University Hospitals of Leicester
NHS Trust

Having a drain or stent to unblock bile ducts (percutaneous biliary drainage or stent)

Radiology Department

Information for Patients

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Introduction

This leaflet tells you about 2 procedures:

- **Having a drain put through your skin into your bile ducts to unblock them (percutaneous biliary drainage).**
- **Having a stent put into your bile ducts (biliary stent insertion).**

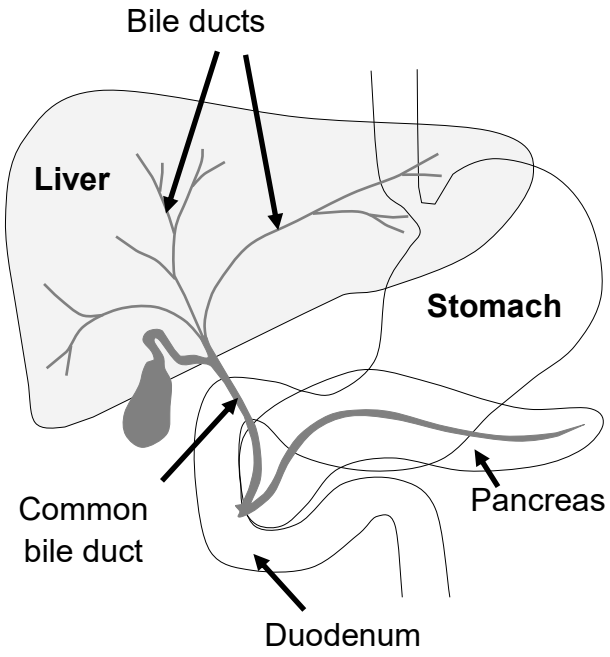
Please read all of this leaflet. It tells you how the procedures are done and what the possible risks are. This will help you to decide if you want to have the procedure or not.

What are bile and bile ducts?

Bile is a liquid made by the liver. It helps you to break down (digest) food.

Bile drains through small tubes (ducts) from your liver into a bigger tube called the common bile duct. The bile is then emptied into the first part of the bowel (duodenum) after the stomach.

If the common bile duct or 1 of the main bile ducts gets blocked (biliary blockage), your bile cannot drain normally. Bile can then build up in the liver. This causes your skin to look yellow (jaundice). This can become a very serious condition which needs to be treated.



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What is the treatment for blocked bile ducts?

There are 3 ways we can treat blocked bile ducts:

- We can put a small flexible camera (an endoscope) through the mouth and stomach to the opening of the bile duct. We can then see the blockage and clear it.
- When we are looking at the bile duct opening with an endoscope, we can put in a drainage tube called a stent. This is so your bile can drain into your bowel. This procedure is called an ERCP.
- If the above procedures cannot be done or are not available, we can do a percutaneous biliary drainage procedure to treat the blockage. This leaflet tells you about this procedure.

What is a percutaneous biliary drainage?

Percutaneous means 'through the skin'. We put a plastic drainage tube into the blocked bile ducts through a small cut in your skin. The bile then drains out through the tube into a small bag. The bag hangs outside your body.

Sometimes we put a longer tube with more drainage holes through the blockage. This is so the bile can drain inside along its normal route as well.

What is a biliary stent procedure?

When we have put a drainage tube in the bile duct, we can sometimes put it through to the blockage in the bile duct and into the bowel (duodenum). We can then put a short tube (stent) through the blockage between the bile duct and the bowel. This stent lets your bile drain into your bowel in the normal way. This tube is called a biliary stent. We can put a stent in through the same cut in the skin.

We may put a stent in straight after a percutaneous biliary drainage procedure. Or, we may do it as a separate procedure 1 or 2 days later. We will tell you at the start of your biliary drainage procedure if you are going to have a biliary stent put in as well.

Most stent tubes stay in for the rest of your life (permanent). Some stent tubes are temporary and can be removed at a later date.

Why do I need a percutaneous biliary drain or stent?

You may have had an ultrasound scan, MRI or a CT scan that has shown that 1 of your bile ducts is blocked. The most common causes of a blockage are gallstones and inflammation around the pancreas. These tests may or may not have shown the actual cause for your blockage. Sometimes we only find out what is causing a blockage when we have done a biliary drainage procedure.

