Patient Information

University Hospitals Coventry and Warwickshire NHS Trust

Radiology

Transjugular Intrahepatic Porto-Systemic Shunt (TIPSS) procedure

Introduction

You have been advised by your hospital consultant that you need to have a Transjugular Intrahepatic Porto-Systemic Shunt (TIPSS) procedure. This leaflet explains what the procedure involves and any possible risks.

The information may not answer all your questions, so if you have any concerns, please ask the ward staff. If you feel unhappy with any part of your care within the X-ray Department, please ask to speak to a senior member of staff.

Please read this leaflet carefully to ensure you are successfully prepared for the examination.

Please contact the X-ray Department if your weight is equal to or more than 205Kg (32 stone) you may need an alternative examination.

Points to remember:

- Please bring any sprays or inhalers that you are taking with you to the X-ray Department.
- Please leave any valuable possessions on the ward.
- If you are taking **any anticoagulation or antiplatelet medications,** please tell the ward staff, as these medications may need to be stopped before the procedure.

What is TIPSS and what does the procedure involve?

TIPSS stands for Transjugular Intrahepatic Porto-Systemic Shunt. It is a treatment to reduce the blood pressure within your liver. The procedure is done under X-Rays guidance in the Interventional Radiology theatre.

Transjugular

The procedure is performed through a small incision at your neck to allow instruments to be passed into the jugular vein at your neck (***Transjugular*** approach) down to the hepatic vein your liver.

Occasionally, a small cut at the right side of your abdomen is also needed to allow instruments to be passed into the portal vein in your liver (Transhepatic approach) to complete the procedure.

Intrahepatic

A connection will be created by passing a needle from the hepatic vein into the portal vein, which are the two main veins within your liver (***Intrahepatic***).

Portosystemic

The portal vein in your liver collects blood from the gut and spleen into the liver, where the blood is filtered before returning to the heart. The connection created between the ***Portal*** vein and the hepatic vein (a ***Systemic*** vein which bring blood back into the heart) will allow some of the blood from the gut and spleen to bypass the liver and drain more directly into heart.

Shunt

Once the connection between the portal vein and hepatic vein is made, it will be dilated by a balloon temporarily, then a metal stent (the ***Shunt***) will be inserted to allow blood to continue to flow from the portal vein into the hepatic vein, then into the heart.

Why do I need a TIPSS?

The treatment is offered to you because you have portal hypertension, this means you have high blood pressure in your portal vein, which has either caused bleeding in your gut or ascites that is difficult to manage with other treatment methods.

Portal hypertension can be caused by chronic liver disease, where the blood flow within the liver is restricted from scarring of the liver tissue. The other common cause is blockage of liver veins due to blood clots.

As a result of portal hypertension, the blood that is congested in the portal system must escape from other routes, so varicose veins around the oesophagus, stomach, other part of the gut or spleen can form. These varicose veins could bleed into your stomach and gut or inside your abdomen.

You may have had other forms of treatment such as medications to reduce portal vein blood pressure, injection or banding to these varicose veins through a camera examination (endoscopy) or surgery. You are referred for TIPSS when it is felt that these treatments are no longer effective.

The other reason for TIPSS is when portal hypertension is causing build-up of fluid within your abdomen i.e., ascites, that is not controlled by medication and that you need drainage of the fluid very often.

Referral and consent

The doctor who looks after your liver disease would discuss TIPSS and alternative treatment options, including the reason for the procedure and the risks it entails. Your doctor will then refer you to an Interventional Radiologist who performs TIPSS.

You will be given verbal and written information about the procedure either in clinic or on the ward. You will have the chance to ask any questions or discuss your concerns about it before giving your consent.

You may be asked to sign the consent form on the ward or in the Interventional Radiology suite before the procedure. It is important that you understand the procedure before giving your consent, therefore if you have any questions, please ask the doctor on the ward or the Interventional Radiologist.

You can reject the procedure or withdraw your consent at any time before the procedure.

How do I prepare for a TIPSS?

- You will be admitted to the hospital before the procedure.
- You will need up-to-date blood test, in particularly to check whether you have increased risk of bleeding. Blood samples will also be sent to the blood bank in case you need a blood transfusion for the procedure.
- If your blood test shows that you have increased risk of bleeding, you may be given medications or blood products infusion to correct that before the procedure.

- If you are taking any anticoagulation medications, such as Apixaban, Rivoroxaban, Dabigatran, Warfarin, etc, these will need to be stopped for a specific length of time. You may need a temporary medication, often a Clexane (heparin) injection to prevent blood clot, while you are withholding your anticoagulation medication. Please contact the Interventional Radiology Department for specific instructions.
- If you are on any antiplatelet medications, such as Aspirin, Clopidogrel, etc., these will need to be stopped for 5 days before the procedure.

The contrast medium used during the procedure contains iodine and is excreted by the kidneys in your urine. Please tell the Interventional radiologist or radiographer:

- If you are allergic to iodine, have any other allergies or suffer from asthma.
- If you have reacted previously to the injection used for kidney X-rays or CT scanning.
- If you have known kidney problems.

The procedure is normally carried out under general anaesthesia. You will therefore need to prepare yourself for the anaesthesia, as below:

- Please do not eat for the 6 hours before your procedure time.
- You can drink water only during this time but must stop 2 hours before your procedure time.
- You can take your normal medications (excluding anticoagulation, antiplatelet medications, and medications for diabetes) with water only on the day of your procedure.
- If you are diabetic, please tell the doctor or Interventional Radiology Department. Instruction for your diabetic medications while you are fasting will be given to you.

