

Isolated internal jugular and subclavian vein thrombosis: A rare complication of pancreatitis — A case report

Qurrat Al Ain Atif, Adel Hamed

Abstract

Splanchnic vein thromboses are well recognized vascular complications of acute as well as chronic pancreatitis. Extra splanchnic thromboses have rarely been reported. One such case of a 41-year-old Pakistani male patient who developed acute alcoholic pancreatitis is presented. On further workup he was found to have bilateral internal jugular and subclavian vein thrombosis with patent splanchnic veins. Pancreatitis generally creates a procoagulant state in the body. Moreover, the inflammatory process itself along with compression from peri-pancreatic fluid collections cause injury to the nearby vessels resulting in vascular complications. Whether venous or arterial, vascular complications of acute or chronic pancreatitis have fatal consequences. Extra splanchnic venous thromboses do occur and should be sought for, if symptoms indicate. Internal jugular and subclavian vein thrombosis can lead to pulmonary embolism and mortality. Hence appropriate timely diagnosis and effective treatment should be commenced to avoid any untoward consequences.

Keywords: Pancreatitis, Splanchnic vein thrombosis, Extra splanchnic vein thrombosis, Pancreatic pseudocyst.

DOI: <https://doi.org/10.47391/JPMA.1493>

Introduction

Splanchnic vein thromboses including splenic vein, portal vein and superior mesenteric vein, alone or in combination, are well recognized vascular complications of acute and chronic pancreatitis.^{1,2} Extra splanchnic thromboses are a rare event, of which isolated inferior vena cava thrombosis,^{1,3} inferior vena cava with renal vein thrombosis⁴ and thrombosis of superior and inferior vena cavae, internal jugular vein, subclavian vein and common iliac veins have been reported with normal splanchnic circulation.² A thorough search of the literature showed that isolated internal jugular and subclavian vein thrombosis has (have) never been encountered as a complication of acute pancreatitis, which is described below.

.....
Department of General Surgery, Brighton and Sussex University Hospital, Brighton, UK.

Correspondence: Qurrat Al Ain Atif. Email: atifanna@gmail.com

Case Presentation

A 41-year-old Pakistani male patient presented to the surgical outpatient department with epigastric pain radiating to the back for the past 2 days. Pain was accompanied with vomiting and the patient reported to be anorexic. Furthermore, the patient had a history of alcohol consumption for the past 10 years. During his stay he developed periodic headache.

Clinically, the patient was pale and tachycardic. His neck veins were distended. Abdomen was tender in the epigastrium. He also had bilateral upper limb swelling.

Blood workup revealed white cell count of 12500/ μ l, 87% neutrophils. His serum amylase was 2460 U/l and lipase was 975 U/l. Liver function tests were slightly deranged, Bilirubin 1.6 mg/dl, ALT 65 U/l, ALP 153 U/l.

CT abdomen showed acute pancreatitis with a CT severity index of 5. Splanchnic veins were found to be patent. Colour Doppler of neck and upper limbs showed bilateral internal jugular and subclavian vein thromboses with sluggish flow in axillary and brachial veins (Figures-1-4).

After the patient was diagnosed with acute pancreatitis with extra splanchnic thromboses, he was started on supportive treatment as nil by mouth, nasogastric aspiration, intravenous fluids, analgesics, antibiotics and anticoagulation therapy with low molecular weight heparin. LMWH was started with a loading dose of 5000 IU subcutaneously stat then maintained at 1000IU/hr and was switched later to oral anticoagulation with 5mg warfarin.

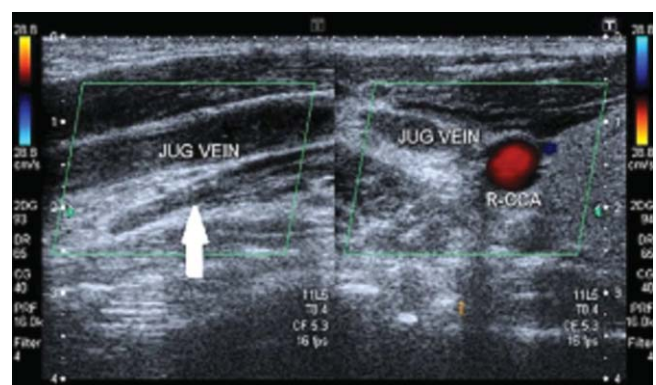


Figure-1: Right internal jugular vein showing thrombus (white arrow).