In your case, it is felt that a percutaneous biliary drainage is the best treatment. Sometimes another procedure or surgery may be needed to treat the blockage after this procedure.

What if I take blood thinning medicines?

If you are taking medicine that thins the blood (anticoagulants or antiplatelets) you may need to stop taking it or take a different one for a few days.

Please call the radiology department for advice as soon as possible. The phone number to call is on your appointment letter. We will ask you what blood thinning medicine you are taking, how much you take (the dose), and what you are taking it for.

Common examples of these drugs include aspirin, warfarin, clopidogrel (Plavix®), apixiban (Eliquis), edoxaban (Lixiana), rivaroxaban (Xarelto), ticagrelor (Brilinta), dalteparin, enoxaparin and heparin.

You may have already been given instructions on blood thinners by the doctor who referred you for this procedure. Please still call the radiology department so we can check this. If you are taking aspirin the doctor who referred you for this procedure or the radiology doctor will decide if you need to stop taking it.

What if I take other medicines?

If you are taking a type of drug called SGLT-2 inhibitors, you will need to stop taking this medicine for 3 days before your procedure. Examples of these drugs include dapogliflozin, canagliflozin and empagliflozin. These medicines can be used in patients that have diabetes, heart failure or chronic kidney disease.

Important information

The contrast liquid used in your procedure has iodine in it. It is removed from your body by your kidneys in your wee (urine) or at your routine dialysis if you have dialysis.

Please tell the X-ray staff when you arrive if:

- **You are allergic to iodine or rubber (latex)**, or you have any other allergies or have asthma.
- **You have had a reaction in the past to a contrast liquid injected into a vein (intravenous contrast).** This is the dye used for CT scanning and X-rays of your heart, blood vessels and kidneys.
- **You are on kidney dialysis or have any problems with your kidneys**.
- **You have diabetes.**
- **There is any chance that you may be pregnant.**

The radiographer will ask you some questions about your health before the procedure. This is to check if you might be allergic to the contrast liquid.

Asking for your permission (consent)

The doctor who referred you should have talked to you about the reasons for this procedure and any other options.

You have been referred to a doctor who specialises in imaging and X-ray treatments (radiologist) for this procedure. They will check that you understand why the procedure is being done, the potential risks and the chances of success. You will sign a consent form to confirm this. This may be on an iPad or a paper form. **You should feel that you know enough before you sign the consent form.**

If after talking to the radiologist you do not want to have this procedure, then you can decide to say no. If the radiologist feels that your health problem has changed they will talk to you about if you still need the procedure. They may ask for the doctor who wanted you to have the procedure to talk to you and review your condition.

How do I get ready for the procedure?

- You need to be admitted to hospital as an inpatient (overnight stay in hospital). Most patients are already an inpatient in the hospital. Most patients stay at least 24 hours after the procedure.
- **Do not eat for 6 hours** before your procedure.
- **6 hours before your procedure,** you can still drink clear liquids like water, squash, or see-through drinks that are not fizzy. **This is up to 2 hours before the procedure.**
- **When there is 2 hours to go before your procedure**, you can take sips of water up to 170ml per hour. This is until you are about to go for your procedure. If you are in hospital the nursing staff can give you a cup with 170ml water.
- We will put a small needle (cannula) put into a vein in your arm. This is so that we can give you medicine if needed.
- We will ask you to put on a hospital gown and paper pants.
- We will give you a drug (sedation). This helps you feel more calm and relaxed. This may be before or during the procedure. The sedation will make you feel drowsy but not make you to sleep. Rarely, sedation can cause some problems with breathing.

For 24 hours after sedation you should follow the advice below:

- A responsible adult will need to be with you for 24 hours after the procedure. You will usually stay overnight in the hospital.
- Do not drink alcohol.
- Do not drive a vehicle or operate any machines or do anything needing skill or judgement.
- Do not make important decisions or sign any documents.
- Do not return to work until after 24 hours.

Who will be doing my procedure?

- A doctor who specialises in imaging and X-ray treatments (an interventional radiologist) will do the procedure.
- A radiographer will move and control the special X-ray equipment.
- A nurse and maybe a healthcare assistant will work with the radiologist and care for you.

