

Transjugular Intrahepatic Portosystemic Shunt (TIPSS)

Introduction

This leaflet tells you about the procedure known as transjugular intrahepatic portosystemic shunt (TIPSS); it explains what is involved and what the possible risks are. It is not meant to be a substitute for informed discussion between you and your doctor, but can act as a starting point for such a discussion.

If you are having the procedure performed as a pre-planned operation then you should have plenty of time to discuss the situation with the consultant radiologist and the consultant who referred you for the procedure. Your own GP may be able to give you some general advice. If you need the procedure as a relative emergency then there may be less time for discussion, but nonetheless, you should have had sufficient explanation before you sign the consent form.

If you need the procedure as an emergency due to catastrophic haemorrhage then a decision to perform the procedure will be taken in your best interest by your referring doctors, with your close family members if available.

What is TIPSS?

The best way of describing what TIPSS is, is to explain what the letters stand for.

T is for **TRANSJUGULAR**. This means that the radiologist will put a fine, hollow needle into the jugular vein in your neck. Through this needle he, or she, will pass a fine, thin wire in a straight line until it reaches the veins from your liver. Over this wire the radiologist will pass a fine plastic tube called a catheter.

I is for **INTRAHEPATIC**. The catheter that the radiologist has inserted will be passed down one of your liver veins into the liver itself. The radiologist will then take the wire out and insert a long curved needle.

PS is for **PORTOSYSTEMIC**. The long needle will be advanced from your liver vein, (or **SYSTEMIC** vein) into your **PORTAL** vein, which lies close to it. There is high blood pressure in this part of your circulation, and this procedure is designed to relieve this due to your underlying liver disease.

S is for **SHUNT**. Once the needle has been passed between your liver vein and the portal vein, a wire will be passed through the needle and the needle withdrawn. Over the wire the radiologist will pass a metal spring called a stent. This stent will expand to create a channel between the two veins. Blood will then flow from the high-pressure portal vein into the low-pressure liver (or systemic) vein. The high pressure in the portal vein which is causing the underlying problem will consequently be reduced, back towards normal.

Why do I need a TIPSS and what are the alternatives?

Normally, the nutrients in food are absorbed from the bowel, and carried back in blood vessels towards the liver. The largest of these vessels is called the portal vein. Once the nutrients reach the liver, they can be stored and then used. The liver also removes waste products.

The disease in your liver is blocking the flow of blood like a dam, and is causing the blood pressure in the portal vein to rise. Because of this, you may have developed extra veins inside your abdomen, like varicose veins, which may have bled into your stomach, or your gullet. You may have vomited blood. You may also have excessive fluid inside your abdomen (ascities). Your gastroenterologist or your surgeon will have tried other methods of stopping the bleeding, or lowering this high portal blood pressure. These probably have not worked. An open operation is possible to divert blood in the portal vein and lower the pressure, and this produces the same result as a TIPSS does. However, the open operation is considered more dangerous than TIPSS. It is possible that you are also being considered for a liver transplant.

Who has made the decision?

The doctors in charge of your case, and the radiologist performing the TIPSS, will have discussed the situation and feel that this is the best option. However, you will also have the opportunity for your opinion to be taken into account and if, after discussion with your doctors you do not want the procedure carried out, you can decide against it.

Who will be performing the TIPSS?

A specially trained doctor called an interventional radiologist will perform the TIPSS. Interventional radiologists have specialist expertise in using x-ray and scanning equipment and also in interpreting the images produced. They need to look at these images while carrying out the procedure.

Radiographers and radiology nurses will be present in the room to assist during the procedure, they will introduce themselves at the start of the procedure.

Occasionally student radiographers or medical students will be present to observe the procedure.

Where will the procedure take place?

The procedure will take place in the Medical Imaging Department

How do I prepare for TIPSS?

- The procedure will usually be performed under general anaesthetic.
- You need to be an inpatient in the hospital.
- You may receive a sedative to relieve anxiety, as well as an antibiotic.
- You will have had some blood tests performed before the procedure to check that you do not have an increased risk of bleeding.
- You are asked not to eat for 6 hours prior to the procedure. You may drink a little water.
- You should be prepared to stay overnight.
- If you have any allergies or you have previously reacted to intravenous contrast medium, you must let the doctor know. Intravenous contrast medium is the injection we give you during some scans.
- If you are diabetic, please contact the Medical Imaging Department on **01392 402336 selecting option 2, in-patient enquiries, option 6 for Special Procedures (Interventional)**.
- If you normally take any medication to thin your blood (anticoagulation or antiplatelet drugs) such as: **warfarin / clopidogrel / aspirin / non-steroidal anti-inflammatory drugs (NSAIDS /brufen / ibrufen / nurofen) / dabigatran (Pradaxa) / rivaroxiban (Xarelto) / Apixaban (Eliquis) / phendione / acenocoumarol** – then these may need to be stopped or altered. Please seek the advice of your hospital consultant or nurse specialist as soon as possible, ask your GP, or contact the Medical Imaging Department on **01392 402336 selecting option 2, in-patient enquiries and then option 6 for Special Procedures (Interventional)**.

- After discussion with your GP or referring clinician, and you can safely stop these medications it is recommended that:
Warfarin is stopped 6 days prior to your procedure
Aspirin is stopped 7 days prior to your procedure
Clopidogrel is stopped 7 days prior to your procedure
NSAIDS are stopped 2 days prior to your procedure
Rivaroxaban (Xarelto) and Apixaban (Eliquis) are stopped 2 days before your procedure.
If you are taking Dabigatran (Pradaxa) please consult your doctor or contact the Medical Imaging Department on **01392 402336** **selecting option 2, in-patient enquiries and then option 6 for Special Procedures (Interventional)**.
- Other medication should be taken as normal.
- A pregnancy test may be performed on arrival.

