

# Percutaneous transhepatic cholangiogram (PTC) and biliary drainage

An information guide



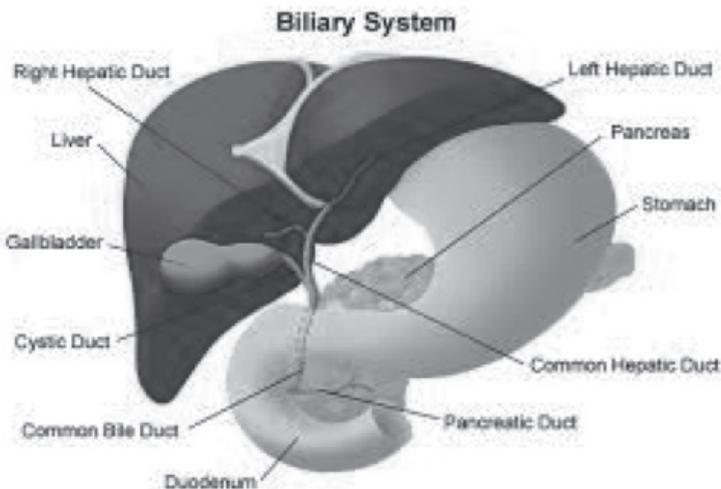
# Percutaneous transhepatic cholangiogram (PTC) and biliary drainage

This leaflet explains what the procedure known as percutaneous biliary drainage involves and what the possible risks of this procedure are. It is not meant to replace a discussion with your doctor, specialist nurse or nursing team but can act as a starting point for such a discussion.

## What is biliary drainage?

The biliary system is made up of bile ducts. They start in the liver and end at the first segment of the small intestine. This part of the small intestine is called the duodenum. The bile ducts resemble tree branches. Bile moves from smaller ducts into larger ones before reaching the duodenum. (Fig 1).

Figure 1



If a bile duct is narrowed or blocked by scar tissue, stone or by a tumour, bile can no longer flow into your duodenum. This causes the bile to collect, or 'back-up' into your liver. The build-up of bile can cause several symptoms. These include nausea, vomiting, fever, itching, and jaundice. Jaundice is yellowing of the eyes and skin. Your urine may appear dark since bile leaves your body through your kidneys. Your stools may appear light because the bile is not reaching the digestive system. You may develop an infection, including fever and chills. The goal of a biliary drainage catheter is to relieve these symptoms by creating a new way for the bile to drain.

### **Why do I need percutaneous biliary-drainage?**

You may have already had other tests, such as an ultrasound scan (USS) or a Computerised Tomography (CT) scan which have shown that your bile ducts are blocked. You may also have had an unsuccessful ERCP (endoscopic procedure) and the doctors looking after you have decided that you would benefit by having a percutaneous (through the skin) drainage tube inserted. This may then be easily changed for an internal drainage tube at a later date.

### **What happens prior to the procedure?**

The ward staff will advise you when to stop eating and drinking. A blood test is also required to ensure your blood clotting level is within the normal range. You will be asked to wear a hospital gown and sign a consent form agreeing to undergo the procedure.

### **Are there any risks with this procedure?**

- The doctor may be unable to place the drainage tube. This is usually due to the ducts not being wide enough for the needle to be placed
- You may have an allergic reaction to the X-ray dye or other medication

- Infection can occur in the area where the catheter was inserted.
- Bleeding is also a potential complication
- If you are jaundiced you may have problems with blood clotting, causing slight bleeding from the wound site.

### **How long does it take?**

The procedure usually takes one hour.

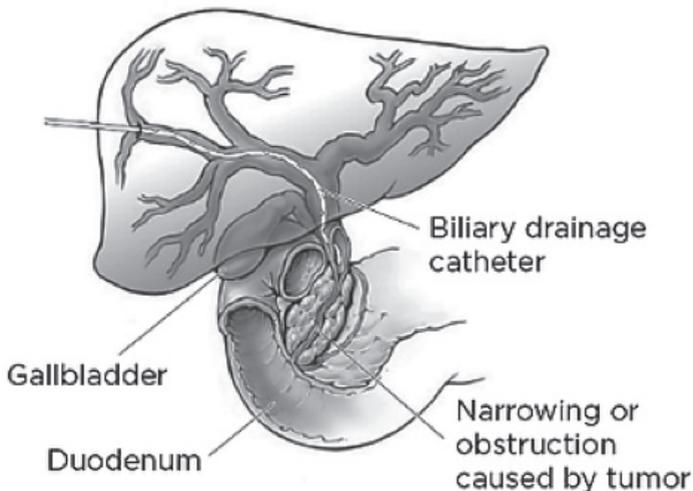
### **What happens during the procedure?**

