SHORT REPORT

Portal vein aneurysm: when to operate?

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Introduction

Venous aneurysms are uncommon lesions in the abdomen.\textsuperscript{1,2} Portal vein aneurysm is a rare entity and can be defined as a localized dilatation of the portal vein beyond normal limits.\textsuperscript{3} Although venous abnormalities of the portal system have been thoroughly described in the past,\textsuperscript{4} little is known about their aetiology, pathophysiology, clinical features and management. Their low clinical incidence has obscured their natural history, thus making it difficult to choose the proper method of management.

We describe the case of large saccular portal vein aneurysm which quite possibly arose following damage to the portal vein during a previous cholecystectomy and was treated with aneurysmatomy and intraluminal reconstruction.

Case report

A 58-year-old woman with abdominal pain, nausea and vomiting was admitted to hospital. She had undergone surgery for gallbladder stones 10 years previously. There was no history of jaundice, hematemesis, melena, abdominal inflammation, or trauma. No abdominal mass could be felt. Liver function tests were normal.

An abdominal ultrasound was carried out (Fig. 1). This showed a $5 \times 5 \times 4.5$ cm well-circumscribed anechoic structure at the main trunk of the portal vein which was compressing the inferior vena cava. This was thought most likely to be a portal vein aneurysm and a helical CT was performed to confirm the diagnosis. Enhancement of the anechoic structure with intravenous contrast medium revealed a large saccular portal vein aneurysm located in the main trunk of portal vein (Fig. 2).

In the presence of nonspecific gastrointestinal symptoms and the absence of liver disease it was difficult to decide whether this woman's aneurysm should be observed or surgically corrected. The decision to operate was made on the basis of the old post-cholecystectomy ultrasound findings, which showed a portal vein of normal diameter. It was considered that the aneurysm was unstable, expanding and there was a considerable risk of thrombosis or rupture.

Through a right subcostal incision the duodenum was Kocherised. This brought the lateral and posterior surfaces of the aneurysm into view. There was no surrounding inflammation. After proximal and distal vascular control was obtained the aneurysm was cautiously mobilized; its wall was extremely thin. No attempt was made to dissect out the other structures in the hepatoduodenal ligament, in order to avoid devascularisation of the common hepatic duct. The aneurysm was incised longitudinally and the portal vein was reconstructed with an intraluminal longitudinally running suture. The remaining aneurysmal wall was wrapped around the portal vein, which had resumed its normal size and contour (Fig. 3).

Six months later the patient remained asymptomatic and a follow-up CT scan showed a patent portal vein in the region of the former aneurysm (Fig. 4).

Discussion

The portal system is unique in the human body
because of a relatively high venous pressure, the absence of valves and the presence of a double capillary bed. These may be the reasons why the incidence of aneurysms in the portal vein is reported to be less than 3% of that in the venous system as a whole and they have been observed by ultrasound in 0.6 per thousand.5 Due to the fact that the size of the portal vein can show considerable individual variations a clear definition of the size of a portal vein aneurysm does not exist.5,6 In patients without hepatic disease or portal hypertension, the diameter varies between 1.07 and 1.24 cm, with an average of 1.15 cm.6 Doust and Pearce7 assert that the maximum anteroposterior diameter of the portal vein never exceeds 1.9 cm even in cirrhotics. A dilated vein is therefore accepted as an aneurysm when its diameter is significantly greater than the upper limit of the main portal vein. However, saccular aneurysms are much more readily apparent.

Portal vein aneurysms can be divided into two groups: extrahepatic and intrahepatic. By 1999,8,9 about 20 patients with extrahepatic portal vein aneurysm were reported and the majority of these
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However, the seriousness of the sequelae of portal vein thrombosis or even rupture suggest that elective operation on large saccular aneurysm of the portal vein is indicated. There is some suggestion that the potential hazards of manipulation of a portal vein aneurysm, unless portal hypertension is present, are negligible in comparison to the possible complications of the aneurysm itself. In our opinion the ease with which the main portal vein was reconstructed in this case make an elective operation in such cases a reasonable approach. Removal of the large aneurysm may have been responsible for the relief of the patient’s symptoms and may have prevented serious complications. Asymptomatic small or fusiform aneurysms may be managed by regular observation alone.

References