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

Department of Radiology

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).

It has an explanation of how the procedures are carried out, and what the possible risks are. This will help you to decide whether or not to go ahead with the procedure.

# Information about bile and bile ducts

One of the many jobs of the liver is to make bile. Bile drains through a series of small tubes, or ducts, in the liver and finally into one larger tube called the common bile duct. This then empties into the first part of the bowel (duodenum) after the stomach.

If the common bile duct or one of the main bile ducts becomes blocked (biliary blockage), the bile cannot drain normally and these fluids can build up in the liver. This causes a yellowness of the skin (jaundice) to develop. This can become a very serious condition, which needs to be treated.



#### Health information and support is available at www.nhs.uk or call 111 for non-emergency medical advice

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# What is the treatment for blocked bile ducts?

The biliary blockage can be treated in 3 ways:

- by passing a small flexible camera (an endoscope) through the mouth and stomach to the opening of the bile duct and clearing the blockage.
- by inserting a drainage tube called a stent to allow the bile to drain into your bowel. This procedure is called an ERCP.
- If the above procedures are not possible or not available, the blockage can be treated by a percutaneous (meaning 'through the skin') biliary drainage procedure instead. This leaflet tells you about this procedure.

# What is a percutaneous biliary drainage?

A plastic drainage tube is put into the blocked bile ducts through a small cut in the skin. The bile then drains out through the tube into a small bag which hangs outside the body.

# What is a biliary stent procedure?

This may be done straight after a percutaneous biliary drainage procedure, or 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 inserted as well.

Once a drainage tube is in the bile duct, it is sometimes possible to pass the drainage tube through the blockage in the bile duct and into the bowel (duodenum). A short tube called a stent is then put in through the blockage between the bile duct and the bowel. This stent allows the bile to drain into your bowel in the normal way. This tube is called a biliary stent and is placed through the same cut in the skin.

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?

Other tests that you probably have had done, such as an ultrasound scan, MRI or a CT scan, have shown that one of your bile ducts has become blocked. The most common causes of a blockage are gallstones and inflammation around the pancreas. These other tests may or may not have shown the actual cause for the blockage in your case. Sometimes the cause for the blockage may only be found once a biliary drainage procedure has been done.

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

# Important information about medication that thins the blood

If you are taking medication that thins the blood (anticoagulants or antiplatelets) it may need to be stopped or replaced with a different one for a few days. Please call the radiology department for advice by phoning the number on your appointment letter as soon as possible.

You will be asked what blood thinning medication 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), rivaroxaban (Xarelto), ticagrelor (Brilinta), Dalteparin 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 radiologist or the doctor who referred you for this procedure will decide if you need to stop taking it.

# Important information

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

- you are allergic to iodine or rubber (latex), have any other allergies or have asthma.
- you have reacted previously to the dye used for kidney X-rays and CT scanning and X-rays of your heart and blood vessels (intravenous contrast liquid).
- you are on renal dialysis or have any problems with your kidneys.
- you have diabetes.
- there is any possibility that you may be pregnant.

The radiographer will ask you some questions about your health before the procedure starts, to check if you might be allergic to the contrast liquid. The contrast liquid contains iodine and is cleared by your kidneys when you pee (or if applicable during your routine dialysis treatment).

# 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, its potential risks and what the chances of success are. You will then be asked to sign a consent form to confirm this. **You should feel that you have had enough information before you sign this form.** 

If after talking to the hospital doctor or radiologist you do not want to have this procedure, then you can decide against it.

If the radiologist feels that your condition has changed they will talk to you about whether the procedure is still needed. They may then ask you to return to your referring doctor for review.

# 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. Your stay is usually at least 24 hours after the procedure.
- Do not to eat for 4 hours before your procedure. You may drink water until 1 hour before your procedure.
- Do not drink for 1 hour before your procedure.
- A small needle called a cannula will be put into a vein in your arm. This is so that you can be given medication if needed. You will be asked to put on a hospital gown and paper pants.
- You will be given a sedative to help you relax before or during the procedure. The sedative will make you feel drowsy but not make you to sleep.

