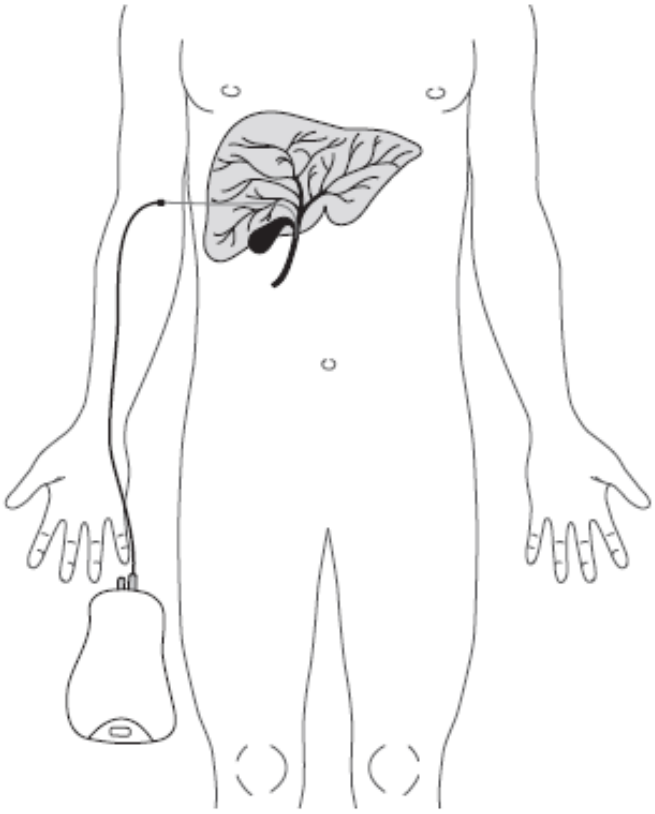
Percutaneous Transhepatic Cholangiogram (PTC) and Biliary Drainage

Introduction, benefits and alternatives

PTC is a procedure performed by a radiologist (specialist X-ray doctor) who takes X-ray pictures of the bile ducts which are tubes inside the liver. These tubes normally carry the bile from the liver to the bowel. A thin needle is passed through the skin on the right side between the ribs or in the upper central part of the tummy.



You will more than likely have had other pictures of your liver and bile ducts taken by ultrasound, CT (computed tomography) or MRI (magnetic resonance imaging) scan. PTC is usually recommended either to get more detailed pictures of the bile ducts, or as the start of a procedure such as placing a biliary drainage tube, placing a stent to bypass a blockage in the bile duct, or sometimes to try to widen narrow points in the bile ducts with a balloon.

Endoscopic retrograde cholangiopancreatography (ERCP) is an alternative way of getting access to the bile duct. This involves passing a tube with a camera (the endoscope) through the mouth. If ERCP is the better alternative in your case, the doctors will discuss it with you. PTC is often required when ERCP is not possible or has already been tried and failed. PTC may be the only possible option after some surgical operations. Sometimes PTC and ERCP are used together as a ‘combined procedure’.

Information for Patients

Your doctors will discuss the options with you and explain the particular procedure relevant to your case as PTC can be used in several different situations.

For example:

- Drainage of bile may be necessary to deal with infection or to prepare you for an operation by reducing jaundice
- Putting in a metal stent (a hollow metal tube to keep the duct open) is usually a permanent treatment for jaundice due to cancer
- Strictures or narrowing of the bile ducts are often due to scarring after surgery and may be treated by widening with a balloon
- There may be other reasons for a PTC in certain cases
- If you would like the procedure to be made clear please ask the doctors to draw a little diagram to explain the exact procedure planned for you. You will have to be an inpatient in hospital for this procedure to be performed. In some cases you may be allowed to go home after a short stay in hospital. In other cases this procedure may be part of a longer stay in hospital. Sometimes several visits to the Imaging (X-ray) department are needed to finish all the procedures. This may mean you have to stay in hospital for a week or two or be re-admitted for the later procedures

We perform about 100 or more PTC procedures per year at the Queen Elizabeth Hospital Birmingham.

Preparation

You should have nothing to eat for 4–6 hours before the procedure. You may drink clear fluids like water or you may have an intravenous drip in your arm. We do not want you to be dehydrated. Your blood will be tested before the procedure. You may need to have an injection of vitamin K or special transfusions to correct blood clotting before the procedure. Very abnormal blood clotting may delay the procedure for a day or two depending on the overall urgency of your condition. If your blood is checked and vitamin K given two days before, then clotting is usually normal at the time of the PTC.

You will have antibiotics either as a tablet or as an injection in a needle in your arm before going to the Imaging Department. A needle in your arm is necessary so that you can receive intravenous sedation and pain killers during the procedure.

Please ask any questions that you want about the reasons for the procedure and the procedure itself.

You may be in hospital already or you may need to be admitted to hospital specifically on the day of the procedure or the day before the procedure.

You will be taken to the Imaging Department on your bed. You will meet the doctor who is going to do the procedure and one of the nurses who will be looking after you during the procedure.

Please tell us if you have any allergies.

X-rays may damage an unborn child. Please tell the doctors and nursing staff if there is any possibility at all that you might be pregnant.

