TRANSJUGULAR INTRAHEPATIC PORTOSYSTEMIC SHUNT (TIPS)

Information for patients

Introduction

TIPS is a vascular connection between a hepatic vein and a branch of the portal vein created percutaneously inside the liver. The portal venous pressure is reduced.

A TIPS is used to treat the complications of portal hypertension, including:

- variceal bleeding, bleeding from any of the draining veins from the portal venous system, such as esophageal 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).
- Budd-Chiari syndrome, a blockage in one or more veins that carry blood from the liver back to the heart.

The procedure will be performed by radiologists with special training in interventional radiology. It will be performed in the Department of Radiology under image guidance. Contrast medium and / or carbon dioxide will be used.

Procedure

- Before the procedure, some examinations will be performed, which may include ultrasound, CT scan and blood examination to assess the anatomy and liver function. An intravenous line will be set and a urinary catheter will be inserted. Your vital signs will be monitored throughout the procedure.
- The procedure is usually done under local anaesthesia and conscious sedation, general anaesthesia may be used in special occasion
- The usual access site is the right internal jugular vein at your neck region. A small catheter and a guidewire will be used to enter the hepatic vein of the liver after passing through the superior vena cava and right atrium.
- From the hepatic vein, the radiologist will try to puncture a branch of the portal vein with a special set of instrument and needle. If the portal vein is successfully punctured, the liver substance between the hepatic vein and portal vein will be dilated with a balloon catheter and a metallic stent or a cover stent (endograft stent) will be implanted to keep the tract open.
- Recent studies show that endograft stent has better patency rate when compared with traditional metallic stent.
- The venous blood pressure will be measured and the diameter of the stent will be adjusted accordingly.
- The average duration of the procedure is from 3 – 6 hours. It may take longer if the liver is small.
- The bleeding varices may also be blocked by metallic coils through the venous route.
- After TIPS, a short vascular sheath may be left in the internal jugular vein to facilitate further procedure when necessary. Your vital signs will be monitored.
- A doppler ultrasound will be performed on the next day to confirm the patency of

the TIPS and baseline measurement will be taken. If the TIPS is patent and the clinical condition is satisfactory, the vascular sheath may be removed.

- After successful creation of TIPS, up to 50% of patients with bare stents may have stent lumen narrowing of more than 50% and recurrent symptoms due to increased portal venous pressure in 6 to 12 months. The rebleeding rate is up to 24%. The recurrence of symptoms can be treated by redilatation or an additional stent or endograft insertion. Endograft has better patency rate and less rebleeding rate.

Potential Complications

Encephalopathy (impairment of brain function) controlled by medical therapy	< 25%
Severe or uncontrolled encephalopathy (depends on preexisting liver condition and presence of encephalopathy). TIPS may have to be blocked later intentionally	< 10% in mild to moderate liver disease < 40% in severe liver disease
Hematoma (blood clot accumulation) at entry site	< 5%
Fever	< 5%
Transient contrast-induced renal failure	< 5%
Hepatic artery injury	< 2%
Bleeding into the biliary tree	< 2%
Gallbladder puncture	< 2%
Stent malposition	< 1%
Transient accumulation of fluid in lungs	< 1%
Bleeding into the abdominal cavity	< 1%
Vascular injury causing liver damage	< 0.5%
Renal failure requiring long term dialysis	< 0.5%
Radiation skin burn	< 0.1%
Severe systemic infection	Rare
Procedure related death	Rare

The overall adverse reactions related to iodine-base non-ionic contrast medium is below 0.7%. The mortality due to reaction to non-ionic contrast medium is below 1 in 250000.

Disclaimer

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