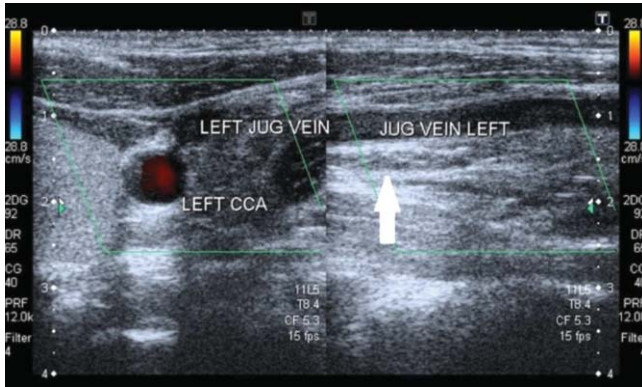


Figure-2: Left internal jugular vein showing thrombus (white arrow).

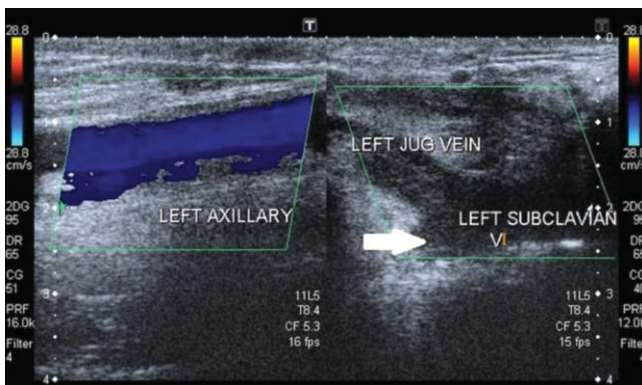


Figure-3: Left subclavian vein showing thrombus (white arrow).

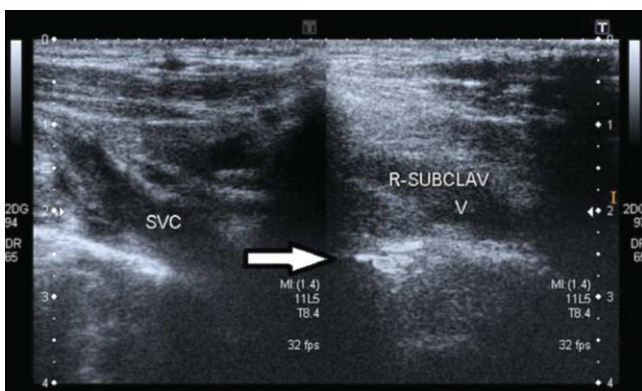


Figure-4: Right subclavian vein showing thrombus (white arrow).

The patient's symptoms improved and he was discharged on request as he refused any further treatment.

Discussion

Acute pancreatitis is usually a self-limiting disease.⁵ However, vascular complications may develop in about 25% of the patients.^{5,6} These include haemorrhage into a pseudocyst, erosion of upper gastrointestinal arteries, portal venous thrombosis, development of varices or pseudoaneurysm and rupture of pseudoaneurysm.⁶ Vascular complications occur in 25% of the patients.⁷

Splanchnic vein thrombosis is seen in a patient with acute necrotizing pancreatitis and is associated with a poor prognosis.^{8,9} Its frequency varies from 1-24% in various studies.¹⁰ It usually involves the splenic vein (10-40%),⁵ portal vein or superior mesenteric vein, in combination or alone.^{1,2} Postulated mechanism suggests a direct inflammatory process by release of exocrine proteolytic and lipolytic enzymes from the pancreas,¹¹ hypercoagulable state, extrinsic compression by oedematous gland, peri-pancreatic fluid collection or inflammatory vasculitis.²

Extra-splanchnic venous thromboses are quite rare.¹² Apart from that isolated, inferior vena cava thrombosis as a complication of pancreatitis has been reported by a few authors.^{1,3} Inferior vena cava and renal vein thrombosis were documented by Ma Sk et al.⁴ Isolated renal vein thrombosis has been reported by Gansbeke and Struyven.⁷ Pulmonary embolism is also a rare but recognized vascular complication of pancreatitis.^{13,14} One rare case reported superior vena cava, subclavian vein, internal jugular vein and inferior vena cava thromboses with normal splanchnic veins.²

Isolated bilateral internal jugular and subclavian vein thromboses have never been reported before. The underlying mechanism postulated is inflammatory vasculitis and a generalized prothrombotic state associated with pancreatitis,^{4,15} which was valid in our patient.

