

Having a Percutaneous Transhepatic Cholangiogram (PTC)

Information for Patients

In this leaflet:

Introduction	2
What is a PTC?	2
Why do I need a PTC?	2
Are there any risks?	3
Are there any alternatives?	4
What do I need to do to prepare for the procedure?	4
What happens before the procedure?	5
What happens during the procedure?	5
What happens when the procedure is finished?	7
At home	8
Any questions?	8
More information	8
How do I make a comment about my procedure?	8

Introduction

This leaflet tells you about having a percutaneous transhepatic cholangiogram (PTC). It explains what is involved and what the possible risks are.

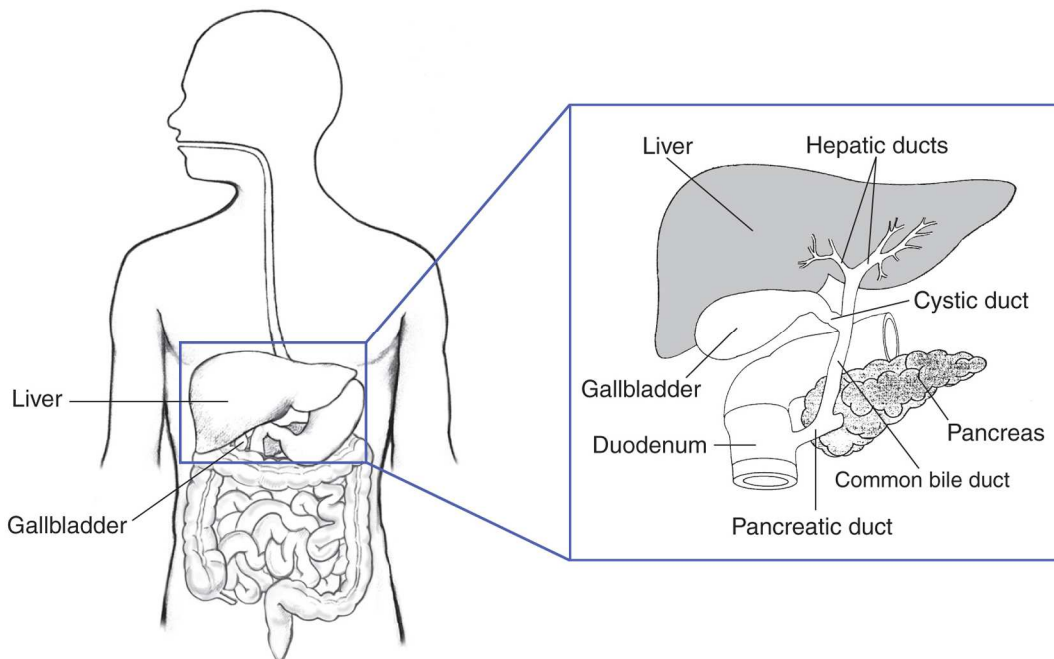
If you have any questions or concerns, please do not hesitate to speak to a doctor or nurse caring for you in the Interventional Radiology department.

What is a PTC?

A percutaneous transhepatic cholangiogram (PTC) is a procedure performed by a radiologist (specialist X-ray doctor) who uses X-rays to look at the bile ducts (the tubes in your liver which carry bile from your liver to the bowel). Contrast medium (X-ray dye) is injected directly into a bile duct in the liver through a thin needle inserted through the skin. The contrast allows detailed images (pictures) of the bile ducts to be seen using X-rays.

Why do I need a PTC?

Bile is a fluid that helps digest fat in food. It is produced in the liver and flows through bile ducts or tubular passageways to the gallbladder where it is stored. When needed the gallbladder contracts to push bile into the intestines via the bile ducts. If bile cannot be removed from the body due to a narrowing or blockage of the bile ducts, it collects in the blood and is seen as a yellow discolouration of the skin and eyes (jaundice). It can also result in itching and infection.



