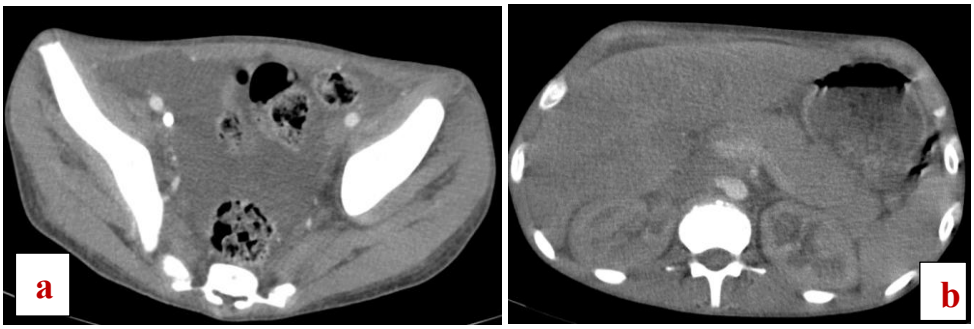

Figure 1: Axial contrast-enhanced abdominal CT showing pancreatic enlargement, with the body measuring 37 mm (a), and a moderate peritoneal effusion (b)

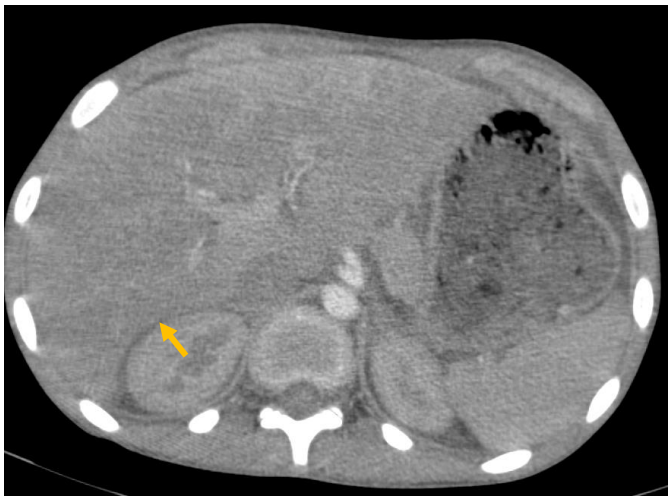

Figure 2: Axial contrast-enhanced abdominal CT showing thrombosis of the right portal vein (arrow), consistent with pylephlebitis

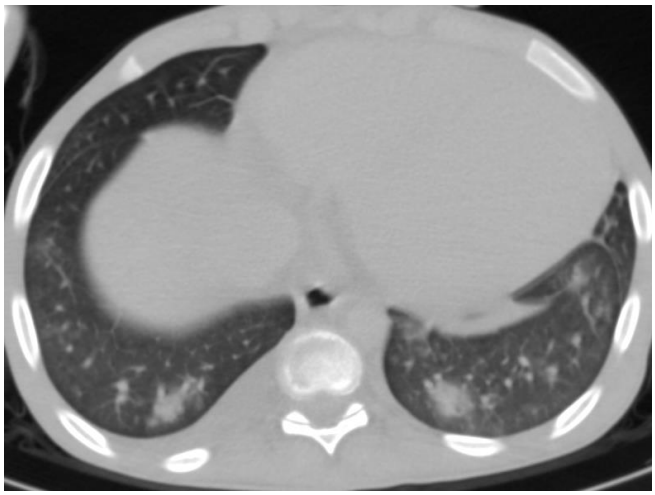

Figure 3: Axial chest CT, lung window, demonstrating two bilateral posterior basal nodular consolidations consistent with septic emboli

DISCUSSION

Acute pancreatitis (AP) is an inflammatory condition of the pancreas that is self-limiting and mild in approximately 80% of cases, whereas up to 20% of patients may experience severe complications and significant mortality [4].

Acute pancreatitis is diagnosed when at least two of the following three criteria are met [1-5] 1 : upper abdominal pain indicative of pancreatitis, after excluding other causes such as gastric or duodenal ulcer perforation, aortic dissection, or myocardial infarction; 2 : serum amylase or lipase levels elevated to more than three times the upper normal limit; 3 : imaging findings from ultrasonography, computed tomography (CT), or

magnetic resonance imaging (MRI) consistent with AP [1-5].

AP has multiple etiologies, which can be determined in approximately 75–85% of patients. In developed countries, the most common causes are obstruction of the common bile duct by stones (38%) and alcohol consumption (36%) [6-7].

While various infectious agents have been associated with acute pancreatitis, direct isolation of a microorganism from the pancreas has never been documented. Nevertheless, viral or bacterial infections and parasitic infestations have been implicated [8]. In the present case, the pancreatitis occurred in the context of infective endocarditis.

Acute pancreatitis can lead to various local and systemic complications. Locally, it may cause peripancreatic collections, pseudocysts, and pancreatic necrosis [1].

Vascular complications, although less common, are clinically significant. Thrombosis of the splanchnic veins—including the portal, splenic, and superior mesenteric veins—has been reported, particularly in necrotizing pancreatitis, and may result in segmental portal hypertension and variceal formation [9]. Rarely, portal vein thrombosis may become septic (pylephlebitis) [10].

Early diagnosis of pylephlebitis relies on imaging. Contrast-enhanced CT is preferred for detecting portal or splanchnic vein thrombi and associated abscesses [9]. Doppler ultrasound can assess venous patency quickly but may miss small thrombi [11]. MRI/MR venography is useful for detailed visualization and when CT contrast is contraindicated [10].

Prompt imaging guides anticoagulation and antibiotic therapy, reducing complications.

CONCLUSION

This case describes an exceptional pediatric presentation in which acute pancreatitis complicated by pylephlebitis served as the initial radiological manifestation of infective endocarditis. Cross-sectional imaging played a crucial role in raising diagnostic suspicion, guiding further investigations, and revealing systemic septic dissemination.

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