

Introduction: Portal Hypertension

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Surgical operations for prevention of recurrent variceal bleeding have significantly diminished over the past decade. This section illustrates the different surgical options for managing variceal bleeding with total, partial, and selective shunts, and devascularization procedures. The peak of non-transplant surgical intervention for variceal bleeding was in the 1970s to 1980s when other management options were not available. Since then, the pathophysiology has been better defined for portal hypertension, and there have been technological advances in endoscopy and radiology.

The pathophysiology of portal hypertension follows the sequences of an initial obstruction to portal venous flow, an increase in portal pressure, development of collaterals, splanchnic hyperemia, and a hyperdynamic systemic circulation. Pharmacologic intervention with non-cardioselective beta-blockade to moderate these pathophysiology changes has been successful in preventing initial bleeding and in reducing the risk of re-bleeding. Reduction of splanchnic hyperemia with somatostatin or its analogues is effective in the acute setting.

Endoscopy has dramatically improved in the last two and a half decades with the universal adoption of videoendoscopy. For managing esophageal varices, treatment has evolved from an almost blind stick of a bleeding esophageal varix of three decades ago to sophisticated multiband-like ligators for both acute and elective management of gastroesophageal variceal bleeding. The lower complication rates with banding as opposed to sclerotherapy have established this as the primary treatment option for acute bleeding and initial prevention of recurrent bleeding.

The radiological evolution of hepatic imaging and ability to access the portal vein has led to transjugular intrahepatic portal systemic shunts (TIPS) over the past decade. TIPS can decompress varices successfully. High stenosis rates with bare stents have been reduced with the evolution of covered stents, but pseudointimal hyperplasia does remain a problem with a requirement for long-term monitoring of TIPS to maintain decompression.

Liver transplantation has also evolved dramatically over the last two decades, becoming the main surgical option for patients with variceal bleeding and advanced liver disease and the only therapy that has significantly impacted mortality. For these patients, liver transplant is the best treatment option.

Is there still a role for the operations for portal hypertension described in this section? These procedures may be useful in some patient populations and are among the treatment options in different parts of the world. It should be recognized that all of the operations described in this part can work very well for some patients. While there is no doubt that the overall use of these procedures has markedly diminished, they should not be lost from the repertoire of surgeons managing complex hepatobiliary disease and should remain part of the repertoire of liver transplant surgeons where there is refractory variceal bleeding with well-preserved liver function. This section presents excellent descriptions of these operations from recognized experts with technical details and tips that make the operations possible for other surgeons with expertise in hepatobiliary surgery.