There are several conditions that can cause a blockage or narrowing of the bile ducts, including:

- Inflammation –pancreatitis (inflammation of the pancreas), sclerosing cholangitis (inflammation of the bile ducts)
- Tumours – cancer of the pancreas, gallbladder, bile duct, liver or enlarged lymph nodes
- Gallstones, either in the gallbladder or bile ducts
- Injury to the bile ducts during surgery
- Infection

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) to identify a narrowing or blockage of the bile ducts. PTC is usually recommended either to get more detailed pictures of the bile ducts, or as the start of a procedure to treat a narrowing or blockage of the bile ducts such as:

- Placement of a drainage catheter (tube) across the narrowing to deal with infection or to prepare you for an operation by reducing jaundice
- Sampling of tissue (biopsy) to make a diagnosis
- Removal of gallstones (stone-like objects that form in the gallbladder or bile ducts)
- Balloon dilatation (stretching) of the narrowed area
- Placement of a stent (a hollow metal or plastic tube) across the narrowing to keep the bile duct open. This is often a permanent treatment for jaundice due to cancer.

You will find more information about each of these procedures in the section of this leaflet called ‘What happens during the procedure?’ The doctor will discuss all of this with you before proceeding, and will be happy to answer any questions you may have.

Are there any risks?

PTC and biliary drainage is a safe procedure, but as with any medical procedure there are some risks and complications that can arise. There is a 0.1 per cent (or one in 1000 patients) risk of the following complications after PTC:

- **Bleeding:** the liver is a large organ containing a lot of blood. There is a risk of bleeding, though this is generally very slight. If the bleeding were to continue, then it is possible that you might need a blood transfusion. Very rarely, an operation or another radiological procedure is required to stop the bleeding.
- **Infection:** If the bile is infected, there is a small risk that infection might be released into your bloodstream, making you unwell for a period. We will give you antibiotics before the procedure to help minimise this risk.

- **Reaction to the 'contrast medium'** (the special dye containing iodine used in the examination). This is very rare and occurs in 0.0025 per cent or one in 40,000 patients.

The use of imaging guidance such as X-rays or ultrasound during the procedure helps to minimise the risk of complications. The radiologist (specialist X-ray doctor) performing the procedure will discuss the risk factors relevant to your condition with you before starting and will be happy to answer any questions you may have.

Are there any alternatives?

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'.

What do I need to do to prepare for the procedure?

Your blood clotting can be abnormal if your bile ducts are blocked. You will need to have a blood test before the procedure to check this. Your doctor or clinical nurse specialist will tell you about this and how to arrange it. 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 you are taking Warfarin, Clopidogrel, aspirin, other blood thinning medications or metformin please inform the Radiology department at least one week before the procedure, as these may need to be stopped for a number of days before the examination. Please continue to take all your other medications as usual.

Please also let us know if you have asthma, or are allergic to any medications, skin cleaning preparations, iodine or the contrast medium (special dye used to highlight blood vessels on X-rays) used for the PTC.

You may already be an inpatient or, if not, you will be admitted into hospital on the previous day or the day of your procedure. On admission you will be informed of the approximate time of your procedure. However, this may change due to unforeseen circumstances. In some cases you may be allowed to go home after an overnight or short 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.

You will not be allowed to eat for 6 hours before the procedure. You may drink clear fluids like water up to 3 hours before the procedure.

If you have diabetes, please phone the Radiology department for specific advice on 01225 824375.

A cannula (needle) will be inserted into a vein in your hand/arm. This allows us to administer antibiotics to minimise the risk of infection. You may have an intravenous drip in your arm to keep you hydrated.

If you are pregnant, or think you may be pregnant, you must tell the imaging staff so that appropriate protection or advice can be given.

What happens before the procedure?

When it is time for the procedure you will be taken on your bed to the Radiology department, where you will be welcomed by the radiology staff:

- The Radiologist is a doctor specially trained to interpret X-rays and scans and to perform image-guided procedures.
- Radiographers are specially trained health professionals who move and control the radiographic equipment during the procedure.
- Radiology Nurses work with the radiologists and care for the patient during interventional procedures.

A nurse will check your details. If you are allergic to anything (such as medicine, latex, plasters) please tell the nurse.

The radiologist will explain the procedure answering any questions you or your family may have. When all your questions have been answered you will be asked to sign a consent form for the procedure.

What happens during the procedure?

You will be taken into the Interventional radiology room and helped onto the X-ray table. The radiologist will perform an ultrasound scan of the liver before starting the procedure.

You will have a device attached to your finger to monitor your heart rate and breathing. A cuff will be placed on your arm to monitor your blood pressure (please inform the nurse if there is a reason why a certain arm cannot be used). You will be given oxygen via a mask or tubing under your nose.