As published and accepted,^{1,6,16} the patient was treated with anticoagulants although the response could not be assessed since the patient was lost to follow up.

Conclusion

Extra-splanchnic thrombosis is a rare but potentially fatal complication of pancreatitis which needs timely diagnosis and prompt treatment in order to reduce associated mortality. As the case with our patient who had unusual symptoms of headache and bilateral upper limb swelling, further investigation found out that he had extra-splanchnic thromboses related to pancreatitis. The patient was started on anticoagulation therapy without delay. Unfortunately, the patient was lost to follow up, so long term implications could not be assessed.

Limitations

Firstly, computerized tomography (CT) scans of the abdomen and pelvis were not available. Secondly, patient was lost to follow up so long term outcome could not be determined.

Consent: Written informed consent was obtained from

the patient for publication of this manuscript and any accompanying images.

Disclaimer: Case report is from Pakistan Institute Medical Sciences, Islamabad, Pakistan.

Conflict of Interest: None to declare.

Funding Sources: None to declare.

References

1. Antony SJ, Loomis T, Brumble L, Hannis MD. Inferior vena cava thrombosis associated with acute pancreatitis: An unusual vascular complication. *Angiology*. 1994; 45:1009-14.
2. Parikh H, Shukla A, Aswani Y, Bhatia S. Multiple extrasplanchnic venous thromboses: A rare complication of pancreatitis. A case report. *JOP*. 2012; 13:317-9.
3. Stringer MD, Michelle M, McIrvine AJ. Inferior vena cava thrombosis complicating acute pancreatitis. Case report. *Acta Chir Scand*. 1988; 154:161-3.
4. Ma SK, Kim SW, Kim NH, Cjoi KC. Renal vein and inferior vena cava thrombosis associated with acute pancreatitis. *Nephron*. 2002; 92:475-7.
5. Bernades P, Baetz A, Levy P, Belgiti J, Menu Y, Fekete F. Splenic and portal venous obstruction in chronic pancreatitis. A prospective longitudinal study of a medical-surgical series of 286 patients. *Dig Dis Si*. 1992; 37:340-6.
6. Kumar S, Sahu SK, Ray JP, Jain S, Mittal V, Nandra K, et al. A case of acute necrotizing pancreatitis complicated by portal vein thrombosis. *J Surg*. 2014; 10:57.
7. Huda T, Mohan A, Parwez MM, Pandya B. An Unusual Combination of Three Rare Complications: Pleuro-Pancreatic Fistula, Chylous Ascites, and Renal Vein Thrombosis, in a Case of Acute Severe Pancreatitis. *Surg J (NY)*. 2019; 5:e188-e91.
8. Marc GH Besselink. Splanchnic vein thrombosis complicating severe acute pancreatitis. *HPB (Oxford)*. 2011; 13:831-2.
9. Zhou J, Ke L, Tong Z, Li G, Li W, Li N, et al. Risk factors and outcome of splanchnic venous thrombosis in patients with necrotizing acute pancreatitis. *Thromb Res*. 2015; 135:68-72.
10. Nadkarni NA, Khanna S, Vege SS. Splanchnic venous thrombosis and pancreatitis. *Pancreas*. 2013; 42:924-31.
11. Barge JU, Lopera JE. Vascular complications of pancreatitis: Role of interventional therapy. *Korean J Radiol*. 2012; 13:S45-S55.
12. Van Gansbeke D, Struyven J. Renal vein thrombosis in a case of pancreatitis. *J Belge Radiol*. 1985; 68:468-9.
13. Ohta H, Hachiya T. A case of inferior vena cava thrombosis and pulmonary embolism secondary to acute exacerbation of chronic pancreatitis: a rare finding in radionuclide venography. *Ann Nucl Med*. 2002; 16:147-9.
14. Zhan Q, Zhang QX, Tan XP, Wang WZ, He CH, Xu L, et al. Pulmonary embolism with acute pancreatitis: A case report and literature review. *World J Gastroenterol*. 2012; 18:583-6.
15. Gonzalez HJ, Sahay SJ, Samadi B, Davidson BR, Rahman SH. Splanchnic vein thrombosis in severe acute pancreatitis: A 2-year, single-institution experience. *HPB (Oxford)*. 2011; 13:860-4.
16. Alvi AR, Bibi S, ur Rehman Z, Niazi SK. Acute mesenteric, portal and inferior vena cava (IVC) venous thrombosis: Optimal outcome achieved with anticoagulation. *J Pak Med Assoc*. 2010; 60:397-9.