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Acute Pancreatitis Complicated with Portal Vein Thrombosis: A Case Report and Literature Review

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Abstract **Case Report**

***Objective*:** Rare co-existance of disease or pathology. ***Background*:** Portal vein thrombosis is an unusual clinical condition due to multiple etiological and morbidity factors. In some cases, Portal vein thrombosis remains undiagnosed and discovered incidentally during aregular check up for a known cause. ***Case Report*:** we report a rare case of portal vein thrombosis associated with acute pancreatitis of 58-year-old man. ***Conclusions*:** Although vascular complications such as Portal vein thrombosis after pancreatitis are exceptional. It should be expected in any patient with pancreatitis. These complications, if diagnosed and treated early, will significantly reduce morbidity and mortality.

Keywords: Portal vein thrombosis (PVT), pathology, Acute pancreatitis (AP), contrast-enhanced computed tomography.

BACKGROUND

Acute pancreatitis (AP) is an acute inflammatory disease of the pancreas characterized by local or systemic complications [1]. PVT is a rare complication, which is often an incidental finding on contrast-enhanced computed tomography (CECT) which is performed to assess symptoms or local complications, involving the portal vein (PV), the splenic vein (SV), and the superior mesenteric vein (SMV) either alone or in combination [2]. The use of Doppler ultrasound and computed tomography has improved the rate of radiological diagnosis of PVT [3], but PVT remains undiagnosed in some cases and is discovered incidentally during routine examination for various reasons. other. In such cases, the specific underlying medical condition associated with DVT dictates the initial clinical presentation, time course, and prognosis [4].

Patient: 60 years old, male.

Final Diagnosis: Acute cholecystitis complicated with portal vein thrombosis.

Symptoms: Epigastralgia, vomiting.

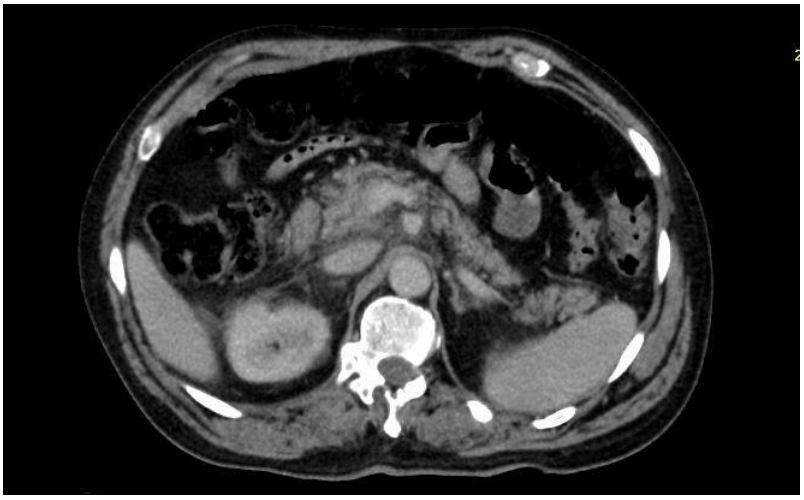
Clinical Procedure: Abdominal CT and ultrasound.

Specialty: Emergency department, gastroenterology hepatology, Radiology department.