What actually happens during a TIPSS?

You will be taken down to the Medical Imaging Department on a trolley. You need to have a needle put into a vein in your arm or hand, so that you can have intravenous sedatives or painkillers. Once in place, this needle does not hurt.

In the Medical Imaging Department, the anaesthetist, who you will have met already, will put you to sleep. However, if it has been decided not to use a general anaesthetic, then do not worry an anaesthetist, or the radiologist and other trained staff, will make certain that you are heavily sedated so that you do not feel any pain, and do not remember the procedure. Once you are asleep, you will be monitored throughout the procedure and given oxygen. The interventional radiologist will keep everything sterile, and will wear a theatre gown and operating gloves.

The skin of your neck will be cleaned with antiseptic and the rest of your body will be covered with a theatre towel. When you wake up, if you have had a general anaesthetic, you will be in the theatre recovery area. You will have

a small needle in your arm, or hand, probably with a bag of fluid attached to it. You may feel some stiffness in your neck where the needle has been inserted

Will it hurt?

If you have a general anaesthetic, apart from having a small needle put into the back of your hand, you should not feel any pain and you should not remember the procedure. In the same way, you should not feel any pain if you are sedated.

There will be a nurse, or another member of staff, standing next to you and looking after you. If you are aware of any pain, then you can let them know, and they will arrange for you to have more painkillers or sedatives through the needle in your arm.

How long will it take?

Every patient's situation is different and it is not always easy to predict how complex or how straightforward the procedure will be. It usually takes approximately 1 hour, but it can take up to 4 hours.

In a small number of cases the procedure is unsuccessful.

What happens afterwards?

As stated, you will wake up in a theatre recovery ward if you have had a general anaesthetic. You will then be taken back to your ward on a trolley. Nurses on the ward will carry out routine observations, such as taking your pulse and blood pressure, to make sure that there are no untoward effects. You will generally stay in bed for a several hours until you have recovered.

Once you have recovered from the procedure, in most cases the bleeding which was part of your problem should no longer happen, or the fluid in your abdomen should begin to drain away. It is possible that you will be asked to stick to a new diet. This may have a very low protein and salt content. You must talk to the dietician if such a diet is recommended. You will also be asked not to drink any alcohol.

What will happen to the results?

A report of the procedure will be recorded on your electronic patient record immediately for review by your specialist.

Is TIPSS permanent and what happens next?

The stent that the radiologist has put in between your liver vein and your portal vein will stay in for the rest of your life. It can, however, become blocked and in order to prevent this, the radiologist will ask you to attend the Medical Imaging Department regularly for ultrasound examinations to check your liver. With ultrasound, the radiologist will be able to see the TIPSS and see if it is becoming blocked.

If at any time he or she thinks it is becoming blocked, they will ask you to come to the Medical Imaging Department for a day and will perform a procedure to unblock the TIPSS. This procedure may or may not require a general anaesthetic. If you are having a liver transplant, then the radiologist will check the TIPSS regularly until you have your transplant. If you are not having a liver transplant, you may have to come for regular checks annually.

Are there any risks or complications?

TIPSS is a very complicated procedure. Generally it is safe and you are carefully monitored by an experienced anaesthetist or by the radiologist and other trained staff. However, there are some risks and complications that can arise, as with any medical treatment. The radiologist may be unable to place the stent between the two veins.

This can happen sometimes because the liver disease has made the liver very hard, and the needle will not pass through it. If this happens, you may need the open operation. Sometimes, even though the TIPSS has been performed satisfactorily, bleeding can continue. This is because the high pressure in the portal vein has made the veins very delicate. If this happens, you may need to go back to the Medical Imaging Department and have these veins blocked off

with little metal coils in a procedure called embolisation. This is a procedure that does not usually require general anaesthetic.

Because patients with jaundice are likely to have difficulties with blood clotting, there may be some bleeding from the liver, where the needle was pushed between the two veins. On very rare occasions this may require a blood transfusion. If the bleeding continues, the bleeding blood vessel may need to be blocked off (embolised).

You may also develop a bruise in your neck, which can be a bit sore for a day or two.

Because the liver takes waste products out of the blood stream, if too much blood bypasses the liver, the waste products can remain in the blood and can cause you to become confused. If this happens you may require the diet mentioned previously, and if it is severe it may be necessary to block off the TIPSS on purpose.

There is a small risk (about 1%) that the portal vein flowing into the liver has become very fragile and when the stent/balloons are placed the portal vein can tear and develop a leak outside the liver. If this does happen then a further radiological procedure (stent-graft) or operation will be required to stop the internal bleeding. There is a small chance of dying from a complication of the procedure (rupture of the liver or portal vein) which is between 1 and 2%.

Finally...

Some of your questions should have been answered by this leaflet, but remember that this is only a starting point for discussion about your treatment with the doctors looking after you. Do satisfy yourself that you have received enough information about the procedure, before you sign the consent form.

Contact us

If you found reading your leaflet difficult, you do not understand what it means for you and if you have any queries or concerns you can contact us on: **01392 402336** and we can talk it through.

How to get to the Royal Devon & Exeter Hospital at Wonford

Please refer to the enclosed "Welcome to the Medical Imaging Department" leaflet or use the Trusts website for the latest information:

www.rdehospital.nhs.uk/patients/where

For more information on the Medical Imaging Department, please visit our website:

www.rdehospital.nhs.uk/patients/services/medical-imaging

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