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Case Report

A case of recanalised umbilical vein thrombosis

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ABSTRACT

A case of a 55 year old woman with recanalised umbilical vein thrombosis in a patient with gastritis who does not have liver cirrhosis or portal hypertension. This patient had presented with mild nausea and acute onset of epigastric pain. CT abdomen and pelvis had demonstrated this finding of a recanalised umbilical vein with thrombus formation, along with some thickening of the gastric antrum with mild surrounding fat stranding suggestive of gastritis. The patient underwent an inpatient gastroscopy to rule out malignancy in context of these findings, which only demonstrated some healed gastric ulcers. Histopathology report described chronic gastritis and intestinal metaplasia, no evidence of established malignancy. This is an unusual case that highlights that recanalisation of the umbilical vein could occur without portal hypertension. This may have been a spontaneous event or could have been caused by local inflammation such as gastritis.

Keywords: Umbilical vein recanalisation, Thrombosis, CT abdomen

INTRODUCTION

The umbilical vein is an important foetal vessel in the umbilical cord that supplies the foetus with oxygenated blood from the placenta.[1] This usually closes post birth by day 2-5, and the remnant forms ligamentum teres hepatis or the round ligament of the liver.[1,2] In some cases, this vessel can recanalise due to increased pressure from portal hypertension often due to liver cirrhosis, or more rarely in superior vena cava obstruction or pancreatitis.[3] We report a case of spontaneous umbilical vein recanalisation with formation of symptomatic thrombus within the vein, in a non-cirrhotic patient with the only related finding being gastritis as a potential inflammatory cause for this condition.

CASE REPORT

A 55-year-old woman presents due to 1 day of severe constant epigastric pain. The patient had some mild nausea that quickly resolved by itself and no vomiting associated with this. The patient did not have any other associated symptoms. Patient's medical history includes a previous transient ischaemic attack one year prior which patient is taking daily low-dose aspirin for. The patient also has gastric reflux which patient takes a proton pump inhibitor for when required. The patient previously had a partial hysterectomy for heavy menstrual periods, with no other surgeries performed. The patient does not have any history of liver disease and only drinks small volumes of alcohol on social occasions. The patient smokes 20 cigarettes a day.

Investigations

The patient had mildly elevated inflammatory markers, C reactive protein level was 72 mg/l with a normal white cell count. The patient had a CT abdomen and pelvis in portal venous phase that demonstrated thickened hypoattenuating gastric antrum and pyloric canal

measuring up to 13 mm single wall thickness with mild surrounding peripyloric fat stranding. It also demonstrated the recanalised umbilical vein with thrombus in-situ.

This was reviewed again with the radiologist as it was not initially report, with agreement that there is a thrombus in the recanalised umbilical vein, with associated inflammation. There was no previous imaging to compare with, to determine whether there had been flow past that point previously. Given this was found in context of a thickened gastric antrum, there was a need to rule out a malignancy in that area that could have contributed to the formation of the thrombus.

An inpatient upper gastrointestinal pan-endoscopy was performed, the stomach appeared erythematous with multiple areas of healed erosions. There was no active bleeding. There was also erythema of the first part of the duodenum. The gastric antrum biopsy showed mild inactive chronic gastritis, and intestinal metaplasia. The duodenal biopsy showed normal villous architecture with focal borderline increase in intraepithelial lymphocytes.