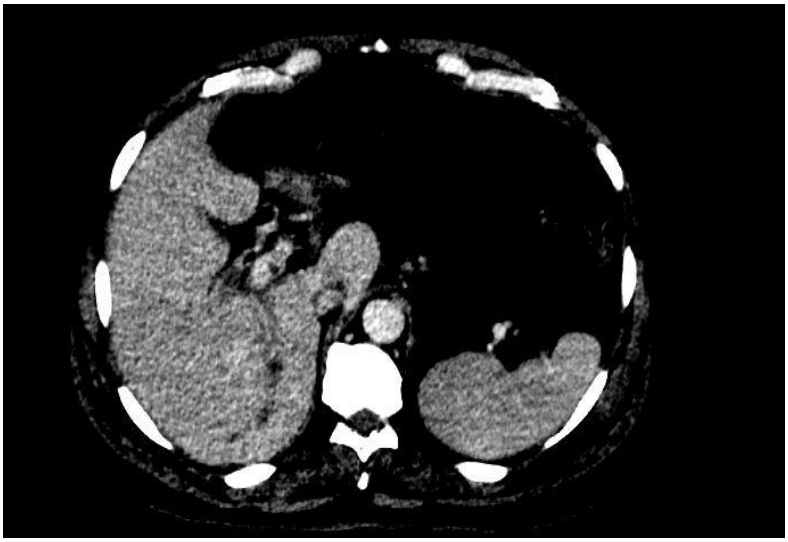
CASE REPORT

A 58-year-old male was admitted in the emergency room with severe epigastric pain with radiation to the back, nausea, anorexia, jaundice, 38.5 ºC fever, headache and myalgia. Two weeks before, mild symptoms had begun and, in the meanwhile, he was treated with diclofenac and omeprazole with partial response. Four days before admission, he presented significant aggravation of symptoms with epigastric pain associated with abdominal distension, nausea, vomit. He had no previous similar episodes, hepatic disease, gallstone, pancreatitis family history, recent travel, trauma, drug abuse, alcoholism or surgery. Examination revealed a male with, pallor, and epigastric abdominal pain during superficial palpation. His liver was enlarged, exceeding costal margin by 2 cm. Laboratory investigations showed (Reference ranges of laboratory data are included in parentheses): Hct 33.8% (36.7-46.4%), Hb 11.5 g/dL (12.5-15.7 g/dL), and total leukocyte count of 9000/ uL (band neutrophils 2%, total neutrophils 51%, lymphocytes 38%, monocytes 9%, eosinophils 2%), platelets 352,000/µL (140,000-400,000/µL), lipase 600 IU/ (INR: 1) (< 2.0), Abdominal ultrasonography showed features of acute cholecystitis and right portal vein thrombosis. Moreover, the CT study confirmed the diagnosis of PVT (Figures 1 & 2). The patient was managed conservatively with intravenous antibiotics and anticoagulation. Within few days, the patient started recovering with normalization of the liver

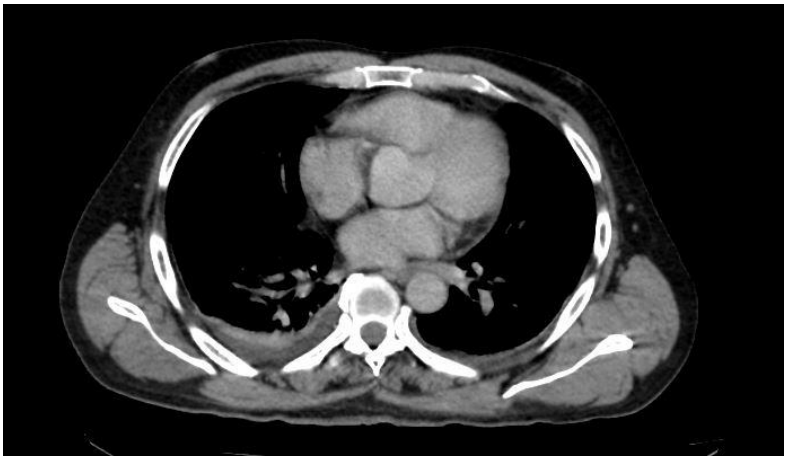
function profile and subsequently, he is still under clinically and biologically observation.



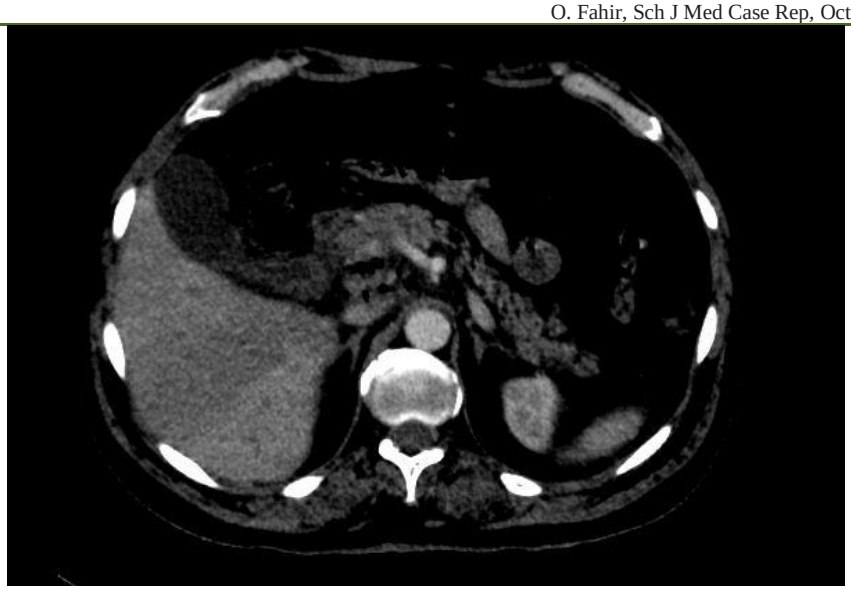
CT shows diffuse increased volume of the pancreas, with peripancreatic inflammatory changes associated with increased adipose tissue density and laminar liquid in the mesenteric root and both anterior pararenal spaces



