

Surgical consideration in a patient with cirrhosis with severe portal hypertension

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DESCRIPTION

A 54-year-old man with a background of repaired large inguinoscrotal hernia, right nephrectomy for renal cell carcinoma, treated hepatitis C virus and alcohol-related cirrhosis. He initially presented with grade I encephalopathy (HE) and was started on rifaximin. On imaging, there was evidence of cirrhosis, portal hypertension (PHT) and splenomegaly. He developed portal vein thrombosis and was treated with warfarin. He had recent episodes of decompensation with non-variceal haemorrhage, scrotal cellulitis and acute kidney injury. A renal biopsy was planned in view of deteriorating renal function and proteinuria while being assessed for transplant.

He was admitted to the Intensive Care Unit (ICU) postelective left renal biopsy which was complicated by a large retroperitoneal bleed requiring renal artery embolisation. The bleeding was considered a recognised complication postbiopsy not related to PHT as no significant splenorenal varices were present. The CT scan demonstrated an epigastric hernia and a left portal vein recanalising to the paraumbilical vein. The left external iliac vein was double-sized compared with the right due to portosystemic shunting or marked reduction in the calibre of the right portal vein branches. The predominant splanchnic drainage was via a large paraumbilical varix which drained into the left iliofemoral system (figures 1 and 2).

He was not on warfarin at the time of biopsy and no fresh frozen plasma or platelets (PLT) transfusion was required prebiopsy as International normalised ratio (INR) 1.31 and PLT $113 \times 10^9/L$. His blood tests on admissions were Haemoglobin 72 g/L, White cell count $9.88 \times 10^9/L$, PLT $201 \times 10^9/L$, INR 1.3, Albumin 20 g/L, Sodium 140 mmol/L, Urea 14 mmol/L, Creatinine 210 $\mu\text{mol/L}$, Bilirubin 8 $\mu\text{mol/L}$, Alkaline phosphatase (ALP) 122 IU/L, Aspartate aminotransferase (AST) 27 IU/L, Gamma-glutamyl transferase (gGT) 272 IU/L, C-reactive protein (CRP) 3.7 mg/L. He was transfused, given broad-spectrum antibiotics and antifungals and required renal replacement therapy.

During the course of his admission, he developed Fournier's gangrene and an urgent surgical referral was made. The evidence of severe PHT led to a careful assessment and discussion with the surgical team taking into account the anatomy and potential complications during and after intervention. Based on that, a scrotal debridement was successfully performed in two stages with mini-debridement, followed by relook and repair of hydrocele. He had 47 days ICU stay in view of recurrent sepsis, respiratory wean and need for rehabilitation. The patient recovered and he was admitted to a renal



Figure 1 Normal bone, 3D reconstruction of a postcontrast CT scan abdomen/pelvis which demonstrates a left portal vein recanalising to the paraumbilical vein, double-sized left external iliac vein and large paraumbilical varix draining into the left iliofemoral system. 3D, three dimensions.

ward (26 days) for intermittent haemodialysis prior to discharge home. His model for end-stage liver disease (MELD) score before admission to the ICU was 15 and after ward discharge was 27 which demonstrates the degree of decompensation



Figure 2 Coronal maximum intensity projection reconstruction of the same postcontrast CT abdomen/pelvis and description as figure 1.



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Images in...

sustained postlarge retroperitoneal bleed, sepsis, invasive interventions and prolonged hospital admission.

This case highlights the importance of reviewing all of the available axial imaging prior to consideration of any surgical intervention. These types of shunts can be a source of hepatic encephalopathy and bleeding.^{1 2} The potential for massive haemorrhage with any surgical intervention should be considered in cirrhotic patients with PHT and portosystemic shunt. Hepatic venous pressure gradient values >16 mm Hg, especially ≥ 20 mm Hg, have been associated with a high risk of postsurgical mortality.³ MELD can be useful to determine operative mortality risk, in fact a score >20 has been related to more than 50% 30-day mortality and a score ≤ 15 to 25.4%.⁴

Early referral to a specialist centre is warranted for the interpretation of shunt anatomy and for specialist surgical and interventional radiological input where appropriate.^{5 6}

Learning points

- ▶ Importance of reviewing axial imaging prior to consideration of any surgical intervention.
- ▶ In patients with cirrhosis with portal hypertension and portosystemic shunt consider potential for massive haemorrhage with any surgical intervention.

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