Before your procedure

- You will be seen by the Anaesthetist who will assess you and discuss the appropriate anaesthesia.
- You will meet the Interventional Radiologist who will perform your procedure, when you can ask any further questions. Your consent will be reconfirmed before starting the procedure.

- If you decide to go ahead with the procedure, you will then be moved into the Interventional Radiology theatre where you will be put to sleep by the Anaesthetist.
- You will be given intravenous antibiotics to reduce the risk of infection of this procedure.
- The skin of your neck will be cleaned with antiseptic, and the rest of your body will be covered with a sterile drape.

Recovery

- You will be in the Interventional Radiology recovery area when you wake up from the general anaesthesia.
- You will likely have intravenous fluid infusion through a cannula in your arm, which keeps you hydrated during and after the procedure.
- You will have your blood pressure, pulse and oxygen level monitored in the recovery area.
- Once you are awake and the above observations are stable, you will be transferred back to the ward, where the nurses will continue to perform these observations at regular intervals.
- You will be advised to stay in bed for several hours for these observations.
- You may feel some stiffness in your neck, discomfort in your abdomen or pain in your shoulders. These are related to the procedure and will normally improve with pain relief medications. Please seek help from ward staffs if these are severe.

Long Term Care

- You will have the TIPSS for the rest of your life.
- If the procedure is successful, the bleeding from your varices or your ascites caused by portal hypertension will improve.
- You are advised to continue to follow any dietary restriction and not to drink any alcohol for your chronic liver disease, which is itself not treated by TIPSS.
- You will be put on a surveillance programme to ensure that there is good blood flow through your TIPSS. This will involve having an ultrasound scan of your liver at 6 weeks, 6 months, then once a year.

Potential Risks and Complications

As with any procedure or operation, complications are possible. We have included the most common risks and complications below. The probability of these complications and the risks will be discussed with you before you sign the consent form.

- **Failure to create the TIPSS**: In some patients with advanced liver disease, the liver can be too scarred or stiff for a needle to pass through to create the connection between the hepatic vein and portal vein.
- **Puncture site complication**: You can get bruising or swelling under the small cut in your neck or abdomen. This will resolve without treatment. However, if you notice increasing swelling at these sites, please seek medical attention.
- **Persistent symptoms**

  Bleeding from your varices can continue even if the TIPSS procedure is performed correctly. This is often because the varices are delicate. You may need another procedure to block off these varices by inserting metal coils through your neck vein. The procedure is called embolisation of varices which is generally done under local anaesthesia. In some cases, embolisation is done at the same time of your TIPSS procedure, but this is normally discussed with you before you give your consent.

  Ascites can also persist after TIPSS. Sometimes adjusting the size of the TIPSS stent may be necessary to control your ascites better.
- **Bleeding in liver:** The procedure can cause injury to the blood vessels within the liver leading to bleeding within or outside the liver. If this happens, you may require a blood transfusion or another procedure to stop the bleeding.
- **Encephalopathy**: This is a condition when your brain function is affected and can cause confusion, personality change or memory loss. The decline in brain function is due to toxins in blood stream reaching the brain, which is normally filtered by the liver. In TIPSS, some of the unfiltered blood bypass the liver to get back to the heart then to the brain. This can normally be treated with medications but in some cases where symptoms are severe, it may be necessary to reduce or block off the TIPSS.

- **Stress to heart:** By diverting blood flow from the portal vein through the TIPSS into the heart, it can cause increased stress to your heart leading to heart failure. You would have had an echocardiogram to assess your heart function before the TIPSS to ensure your heart function is satisfactory. However, heart failure can still happen and may need medical treatment or reduction or blocking of TIPSS in severe cases.
- **Reduced kidney function**: The intravenous contrast medium used during the procedure can rarely cause deterioration in your kidney function, which will normally improve with rehydration. Permanent kidney failure is rare.
- **Allergy to intravenous contrast medium:** Allergic reaction from contrast medium used during the procedure can range from rash, breathlessness or severe anaphylaxis, which is rare. Please tell your doctor or Radiology staff if you have any known allergies.

Despite these possible complications, the procedure is normally very safe. You will be monitored closely by theatre and ward staffs during and after your procedure, so that any complications can be identified as early as possible and treated appropriately.

Radiation Risks

- The procedure is performed with X-rays guidance. X-rays is a type of radiation. We are all exposed to natural background radiation every day of our lives; this comes from the sun, food we eat, and the ground. Exposure to X-rays carries a small risk, but your doctor feels that this risk is outweighed by the benefits of having the procedure. We will take all safeguards to minimise the amount of X-rays you receive.
- **Patients aged 12 – 55 years - could you be pregnant?** The risks of radiation are slightly higher for the unborn child so you will be asked to confirm that you are not pregnant before the examination can proceed.

Other sources of information:

For information about interventional radiology including further information about this procedure you can view the British Society of Interventional Radiology website: www.bsir.org/patients

For information about the effects of X-rays read the NRPB publication: “X-rays how safe are they?” on the Health Protection Agency website: www.hpa.org.uk

Please note that the views expressed in these websites do not necessarily reflect the views of UHCW NHS Trust or the NHS.

The Trust has access to interpreting and translation services. If you need this information in another language or format, please contact the number on your appointment letter and we will do our best to meet your needs.

The Trust operates a smoke free policy.

Did we get it right?

We would like you to tell us what you think about our services. This helps us make further improvements and recognise members of staff who provide a good service.

Have your say. Scan the QR code or visit: www.uhcw.nhs.uk/feedback

Document History	
Department:	Radiology
Contact:	27161
Updated:	June 2023
Review:	June 2025
Version:	5
Reference:	HIC/LFT/1812/14