

Transjugular Intrahepatic Portosystemic Shunt (TIPS)

INTRODUCTION

Transjugular intrahepatic portosystemic shunt (TIPS) is a small, tubular metal device commonly called a stent that is placed in veins in the middle of the liver to permit blood flow to bypass the liver.

Your liver disease is causing blockage and increased blood pressure in the veins that drain into your liver from your intestine. As a result, distended varicose veins have developed in your stomach and esophagus (the food passage from the mouth to the stomach) or you have developed large amounts of fluid in your abdomen or chest. If you have experienced distended varicose veins in your stomach and esophagus, some of them have burst and caused severe bleeding. The bleeding can no longer be adequately controlled with medication or endoscopic (a flexible tube inserted through your mouth and into your esophagus and stomach) treatment methods. This bleeding can be very dangerous, or even fatal, if no further treatment is provided. If you have experienced the development of large amounts of fluid in your abdomen or chest, diuretic medications (water pills) have not been effective at relieving the fluid buildup. To relieve the blockage and decrease the blood pressure in the veins that drain your liver, it is recommended that you undergo creation of a transjugular intrahepatic portosystemic shunt (TIPS) with a metal stent.

During this procedure, a new channel (shunt) will be created through your liver to decrease the high blood pressure in your stomach veins. This will result in a decrease in distended varicose veins or reduce the amount of fluid being formed in your abdomen.

PROCEDURE

A TIPS procedure involves the placement of a plastic intravenous tube (catheter) into a vein in your neck. Some numbing medicine will be injected in the skin over the vein that will be used before the catheter is inserted. Intravenous medications may also be given to you to make you more comfortable and relaxed. This is known as conscious sedation.

Once the catheter has been placed into the vein, it will be advanced through the blood vessels and into the hepatic vein (a liver vein). During this time, x-ray contrast material (x-ray dye) will be injected through the catheter and x-ray pictures taken. You may be asked to hold your breath for several seconds as these pictures are taken. During the injection of x-ray contrast material, you may experience a warm feeling or a strange taste in your mouth. Both of these sensations are temporary and will go away soon. Once the catheter is placed into the hepatic vein, a long needle will be passed through the tube and used to connect to the portal vein branch (a liver feeding vein). This shunt through the liver will then be enlarged with a special balloon catheter.

Following this enlargement, a stent (metal mesh tube) is inserted to prevent closing of the shunt.

Once this is done, the high pressure in the veins will be relieved as blood now flows through the liver shunt. Any bleeding from stomach varicose veins should stop at that time. If the bleeding does not stop, a catheter will be directed into the veins and material injected to stop the bleeding.

AFTERCARE

At the completion of the TIPS procedure, the catheter will be removed and pressure will be applied to the insertion site until the bleeding has stopped. To help prevent bleeding, it will be

very important for you to lie flat in bed without moving your arm or leg for up to six hours. It is unknown how long the shunt in your liver will remain open. To assess the status of the shunt, you be monitored with periodic ultrasound (sound wave) examinations. If the shunt is found to be closed, it will need to be reopened.

Benefits

- A TIPS is designed to produce the same physiological results as a [surgical shunt](#) or bypass, without the risks that accompany open surgery.
- TIPS is a minimally invasive procedure that typically has a shorter recovery time than surgery.
- Your TIPS should have less of an effect than open surgical bypass on future liver transplantation surgery, because the abdomen has not been entered.
- The TIPS is contained entirely inside the diseased liver, and is removed with it during a transplant operation.
- Studies have shown that this procedure is successful in reducing variceal bleeding in more than 90 percent of patients.
- No surgical incision is needed—only a small nick in the skin that does not have to be stitched closed.

Risks

- Any procedure where the skin is penetrated carries a risk of infection. The chance of infection requiring antibiotic treatment appears to be less than one in 1,000.
- There is a very slight risk of an allergic reaction to the contrast material used. Also, kidney failure (temporary or permanent) due to contrast material use is a concern, particularly in patients with poor kidney function.
- Any procedure that involves placement of a catheter inside a blood vessel carries certain risks. These risks include damage to the blood vessel, bruising or bleeding at the puncture site, and infection.
- Other possible complications of the procedure include:
 - fever
 - muscle stiffness in the neck
 - bruising on the neck at the point of catheter insertion
 - delayed stenosis, or narrowing within the stent, which is less common with the current generation of GORE-TEX-lined stents
- Serious complications, reported in fewer than five percent of cases, may include:
 - occlusion, or complete blockage, of the stent and rapid recurrence of symptoms
 - infection of the stent or fabric lining
 - abdominal bleeding that might require a transfusion
 - laceration of the hepatic artery, which may result in severe liver injury or bleeding that could require a transfusion or urgent intervention
 - heart arrhythmias or congestive heart failure
 - death (rare)

- Excessive drowsiness, sleepiness or difficulties in concentrating (known as encephalopathy) may develop in up to 1 in 3 patients after a shunt is placed. This encephalopathy is usually manageable with the use of medications and a low-protein diet. In rare cases, severe encephalopathy or even coma may develop. If this occurs, the shunt may need to be narrowed or blocked to limit the amount of blood flow through the channel.

ALTERNATIVES

There may be other methods, including surgery, to treat your liver disease. If you are unsure about undergoing a TIPS procedure, please discuss these other alternatives with your physician.