A Review of the TIPS Procedure and Its Expanding Role in the Treatment of Hepatic Disease
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Introduction
Transjugular intrahepatic portosystemic shunt (TIPS) is an effective and minimally invasive procedure that is used to achieve decompression of the portal vein. Traditionally, it has been used to treat cirrhotic patients suffering from esophageal varices and/or recurrent ascites. However, current literature suggests that TIPS may be safely used in additional indications, including treating Budd-Chiari syndrome, ectopic varices, esophageal varical hemorrhage and portal vein thrombosis. The effectiveness and safety of TIPS in the treatment of the above conditions will be analyzed by reviewing current literature.

Two Most Common Indications for TIPS Placement

Indications:
Secondary prophylaxis of esophageal varical hemorrhage.

Evidence:
1. Meta-analysis in 1999 demonstrated that TIPS is superior in long term prevention of rebleeding to endoscopic therapy, 19% incidence of rebleeding with TIPS vs 47% incidence of rebleeding with endoscopy. (1)
2. Critical guideline is that post-TIPS portosystemic pressure gradient is less than 12 mm Hg to prevent rebleeding.

Ectopic Varices
Ectopic varices comprise 1 to 5% of varical bleeds in patients with intrahepatic portosystemic shunt due to cirrhosis. (5, 6) Intestinal, peritoneal or stomal varices should benefit from portoportal decompresssion.

Indications:
1. Patients who fail to improve with endoscopic treatment or propranolol.
2. Patients who fail to improve with endoscopic therapy and propranolol despite triple banding or injection.
3. Patients who are candidates for surgical shunt therapy.

Evidence:
1. TIPS is an effective treatment option for cirrhotic patients with bleeding stomal or anorectal varices unresponsive to conservative management. – Shibata et al. demonstrated the successful use of TIPS in treating 12 patients with active bleeding secondary to ectopic varices. (7)
2. Companion, S., Cameron, D., Berry, C. Transjugular intrahepatic portosystemic shunting of causes unrelated to the procedure. (8)
3. Patients required shunt revision within one year of placement.
4. There are a number of case reports that support using TIPS to treat ectopic varices.

Hepatic Hydrothorax
Hepatic hydrothorax refers to the presence of pleural effusion >500 ml in a patient with cirrhosis who has no other reason to have pleural effusion.

Indications:
1. Patients with a known diagnosis of cirrhosis, known portal hypertension and pleural effusion who remain symptomatic despite the use of sodium restriction and diuretics.
2. A retrospective study by Campos et al demonstrated a response rate of 73.3% with 40% of patients experiencing a complete response and 33.3% of patients having a partial response. (10)

Portal Hypertensive Gastropathy
Portal hypertensive gastropathy (PHG) is a condition characterized by dilatation, hypermotility, and hypersecretion of the stomach and small intestine. It is a complication of portal hypertension and can lead to decreased food intake, weight loss, and anemia. PHG can be managed with medical treatment, endoscopic band ligation, and TIPS as a surgical option.

Indications:
1. Patients with hepatic gastropathy with or without esophageal varices caused by portal hypertension.

Evidence:
1. TIPS was more effective than endoscopic band ligation + propranolol in preventing recurrent esophageal varical bleeding in patients with advanced cirrhosis and portal vein thrombosis. (11)
2. There was no increase in incidence of hepatic encephalopathy.

Conclusion
TIPS is an effective and minimally invasive procedure that has gone in use over time. It has proven track record in the treatment of refractory ascites and prophylaxis of esophageal varical hemorrhage. However, new literature is demonstrating that TIPS’ use can be expanded further in the treatment of hepatic disease.

References