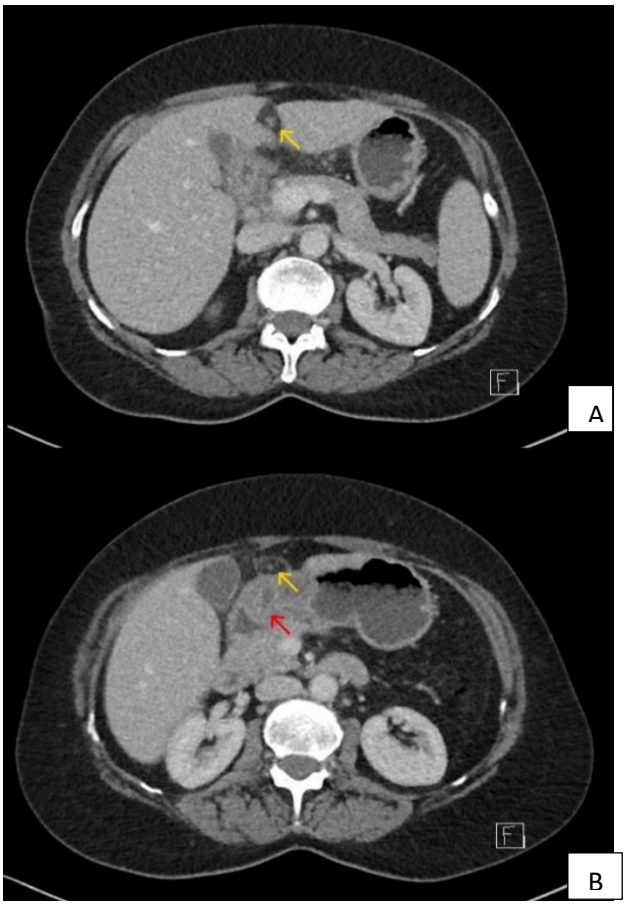


Figure 1 (A and B): CT abdomen pelvis with portal venous contrast; axial slices demonstrating the recanalised umbilical vein with thrombus (yellow arrow), and thickening of the gastrum antrum (red arrow).

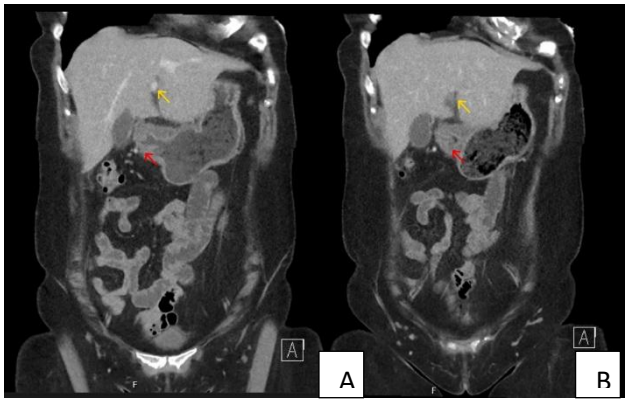


Figure 2 (A and B): CT abdomen pelvis with portal venous contrast; coronal slices demonstrating the recanalised umbilical vein with thrombus (yellow arrow), and thickening of the gastrum antrum (red arrow).

An abdominal ultrasound was performed which showed a normal sized liver, normal main portal vein. There was no detectable vascularity/flow seen within the umbilical vein. This confirmed the CT finding of a thrombus in the recanalised umbilical vein.

Treatment

The patient was commenced on therapeutic anticoagulation with apixaban for 6 months. The patient was also started on pantoprazole 40 mg twice a day for chronic gastritis. The patient was scheduled for a follow-up appointment in the surgical outpatient clinic 4-6 weeks after discharge but unfortunately, the patient did not attend this appointment.

DISCUSSION

Recanalization of the umbilical vein is usually found in patients with liver cirrhosis with portal hypertension.[3,4] This acts as a decompressing collateral and may reduce portal venous pressure.[5] Studies found that up to 20-26% of patients with liver cirrhosis and portal hypertension have a patent umbilical vein.[3,4] This can also occur in patients with portal hypertension due to other causes such as portal vein thrombosis, which may be related to underlying malignant processes.[6] More rarely there can be other causes for this, for example there have been case reports of spontaneous recanalization of the umbilical vein and thrombosis in a non-cirrhotic patients with pancreatitis.[7,8] Recanalisation of the umbilical vein can also occur in patients with superior vena cava obstruction, allowing hepatopedal flow.[9,10]

In this patient the only acute inflammatory process we have identified is the gastritis. The patient had a normal serum lipase level, as well as normal liver function tests, which suggests that the patient did not have pancreatitis or hepatitis. Sometimes portal vein thrombosis can accompany this finding, which fortunately is not the case

in this patient. Treatment of the thrombus would involve a period of anticoagulation. We had recommended a period of 6 months, which other institutions have similarly recommended to their patients as outlined in their case reports.[7,8] Patients should also be worked up for other underlying malignancies or haematological conditions as potential causes. In this case we performed a gastroscopy to ensure the CT changes of the gastric antrum were only inflammatory in nature and not an underlying neoplastic process. If a haematological cause is found to be the precipitant of the thrombosis then patients may need to have long term anticoagulation. This was to be reviewed at future clinical follow up, unfortunately the patient did not attend this.

CONCLUSION

The case highlights the importance of recognising thrombosis of the recanalised umbilical vein as a potential finding on imaging as it is an uncommon condition. It requires anticoagulation as treatment to prevent theoretical extension into the portal venous system. Recognising this pathology may also help direct further investigation of potential other related underlying conditions with as liver cirrhosis, inflammatory conditions such as pancreatitis or gastritis, or a neoplastic process.

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