



Introduction

1. Transjugular Intrahepatic Portosystemic Shunt (TIPS) is a vascular connection between a hepatic vein and a branch of the portal vein created percutaneously inside the liver via the Jugular Vein at the neck. The portal venous pressure is reduced.
2. TIPS is used to treat the complications of portal hypertension:
 - ◆ Variceal bleeding, bleeding from any of the draining veins from the portal venous system, such as oesophageal varices.
 - ◆ Portal gastropathy, an engorgement of the veins in the wall of the stomach, which can cause severe bleeding.
 - ◆ Severe ascites (the accumulation of fluid in the abdomen) and/or hydrothorax (in the chest).
3. The procedure will be performed in the Radiology Department under image guidance by radiologists with special training in interventional radiology. Contrast medium and / or carbon dioxide will be used.

The Procedure

1. Before the procedure, some examinations may be performed including ultrasound, CT scan and blood examination to assess the anatomy and patency of blood vessels and liver function.
2. The procedure is performed under local anaesthesia using aseptic techniques. General anaesthesia may be used in special occasion.
3. Your vital signs (blood pressure, pulse and oxygenation status) will be monitored throughout the entire procedure.
4. The usual access site is the right internal jugular vein on right side of your neck. A small catheter and a guidewire will be navigated into the hepatic vein of the liver after passing through the superior vena cava and right atrium.
5. From the hepatic vein, the radiologist will try to puncture a branch of the portal vein with a special set of instrument and needle. The liver tissue between the hepatic vein and portal vein will then be dilated with a balloon catheter and a metallic stent implanted to keep the tract open.
6. The venous blood pressure will be measured and the diameter of the stent adjusted accordingly.
7. The procedure will normally take 3 – 6 hours, longer for small liver.
8. The bleeding varices (dilated veins) may also be blocked by metallic coils through the venous route.
9. After TIPS, vital signs will be monitored. A short vascular sheath may be left at the puncture point in the internal jugular vein to facilitate further procedure when necessary.
10. On the next day, a doppler ultrasound will be performed to confirm the patency of the TIPS and baseline measurement will be taken. If the TIPS is patent and the clinical condition satisfactory, the vascular sheath will be removed.
11. Within 6 to 12 months after successful creation of TIPS, up to 50% of patients with bare stents may experience stent lumen narrowing of more than 50%, resulting in recurrent symptoms due to high portal venous pressure. The bleeding rate is up to 24%. The recurrence of symptoms can be treated by redilatation or insertion of an additional stent. Endograft has better patency rate and less rebleeding rate.

Before the Procedure

1. A written consent is required.
2. Inform medical staff before the examination if patient is or may be pregnant as the examination involves high dose of X-ray that is harmful to a foetus. Pregnancy test may be necessary in case of any doubt if the examination is to be proceed.
3. Inform doctor of history of allergy to drugs, and to contrast medium. Oral or intravenous steroid premedication may be needed before injection of contrast medium.
4. Keep fasting for 6 hours prior to the examination.
5. For diabetic patients on Metformin medication, patient should inform medical staff before examination.
6. Check clotting profile for any bleeding tendency, to be corrected if abnormality detected.
7. Set up venous access.

<p>Patient's Label Patient Name: _____ Hospital No: _____ Episode No: _____</p>



Risk and Complication

1. Encephalopathy (impairment of brain function) controlled by medical therapy (< 25%)
2. Severe or uncontrolled encephalopathy (depends on pre-existing liver condition and presence of encephalopathy)
 - 2.1 mild to moderate liver disease (<10%)
 - 2.2 severe liver disease (<40%)
3. Hematoma (blood clot accumulation) at entry site (< 5%)
4. Fever (< 5%)
5. Transient contrast-induced renal failure (< 5%)
6. Hepatic artery injury (< 2%)
7. Bleeding into the biliary tree (< 2%)
8. Gallbladder puncture (< 2%)
9. Stent malposition (< 1%)
10. Transient accumulation of fluid in lungs (< 1%)
11. Bleeding into the abdominal cavity (< 1%)
12. Vascular injury causing liver damage (< 0.5%)
13. Renal failure requiring long term dialysis (< 0.5%)
14. Radiation skin burn (< 0.1%)
15. Severe systemic infection (rare)
16. Procedure related death (rare)
17. Allergic reaction to intravenous contrast medium.
 - **Mild reactions:** For example, itching, mild skin rash, nausea, vomiting, feeling of warmth, arm pain, sneezing, coughing, and chest tightness. A few patients may experience delayed reactions usually within 24 hours, which include pain at injection site, itching, rash, painful or swollen salivary glands. The symptoms are usually transient, requiring minimal or no treatment.
 - **Moderate reactions:** These symptoms are more severe and last for a longer duration. Patient may experience rash or urticaria, fever and chills, an increase or decrease in blood pressure and palpitation. Specific treatment and close monitoring are required.
 - **Severe reactions:** The symptoms include shortness of breath, irregular heartbeat, chest pain, severe kidney failure, convulsion and unconsciousness. If these symptoms occur, the patient will require urgent medical treatment.
 - **Death:** Contrast medium may cause severe allergic reaction and leading to death but it is extremely rare.

Disclaimer

This leaflet only provides general information pertaining to this procedure. While common risks and complications are described, the list is not exhaustive, and the degree of risk could also vary between patients. Please contact your doctor for detailed information and specific enquiry.

Reference

The Hong Kong Society of Interventional Radiology Limited, Patient Information Leaflet:
Transjugular Intrahepatic Portosystemic Shunt (TIPS) (2010)

Patient's Label

Patient Name: _____
Hospital No: _____
Episode No: _____

Signature of Patient: _____ Date: _____