You may be given a sedative and painkillers through the cannula in your hand/arm. You will not be fully unconscious during the procedure but you should be drowsy and relaxed.

The upper part of your abdomen (tummy) will be cleaned with antiseptic fluid and covered with a sterile drape (towel).

The radiologist will give you an injection of local anaesthetic to numb the area. This may cause some stinging, but it will only last a short time.

An X-ray camera suspended over the table will be used to take images during the procedure. It will come close to you but will not touch you.

A fine needle will be passed through the skin and adjusted under X-ray guidance 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. You may experience a warm sensation throughout your body. This is normal and wears off quickly. You may be asked to hold your breath and keep still while X-ray pictures are taken.

In most cases, after taking these pictures, we will carry on to perform further procedures to treat a narrowing of the bile duct. The exact procedures intended in your case will have been discussed with you. They may include:

1. Biliary drainage

Biliary drainage is when an external drain (a tube) is inserted in order to drain and remove excess bile from the bile ducts into a collecting bag. The drainage tube is secured to your skin and covered with a dressing. It may be left in for a few days or until your condition has improved.

2. Biliary Biopsy

Occasionally a sample of tissue is needed to diagnose the cause of the bile duct narrowing and plan your treatment. This may be obtained by passing a small biopsy needle through a tube (sheath) placed from the site where the needle passes through the skin to the narrowing or blockage of the bile duct.

3. Biliary balloon dilatation

Biliary dilatation is when the stricture (narrowing) within the bile ducts is opened up with a balloon attached on the end of a catheter. This balloon is inflated at the point of narrowing in order to stretch the duct open.

You may find this uncomfortable and experience some pain. This should only last for a short time and usually goes once the balloon has been deflated. Please let the nurse or doctor know if you have any pain so that painkillers can be given to relieve this. A drainage catheter may be inserted afterwards if necessary.

4. Biliary stenting

Biliary stenting is when a plastic or metallic stent is placed across the stricture (narrowing) in order to relieve the blockage. A drainage catheter may be left in place for

a few days or until your doctors are satisfied that the bile duct stent is working properly. A metal stent will usually remain in your body permanently and is nothing to worry about.

If you have an MRI scan in future, you will need to tell the imaging staff that you have a stent inserted into your bile duct.

The procedure time can vary depending on what is being done. A PTC alone usually takes from 30 minutes to 1 hour. Biliary dilatation/stenting takes from 45 minutes to 1 hour 30 minutes.

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 Radiology Department to complete the procedure after a few days. In such cases the success rate is usually higher on the second attempt.

What happens when the procedure is finished?

You will be taken back to your ward, where you will need to rest in bed for about 6 hours. You will have your pulse, blood pressure and if necessary your temperature taken to ensure there have been no complications.

You can eat and drink normally unless instructed otherwise by your doctor. Please tell the nursing staff if you feel unwell or feverish.

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 painkillers as necessary.

If you have a drainage catheter, you will need to take care of the drainage bag and make sure that the tube does not kink (bend), or the bile will not be able to pass through. Please be careful that the tube does not get pulled, as this could cause it to fall out. The nursing staff will measure and record the amount of bile collected in the bag and change your wound dressings regularly.

In most patients the drainage tube and bag are only kept on for a few days but sometimes they need to stay 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.

Your doctor will review your condition to decide when the catheter should be removed and when you can go home.

At home

You may have a small amount of bruising where the catheter was inserted. This is normal and is nothing to worry about. However, if you notice any swelling or redness around the insertion site, have a high temperature or continue to experience pain, please either contact your GP or go to your nearest accident & emergency (casualty) department.

Any questions?

We will do our best to make your visit as comfortable and stress free as possible. If you have any questions or suggestions for us, please contact the Interventional Radiology department on 01225 824375.

More information

For general information about Radiology departments, visit The Royal College of Radiologists' website: <https://www.rcr.ac.uk/public-and-media/what-expect-when>

For information about the effects of x-rays read the National Radiological Protection Board (NRPB) publication: 'X-rays how safe are they?' on the website: http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1194947388410

How do I make a comment about my procedure?

If you have any concerns or suggestions following your procedure, please contact the [Patient Advice and Liaison Service \(PALS\)](#),
Royal United Hospital Bath NHS Trust, Combe Park, Bath BA1 3NG.
Email: ruh-tr.PatientAdviceandLiaisonService@nhs.net
Tel: 01225 821655 or 01225 826319