Once you arrive in the X-ray department you will be transferred onto the X-ray table. An intravenous (within a vein) infusion (IVI) will be started. You may wear an oxygen mask and a probe will be attached to your finger to monitor your oxygen levels and blood pressure. Medication may be given through the IVI to make you feel comfortable and sleepy. The part of the body covering the liver will be cleaned and then covered with sterile drapes. The doctor will numb the skin with a local anesthetic (LA), and a needle will be passed through the numbed area and into the liver. This may require one or two punctures. Guided by an ultrasound machine the radiologist will inject X-ray dye into the bile ducts of the liver, and take X-ray photographs. Depending on what the X-ray reveals, one of the following will be inserted:

## Types of drainage:

**External-biliary-drainage** - this catheter passes through the skin and into the bile ducts. The end of the catheter that is in the bile ducts is placed above the blockage (figure 2). At the end of the procedure, there will be a catheter extending from your body. It will be attached to an external collecting bag.

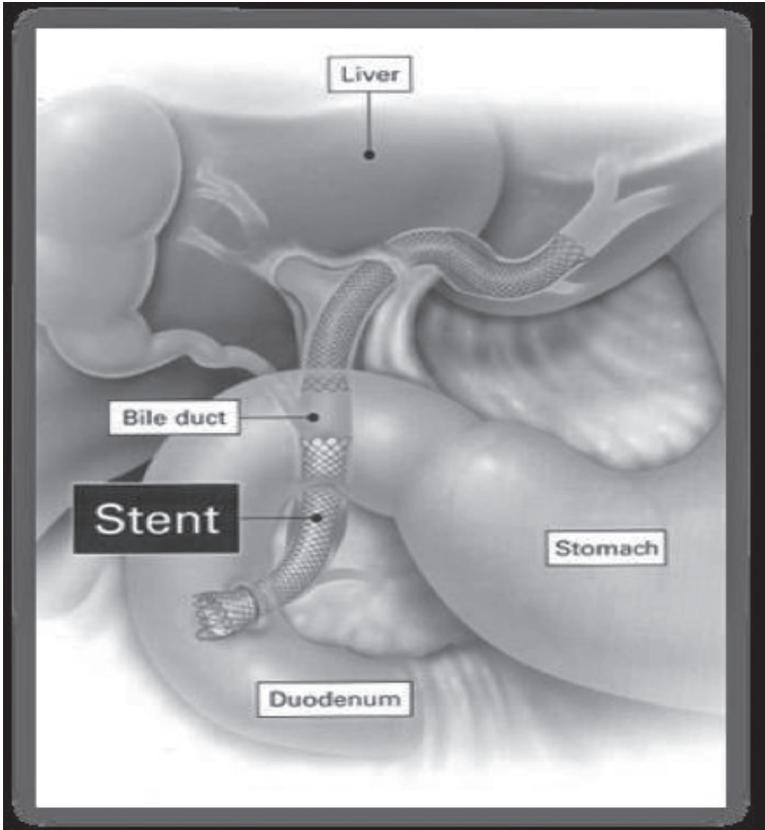
Figure 2



**Internal-external biliary-drainage** - this catheter passes through the skin and into the bile ducts. It is guided across the obstruction. One end of the catheter sits in the small intestine. The other exists outside your body and will be attached to a drainage bag. This lets bile flow in two directions. It can go out to the external collecting bag or into the small intestine. This is the most common type of drainage. However, it is not always possible.

**Internal biliary drainage or stenting** - a small number of patients only have a small catheter extending from their body. This occurs when a metal or plastic tube (stent), is placed across the blockage. Figure 3 shows a metal stent.

Figure 3 metal stent



The stent holds the blocked area open. A day or two after the procedure, you will return to Interventional Radiology to check that the procedure was successful and the stent is working well. If it is, the external catheter will be removed. In some patients, it may be necessary to leave the external drain in place long term. You may already have noticed that your stools are becoming darker and your urine is lighter - this is a sign that the stent is working. Please be mindful that for some complex narrowing of the duct more than one stent or temporary drain may be necessary to achieve adequate

bile drainage. This will require several visits to the radiology department.

### **What happens after the procedure?**

You will be transferred back to the ward where your blood pressure, temperature and pulse will be monitored. You may also receive IV or oral antibiotics. You need to rest in bed for a short time until you have recovered. Although the drain is usually secured with a stitch, please be aware that you are connected to a drainage bag. Try not to make any sudden movements, such as getting out of the bed or chair. The nurses will secure the bag to your clothes to help prevent it becoming displaced, the bage will need to be emptied regularly and the nurses must measure and record the amount of bile each time. It is important to drink plenty of fluids to compensate for fluid loss via the drain.

On occassions it may be necessary to supplement your fluid intake with IV fluids to prevent dehydration.

**If English is not your first language and you need help, please contact the Interpretation and Translation Service**

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