- A student may also be in the room. If you do not want this, you can ask that a student is not in the room when you have your procedure.

What happens during the procedure to put in a drainage tube?

- We usually do this procedure in the Radiology department.
- You will lie down flat on your back on the X-ray table.
- We put a blood pressure cuff (strap) on your arm. We also put a small peg on your finger. These will all be attached to a monitoring machine. This is so we can check your blood pressure, your heart rate and your heart health.
- We will put ECG stickers on your chest to monitor your heart.
- We may give you some oxygen.
- We will use the X-ray equipment or ultrasound machine to decide on the best place for putting in the thin plastic drainage tube. This may be between 2 of your lower ribs, on the right side, or in the midline of your tummy.
- We will give you some sedation to help you feel relaxed. We will also give you a painkiller to reduce discomfort and an antibiotic to stop the spread of infection.
- We will keep everything clean (sterile). We clean your skin with antiseptic. This may feel cold. We cover some of your body with sterile sheets.
- We inject a local anaesthetic into the skin and deeper tissues to numb the area. You will feel a stinging pain to start with. This soon wears off and the skin and deeper tissues should then feel numb.
- We will make a very small cut in the skin for the needle and drainage tube.
- We will put a thin needle through the small cut and into your liver. We use ultrasound and X-rays to check where the needle is going.
- We inject contrast liquid through the needle. We can see this on the X-ray pictures. This helps us put the needle in the right place in your liver.
- When we are sure that the needle is in a good position, we put a guide wire through the needle and into the bile duct. This helps guide the drainage tube into place.
- We will then slide the plastic drainage tube along the wire and into the right place.
- You may be aware of the wire and catheter passing into the liver. You may feel some pain. We will have already given you a painkiller to ease this.
- If the procedure gets too painful for you, tell the nurse and other staff in the room. We will be able to arrange for you to have more painkillers through the needle in your arm.
- Putting the drainage tube in the liver usually only takes a short time. You may feel some pain. This usually starts to get better when the procedure is finished. You may still have ongoing discomfort around the drain tube when it is in place.
- Your procedure may finish at this stage. We will fix your drainage tube to your skin. We will connect the tube to a small bag which hangs outside your body. Your bile then drains into the bag. We will put a dressing over the tube on your skin.

What happens if I also have a biliary stent?

We may put in a small tube called a stent. This is put in across the blockage to widen the duct and relieve the blockage.

We do this through the same cut in your skin. We may be able to push the stent through the blockage to open it. The bile can then drain into the bowel in the normal way.

If we put a stent in, we may keep the drainage tube and drainage bag in place for a few days. We will take the tube and bag off when we know that the stent is working. We then put a dressing over the tube on your skin.

Most stent tubes placed this way stay in for the rest of your life (permanent). Some stent tubes are temporary and can be removed at a later date.

How long will the procedure take?

Every patient's situation is different. It is not always easy to know how difficult or how straight forward the procedure will be.

Having a biliary drain may take about 45 minutes. Sometimes it can take longer.

If you have a biliary stent as well, this may take another 45 minutes.

What happens after the procedure?

We will take you back to your ward. Nurses will do routine checks like taking your pulse and blood pressure. This is to make sure that there are no problems.

You will stay in bed for a few hours until you have recovered. The nurses will tell you later in the day when you can eat and drink.

If you have a drainage tube attached to a bag, it is important that you take care of this. Do not make any sudden movements. When you move, for example getting up out of a chair, you need to make sure that the bag can move freely with you. The dressing will be changed regularly.

You will be able to lead a normal life with the drainage tube in place. The bag needs to be emptied regularly. This is so that it does not become too heavy. The nursing staff will need to measure the amount in it each time before it is emptied.

In most cases we aim to sort out the blockage and remove the drainage tube and drainage bag before you go home from hospital. Sometimes patients do go home with the drainage tube in place. If this is the case we will give you information about how to care for it.

How long will it stay in and what will happen next?

This will be different for each patient. It also depends if you have a temporary drainage tube in place, or if a permanent metal stent has been placed across the blockage. . You may need more X-rays or scans. This is so we can check if your bile is draining correctly and to try to find out what is causing the blockage.

When the drainage tube is taken out it should not hurt.

Are there any risks or complications?

