

Commentary

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Beware of TIPPSers

Anatomical diversion of portal venous blood flow, to lower portal pressure and thereby reduce the complications of portal hypertension, has long been a goal of hepatologists and surgeons. It took considerable time, and meta-analysis of randomised trials, to show that although these procedures effected significant reductions in variceal bleeding, encephalopathy rates were increased by a factor of five and mortality was unchanged. Transjugular intrahepatic portosystemic stent shunts (TIPSS) create an internal conduit between the portal and hepatic veins reducing portal pressure by up to 60%¹ without the operative mortality of a surgical procedure. Are we about to relearn history when attempting to come to some appreciation of the benefit and risks of this procedure? It is remarkable that after more than five years of reports of the efficacy of such procedures there remain no adequately reported controlled trials of their use, while the proposed indications for the use of TIPSS, continues to increase, including variceal rebleeding,¹ rescue therapy,³ diuretic resistant ascites,⁴ a bridge to transplantation,⁵ cirrhotic hydrothorax,⁶ and Budd-Chiari syndrome.⁷

In patients with active variceal haemorrhage who continue to bleed despite pharmacological therapy and two sessions of endoscopic treatment, mortality remains over 70%. When used as a rescue therapy in these circumstances TIPSS is an important advance and is highly effective in achieving haemostasis.³ Nevertheless, six week mortality (44%) may remain high.

In cirrhotic patients, after a variceal bleed, the rebleeding rates in those treated with TIPSS have been as low as 18% at one year, with mortality of 15%.¹ Unfortunately interpretation of some series has been difficult as life table analysis with stratification by Childs-Pugh grade, the major risk factor for variceal rebleeding, is not always available. Not all studies have described such a favourable outcome in the worst risk cases. Thus in a series of patients with refractory variceal bleeding or ascites not deemed suitable for orthotopic liver transplantation, the majority Childs-Pugh grade C, TIPSS was followed by a median survival of only 2.6 months with a 74% mortality.⁹ While the results with TIPSS often look impressive in low risk cases, it is important to note that in recent trials comparing injection sclerotherapy and variceal band ligation the rebleeding and death rates in such Childs-Pugh grade A or B cases have both been less than 20%. Enthusiasm for TIPSS in this context should be tempered by the early results from randomised comparison with endoscopic methods, demonstrating either no improvement or worse survival.^{10–14}

The use of TIPSS as a 'bridge to transplantation' has also been championed. What this bridge is meant to traverse is unclear. Excluding those cases having TIPSS for rescue therapy who might thus survive long enough to benefit from transplantation, the proportion of patients on liver transplant waiting lists who die from uncontrolled variceal bleeding is probably small, so the number of cases that might benefit in this regard is doubtful. TIPSS has little or no benefit on the transplant operative procedure

itself, other than possibly reducing transfusion requirements,⁵ and is not without its own perioperative complications. As TIPSS exacerbates the hyperdynamic state of liver disease,¹⁵ and in some cases causes a significant deterioration in hepatocellular function, its use in this context must be considered very carefully.

The report by the Edinburgh group in this issue is an important contribution to help us appreciate the longterm problems of TIPSS. In a large series of 130 patients they report an impressively low rebleeding rate (13.4%) although again there is no breakdown of variceal bleeding by Childs-Pugh grade. Perhaps the most illuminating aspect of this paper is the careful documentation of the complications associated with TIPSS. The TIPSS procedure is comparatively safe but not without complication – mortality ranging from 1% up to 10%.¹⁶ This is undoubtedly lower with experience,¹ but procedure related complications can occur in up to 30%.⁴ Shunt stenosis due to intimal hyperplasia is an important problem that is increasingly recognised. It increases with time, and in the study by Stanley pre-intervention patency was only 58% at one and 21% at two years, similar to that reported by Laberge.² Regular surveillance is going to be required and the suggestions are that this will have to be by invasive portography as Doppler sonography is insensitive. Furthermore, the efficacy of repeated balloon dilatation to prevent occlusion is unclear.

A further major problem with TIPSS, exemplified in the Edinburgh series, is the increasing frequency of encephalopathy, particularly in those with Childs-Pugh grade C liver disease or prior encephalopathy.¹⁷ As was found with surgical shunts, it is probable that there is an inevitable trade off between reduction of portal pressure with reduction in rebleeding risk and reduction of nutrient hepatocellular blood flow with increase in hepatic encephalopathy.

What then is the place for TIPSS? There is evidence of short-term benefit when used as rescue therapy for uncontrolled variceal haemorrhage. Until large scale controlled trials comparing its use with endoscopic therapy are published it is difficult to justify TIPSS in the routine management of variceal haemorrhage. In most cases with diuretic resistant ascites the best treatment is orthotopic liver transplantation, and very careful selection is required in this group.¹⁸ In those unsuitable for transplantation there is no evidence that TIPSS represent an advance over regular paracentesis. The paper from Stanley *et al* has clearly reported the longer term complications of TIPSS, which helps inform our decisions about its use. It cannot be used as evidence for the efficacy and it is clearly not a substitute for carefully controlled trials in specific clinical situations. While these are undoubtedly difficult to arrange and sponsor in an era of evidence-based medicine, we must hope it will not take as long to find the answer as it did with surgical portocaval shunts.

ALEXANDER GIMSON

Cambridge Hepato-Biliary and Transplant Unit,
Addenbrooke's NHS Trust, Hills Road, Cambridge CB2 2QQ

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