The procedure

In the X-ray room you will have to lie on a special table. There is a large X-ray camera and television screens. Wires will be attached to your body and your finger to check on your pulse and

breathing. You will be given oxygen to breath through a mask on your face. You will have injections of sedation / relaxant and pain killers through the needle in your arm.

These may or may not make you sleepy. If you feel pain at any stage please let the doctor and nurses know so that they can adjust the medications.

You may have an ultrasound scan with jelly on the skin before or during the procedure.

You will have an injection of local anaesthetic in the skin at the site for the thin needle. The local anaesthetic may sting for a short while. Sometimes a needle has to be placed in more than one spot and you will have more that one injection of local anaesthetic.

After you have been given relaxant, pain killers and local anaesthetic, the thin needle will be passed through your skin and adjusted until it is in the right place inside the liver. X-ray dye (contrast medium) will be injected through the needle and pictures will be taken. In some cases you may be asked to hold your breath or to turn into specific positions for the pictures.

In most cases after these pictures we will carry on to place a tube inside the bile ducts and possibly perform further procedures. The exact procedures intended in your case will have been discussed with you.

In some patients only a few pictures are needed and then the procedure is over and the needle is taken out.

If we are intending to place a drainage tube in the bile ducts, it will be inserted at the site where the needle passes through the skin. In most cases this tube is connected to a bag which collects bile outside your body. However, in some cases the tube can be placed through a blockage inside the bile ducts. When this is possible, some of the bile will pass inside and you may not need the bag on the outside after a few days. In either case the tube will be fixed to your skin with a stitch and some form of dressing. If we are putting in a permanent stent, this will be done through the same point but you will probably have a small tube on the outside for a few days.

It is not always possible to complete the whole planned procedure in one session. If this should happen, you will have a drainage tube left in and will go back to the Imaging Department to complete the procedure after a few days. In such cases the success rate is usually higher on the second attempt.

After the procedure

You will be returned to the ward in your bed. Bile will drain into the bag. If you have jaundice or infection in the bile ducts this should improve as a result of the procedure. Unless you are having other particular treatments you will be allowed to drink and eat as soon as you are awake enough after the procedure.

Aftercare

In certain special cases you may be allowed to leave the hospital after several hours rest in the ward. Most patients stay in the hospital at least one night, and often some days after the procedure. This will depend on your exact condition and whether further procedures have been planned such as replacement of the drainage tube by a permanent internal stent or a surgical operation.

You may need to continue antibiotic treatment. If you have any pain as a result of your condition or because of the drainage tube then you will be given pain killers as necessary.

Information for Patients

The drainage tube and bag are only kept on for a few days in most patients but sometimes we need to keep them in place for longer e.g. a few weeks or even months. In very rare cases, the drainage tube is permanent. If the tube is kept draining for a long time then you will need to drink extra fluid and take extra salt to compensate.

Risks and complications

The risks of the procedure have to be considered in combination with your particular situation and degree of illness. In very sick patients the risks are greater but your doctors will consider your situation carefully and discuss their recommendations with you.

You may feel pain during or after the procedure. If you do please let us know so that you can be given appropriate treatment to stop it.

There is a risk of infection within the bile ducts which can lead to a high temperature and generalised shivering. This risk is reduced by giving antibiotics before and after the procedure but in some cases an intravenous drip and further antibiotic treatment is necessary. In the worst cases, this type of infection can be very serious and requires intensive treatment.

The procedure may cause bruising or bleeding inside the body. It is quite common to see a small amount of blood in the drainage bag but this is usually not at all serious. In rare cases there may be more serious bleeding which may need further treatment such as a blood transfusion, more procedures in the Imaging Department to stop the bleeding or in severe cases a surgical operation.

There may be leakage of bile from the liver or around the drainage tube. If this happens you may require a change of the type of drainage bag or special dressings. We will also check that the drainage tube is in the right place as sometimes bile leakage can occur because the tube has slipped out of position. Sometimes this will mean you have to go back to the Imaging department to have the tube re-positioned.

These risks do not usually cause serious problems to our patients. However if you suffer any complications we will treat you as quickly and effectively as we can.

Further information

Before you have the procedure we would like you to have as much information as you wish about your particular case and the treatment options that we propose. If you have any questions please ask your consultant or the doctors or nurses in the outpatient clinic or ward. If you would like any further information about the Imaging department or the procedure to be performed there, please telephone Dr Karkhanis or Dr Mehrzad on **0121 371 4283**.

You may find further information about these procedures on the Internet. One possible source of information is the Royal College of Radiologists at **www.rcr.ac.uk** please look under ‘Patients and Carers’ and ‘Patient Information’.

Please note that this leaflet is only a guide. Your doctors in outpatients, on the wards and in the Imaging Department will discuss your case and your particular circumstances with you direct.

Contact numbers

Ward 726: **0121 371 7305**
Pre-screening: **07909 687519**
Liver Outpatients: **0121 371 4414**
Imaging Department Dr Karkhanis / Dr Mehrzad: **0121 371 4283**

Information for Patients

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If you require this information in another format, such as a different language, large print, braille or audio version please ask a member of staff or email interpreting.service@uhb.nhs.uk