

Percutaneous Biliary Drainage or PTC

Introduction

This leaflet tells you about the procedure known as percutaneous biliary drainage, explains what is involved and what the possible risks are. It is not meant to replace informed discussion between you and your doctor, but can act as a starting point for such a discussion.

If you are having a percutaneous biliary drainage done as a pre-planned procedure, then you should have plenty of time to discuss the situation with your consultant and the consultant radiologist who will be doing the drainage, and perhaps even your own GP. If you need the biliary drainage done as a relative emergency, then there may be less time for discussion, but none the less you should have had sufficient explanation, before you sign the consent form.

What is a Percutaneous Biliary Drainage?

One of the normal functions of the liver is to produce bile. This drains through a series of small tubes, or ducts, eventually into one larger tube, the common bile duct, which then empties into the duodenum, the first part of the bowel after the stomach. If the bile duct becomes blocked, then bile cannot drain normally and jaundice develops.

This is potentially a very serious condition, which needs to be treated. It used to be necessary to have an open operation to relieve the blockage. Now it is possible to insert a fine plastic drainage tube, called a catheter, through the skin using only a tiny incision, into the obstructed bile duct to allow the bile to drain externally for a while. This procedure is called Percutaneous, (meaning through the skin), biliary drainage.

Once a drainage catheter is in the bile duct, it is generally possible to pass a metal stent through the obstruction and into the duodenum, allowing the bile to drain internally in the normal way. This may be done as a separate procedure, one or two days after the first part, or may follow on directly

Why do I need percutaneous biliary drainage?

Other tests that you probably have had performed, such as an ultrasound scan or a CT scan, will have shown that the bile duct has become blocked. The commonest causes of biliary obstruction are gallstones and inflammation around the pancreas, but these other tests may not have shown the actual cause in your case.

Indeed, the underlying cause for the obstruction may only become evident once the biliary drainage has been carried out. It may also be possible to relieve the blockage by passing a flexible telescope, or endoscope, into the duodenum and inserting a drainage catheter into the bile duct that way (this is called an ERCP).

An open operation may still be necessary in some cases. However, in your case it is felt that a percutaneous biliary drainage is the most appropriate treatment option.

Who has made the decision?

The consultant in charge of your case and the consultant radiologist doing the biliary drainage will have discussed the situation, and feel that this is the best treatment option for you. However, you will also have the opportunity for your opinion to be considered and if, after discussion with your doctors, you do not want the procedure carried out then you can decide against it.

Who will be doing the percutaneous biliary drainage?

A specially trained doctor called an interventional radiologist. Interventional radiologists have expertise in using x-ray and scanning equipment and specialise in interpreting the images produced. They need to look at these images while carrying out the drainage procedure. Interventional radiologists have additional specialist expertise in handling and manipulating catheters inside the body.

Where will the procedure take place?

Generally in the x-ray department, in a special “interventional radiology” room, this is adapted for specialised procedures.

How do I prepare for percutaneous biliary drainage?

You need to be an in-patient in the hospital. You will have some blood tests performed beforehand, to check that you do not have an increased risk of bleeding. You will probably be asked not to eat for four hours beforehand, though you may be allowed to drink some water.

You may receive a sedative to relieve anxiety. You will be asked to put on a hospital gown and a member of the medical team will insert a needle into a vein in your arm, which can be used to give antibiotics, pain relief or sedation.

If you have any allergies, you must let your doctor know. If you have previously reacted to intravenous contrast medium, the dye used for kidney x-rays and CT scanning, then you must tell your doctor about this.

What actually happens during a percutaneous biliary drainage?

You will lie on the x-ray table, generally flat on your back. You will have leads attached to your back to monitor your pulse, a blood pressure cuff on your arm and a clip on your finger to record oxygen levels. If you require sedation, you will have a small sponge placed into your nose to deliver oxygen.

The consultant radiologist will keep everything sterile and will wear a theatre gown and operating gloves. Your skin will be cleaned with antiseptic and you will have some of your body covered with a theatre towel.

The consultant radiologist will use the x-ray equipment and ultrasound machine to decide on the most suitable point for inserting the fine, plastic tube, called a drainage catheter. This is generally between two of your lower ribs, on the right side. Your skin will be anaesthetised with local anaesthetic and a fine needle inserted into the liver.

When the radiologist is sure that the needle is in a satisfactory position, in one of the bile ducts, a guide wire will be placed through the needle, into the bile duct, which then enables the plastic drainage catheter to be positioned correctly.

The procedure may finish at this stage, with the catheter being fixed to the skin surface and attached to a drainage bag. Alternatively, it may be possible to pass a permanent metal tube, called a stent, across the obstruction, to relieve the blockage. Even if this is done, a temporary external catheter may be left in place, attached to a drainage bag.