As with any procedure there is a risk of complications. Below are the most common risks and complications. The chance of these happening is different for each person. We will talk to you about your risks before you sign the consent form.

The chance of a major complication from having a percutaneous biliary drainage is about 8 in 100 people (7.9%). **The most common major complications are:**

- **Swollen pancreas (acute pancreatitis):** symptoms can be pain in the middle of your tummy which can get worse and cause pain in your back, feeling or being sick, high temperature of 38C or more and fast heart rate. The risk of pancreatitis is about 6 in 100 patients (6%). Most patients get better after 1 to 4 days of treatment. The risk of severe pancreatitis is about 1 in 100 patients (1%) or less.
- **Failure of the procedure:** in less than 5 in 100 patients (5%) it is not possible to place the drainage tube in a good position in the bile duct. If this happens the radiologist will talk to you and your consultant. You may need to have an operation to put in a drainage tube or stent.
- **Bleeding:** the risk of bleeding is about 3 or 4 people in 100 (3.5%). Patients with jaundice are more likely to have difficulties with blood clotting. You may have slight bleeding from the surface of the liver where the drainage tube is inserted. Rarely the bleeding can become severe and need an operation or another X-ray procedure to stop it. If you have any pain afterwards then you must tell the staff on the ward. We will monitor your health on the ward to reduce the risk of bleeding.
- **Infection:** there is a risk of infection after the procedure. The risk of a serious infection called sepsis is about 5 in 100 patients (5%). We will give you an antibiotic to prevent sepsis. Sepsis happens when your body over-reacts to an infection.
- **Bile leak:** sometimes there is a leak of bile from the bile duct where the tube has been inserted. This can cause a small collection of bile inside the tummy. This can be painful. Once the drainage tube is draining bile well, the leak should stop. If this becomes a large collection, it may need draining with another procedure. The risk is less than 2 in 100 patients (2%).
- **Blockage or movement of the drainage tube or stent:** there is a risk that the drainage tube or stent might move or become blocked. If this happens, you may need to have another biliary drain or an ERCP procedure.
- **Kidney (renal) failure:** less than 2 patients in 100 (2%) get this.
- **Risk of death** due to this procedure is between 2 and 4 patients in 100 (2 to 4%). Often patients needing this procedure have pre-existing medical conditions or may be seriously unwell already. For these patients the risk of dying, from any cause, whilst in hospital or in the 30 days after a percutaneous biliary drainage or stent can be higher.

The risk of a minor complication is 26 in 100 patients (26%). **The most common minor complications are:**

- **Pain and discomfort:** 14 in 100 patients (14%) feel pain after the procedure needing pain relief. It is normal to have some discomfort for a few days or weeks after the treatment.

- **Minor infection:** less than 8 in 100 patients (8%) may show signs of infection after the procedure. The risk is kept as low as possible by giving antibiotics before the procedure. We may also give you antibiotics after the procedure if needed.
- **Minor bleeding that stops by itself:** less than 5 in 100 patients (5%).

What are the risks from exposure to radiation in this procedure?

The main risk from exposure to X-rays is a higher risk of getting a cancer in the future. This risk is thought to be very small.

We are all exposed to natural background radiation every day of our lives. This comes from the sun, the food we eat, and the ground. Each test that uses X-rays gives a dose on top of this natural background radiation.

The risks of radiation are slightly higher for an unborn child. We must ask all patients age 10 to 15 years registered female and all patients aged 16 to 55 years about their periods and/or possibility of being pregnant.

The radiation from the X-rays during a biliary drainage and stent procedure is about the same as getting a few months of natural background radiation.

The benefits of having this procedure are likely to outweigh any possible risks. The risks of not having the procedure could be greater. We try to keep your exposure to X-rays as low as possible.

Any questions?

Before the procedure:

You can ask the doctor who referred you or if you have any questions about the procedure. Please write them down to remind you when you come to the hospital. When you are on the ward you can ask the nurse. When you are in the X-ray room you can ask the radiologist doing the procedure.

After the procedure:

If you have any problems after the procedure please speak to the staff on the ward or your radiology nurse. If you have any problems after the procedure when you get home, please contact your Hepatobiliary Specialist Nurse, your GP or call the NHS helpline on 111 for advice.

Previous reference: IMA084-0315

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