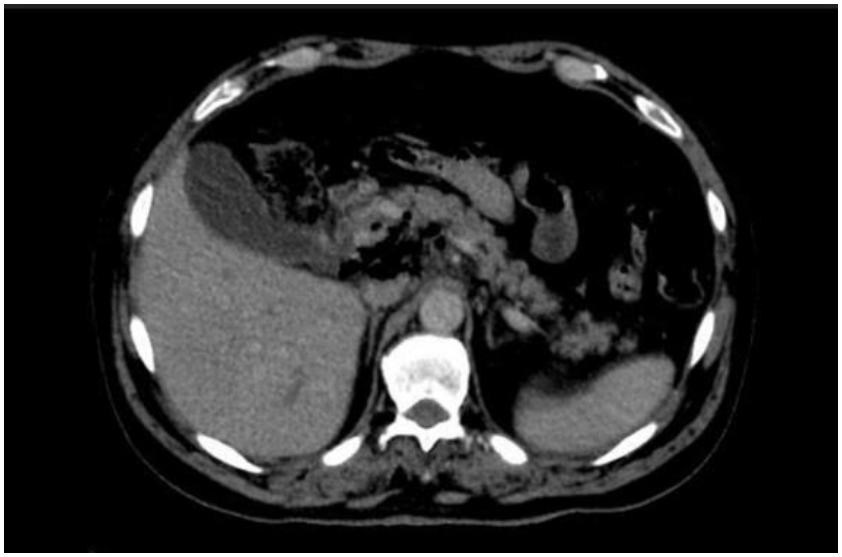
The portal vein (with its right and left main branches) with luminal thrombosis with mild enhancement of portal venous wall



Moderate bilateral pleural effusions



Geographic hepatic perfusion abnormality in keeping with right lobe of liver infarction with portal vein thrombus (Arrow)



Retrocephalic necrosis in the retroportal space heterodense, seat of air bubbles, fusing at the level of the omentum (circle)

DISCUSSION

The present case report describes a rare case of portal vein thrombosis (PVT) secondary to acute pancreatitis. The association of acute pancreatitis with PVT is considered relatively rare and is usually presented as case series and reports [5]. The pathogenesis of PVT is multifactorial and is mainly associated with hepatic or pancreatic malignancies, with an overall frequency of 21–24% [6]. Symptoms of PVT complicating AP always depend on the formation of clot, the site and the extent of the thrombosis; along with the for- mation of the collateral circulation. It is a chal- lenge for clinicians to determine whether abdominal pain is caused by a thrombus or AP progression. In a few patients clinical presentation is severe with sudden-onset of abdominal pain, intestinal necrosis, perforation, peritonitis, shock and even death from multiorgan failure [7]. In our present study, the time period from onset of symptom to confirmation (by CECT) of thrombosis was 6 days, thus an average of 10 days, which was consistent with the literature reports, suggesting that CECT should be performed about 10 days after the onset of symptom. Laboratory tests are of limited utility in the diagnosis of PVT; diagnosis is principally achieved via CDUS, CECT, and magnetic resonance imaging (MRI) [8-10]. Contrast enhanced computed tomography is one of the most common radiological imaging techniques used to assess the extent of pancreatic necrosis, and to evaluate vascular structures, the bowel wall, and the adjacent mesentery. The sensitivity attains at least 90% [9, 10]. No active intervention is required if the patient is hemodynamically stable; these patients can be kept under close clinical and sonographic monitoring. Conservative approach was employed by Mujtaba *et al*.,

in a hemodynamically stable patient of acute pancreatitis (with crohn's disease) who developed SSR following SV thrombosis [12], Rypens *et al*., [11]suggested a wait and watch policy since pancreatitis associated splenic complications may potentially regress over time. On the contrary, surgical intervention is warranted if the patient has precipitous drop in blood pressure or develops signs of peritonitis [12].

CONCLUSION

Although vascular complications such as Portal vein thrombosis after pancreatitis are exceptional. It should be expected in any patient with pancreatitis. Moreover, initial diagnosis based on Doppler ultrasonography and CT scan is possible only if the surgeons are familiar with this uncommon condition. These complications, if diagnosed and treated early, will significantly reduce morbidity and mortality.

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Conflicts of interests: The authors have no conflicts of interests and no financial issues to disclose.

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