Will it hurt?

Unfortunately, it may hurt a little, for a very short period of time, but any pain you have should be controlled with painkillers. When the local anaesthetic is injected, it will sting to start with, but soon wears off and the skin and deeper tissues should then feel numb. Later, you may be aware of the needle, or the wire and catheter, passing into the liver and, sometimes this is uncomfortable. There will be a member of the clinical team nearby looking after you. If the procedure does become painful for you, then they will be able to arrange for you to have more painkillers or sedation through the needle in your arm. Generally, placing the catheter in the liver only takes a short time, and once in place it should settle down.

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 may be over in 45 minutes, or occasionally it may take longer than 90 minutes. As a guide, expect to be in the x-ray department for about an hour and a half altogether.

What happens afterwards?

You will be taken back to your ward on your bed or 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 problems. You will generally stay in bed for a few hours, until you have recovered.

If you have an external drainage catheter, attached to a bag, it is important that you try and take care of this. You should try not to make any sudden movements, for example getting up out of a chair, without remembering about the bag, and making sure that it can move freely with you. However, you will be able to lead a normal life with the catheter in place. The bag needs to be emptied fairly frequently, so that it does not become too heavy, but the nurses will want to measure the amount in it each time. Taking an external catheter out does not usually hurt. If you have a metal stent placed and no external drain, then all that remains is a small puncture site, which is covered by a small plaster.

How long will the catheter stay in, and what happens next?

These are questions, which only the doctors looking after you can answer. It depends, for example, on whether you have a temporary external drainage catheter in place, or whether a metal stent has been placed across the blockage. You may require further x-rays or scans to check that the obstruction has been relieved, and to try and determine the cause of the obstruction.

Are there any risks or complications?

Percutaneous biliary drainage is a very safe procedure and there are very few risks or complications that can arise. Perhaps the biggest problem is being unable to place the drainage tube satisfactorily in the bile duct. This is because, even though the duct is blocked, it may not become abnormally wide, and it is difficult to place a needle into a normal sized bile duct. If this happens, your doctor will arrange another method of overcoming the blockage, which may involve surgery.

Sometimes there is a leak of bile from the bile duct where the tube has been inserted, resulting in a small collection of bile inside the abdomen. This can be painful. Generally, once the catheter is draining bile satisfactorily, the leak should stop. However, if this becomes a large collection, it may require draining.

As Patients with jaundice are more likely to have difficulties with blood clotting, there may be slight bleeding from the surface of the liver where the catheter is inserted. On rare occasions this may require blood transfusion. On very rare occasions, this may become severe and require an operation or another radiological procedure to stop it.

Despite these possible complications, the procedure is normally very safe and will almost certainly result in a great improvement in your medical condition. Very occasionally an operation is required, but if the percutaneous biliary drainage had not been attempted, then this operation would have been necessary anyway.

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.

Consent

Although you consent for this treatment, you may at any time after that withdraw such consent. Please discuss this with your medical team.

Percutaneous biliary drainage is considered a very safe procedure, designed to save you having a larger operation. There are some slight risks and possible complications involved, and although it is difficult to say exactly how often these occur they are generally minor and do not happen very often.

Sources of information

This leaflet is based on information from the Clinical Radiology Patients Liaison Group (CRPLG) of The Royal College of Radiologists and the British Society of Interventional Radiology (BSIR) who have given their permission for it to be reproduced.

Important information

Please remember that this leaflet is intended as general information only. It is not definitive. We aim to make the information as up to date and accurate as possible, but please be warned that it is always subject to change. Please, therefore, always check specific advice on the procedure or any concerns you may have with your doctor.

Your comments

We are always interested to hear your views about our leaflets. If you have any comments, please contact the Patient Experience Team on 01323 417400 Ext: 5860 or by email at: esh-tr.patientexperience@nhs.net

Hand hygiene

The Trust is committed to maintaining a clean, safe environment. Hand hygiene is very important in controlling infection. Alcohol gel is widely available at the patient bedside for staff use and at the entrance of each clinical area for visitors to clean their hands before and after entering.

Other formats

If you require any of the Trust leaflets in alternative formats, such as large print or alternative languages, please contact the Equality and Human Rights Department.

Tel: 01424 755255 Ext: 2620

After reading this information are there any questions you would like to ask? Please list below and ask your nurse or doctor.

Reference

The following clinicians have been consulted and agreed this patient information:

Dr Giles; Consultant Radiologist, Dr Neal Barlow; Consultant Radiologist, Dr Mo Faris;
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The directorate group that have agreed this patient information leaflet:

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