On rare occasions sedation can cause some problems with breathing.

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

- Do not drink alcohol.
- Do not drive a vehicle or operate any machinery 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 the procedure?

A doctor who specialises in imaging and X-ray treatments (an interventional radiologist) will do the procedure.

There will also be a nurse and a radiographer in the room. There may also be a healthcare assistant.

As we are a teaching hospital a student may also be present. If you wish, you can ask that a student is not present during your examination.





# What happens during the procedure?

- The procedure usually takes place in the X-ray department.
- You will be asked to lie on the X-ray table.
- You will be attached to a blood pressure monitoring machine and have a small monitoring device (peg) attached to your finger to check your heart rate (pulse).
- You will also have ECG stickers on your chest to monitor your heart. You may be given some oxygen.
- The radiologist will use the X-ray equipment or ultrasound machine to decide on the best place for putting in the thin plastic tube, called a drainage tube. This may be between 2 of your lower ribs, on the right side, or in the midline of your tummy.
- You will be given a sedative to help you feel relaxed, a painkiller to reduce discomfort and an antibiotic to prevent the spread of infection.
- Everything will be kept clean (sterile). Your skin will be cleaned with antiseptic and you will have some of your body covered with sterile sheets.
- The skin and deeper tissues will be numbed with local anaesthetic. When the local anaesthetic is injected it will sting to start with, but this soon wears off and the skin and deeper tissues should then feel numb. The radiologist will make a very small cut in the skin for the needle and drainage tube.
- A thin needle will be inserted into the liver. The radiologist uses ultrasound, X-rays and a contrast liquid to help them put the needle in place. When the radiologist is sure that the needle is in a good position, a guide wire will be placed through the needle and into the bile duct. This then allows the plastic drainage tube to be positioned correctly.
- You may be aware of the wire and catheter passing into the liver, and sometimes this is painful. You will have been given a painkiller to ease this. There will be a nurse or another member of staff looking after you. If the procedure does become too painful for you, then they will be able to arrange for you to have more painkillers through the needle in your arm. Generally, placing the drainage tube in the liver only takes a short time, and once in place it should not hurt at all.
- The procedure may finish at this stage, with the drainage tube being fixed to the skin and the bile draining into a small bag which hangs outside the body. A dressing will be placed over the tube on your skin.

# What happens during the procedure to insert a biliary stent?

In some cases a tube, called a stent, may be placed across the blockage to widen the duct and relieve the blockage. This is done through the same cut in the skin. It may be possible to push the stent through the blockage to open it, so that the bile drains into the bowel in the normal way.

If a stent is inserted, the drainage tube and drainage bag may be left in place for a few days until we know that the stent is working, after which they will be removed. A dressing will be placed over the tube on your skin.

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.

# How long will the procedure take?

It is not always easy to know how straightforward or complex the procedure will be, as every patient's situation is different. It may be done in 45 minutes, or sometimes it can take longer. If a biliary stent is to be inserted as well, this may take a further 45 minutes.

# What happens after the procedure?

You will be taken back to your ward. Nurses will carry out routine observations, such as taking your pulse and blood pressure, 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, 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. Sometimes patients do go home with the drainage tube in place. If this is the case you will be given 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 and will depend on, for example, whether you have a temporary drainage tube in place, or whether a permanent metal stent has been placed across the blockage.

You may need further X-rays or scans to check if your bile is draining correctly and to try and find the cause of the blockage.

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

# Are there any risks or complications?

As with any procedure or operation, complications are possible. We have included the most common risks and complications in this leaflet, although they are different for each person. Your risks will be discussed with you 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:** 

• **Bleeding** - the risk of bleeding is about 3 or 4 people in 100 (3.5%). 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 drainage tube is inserted. On very rare occasions, the bleeding may become severe, and require 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.

You will be monitored closely 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%). You will be given 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 result in a small collection of bile inside the tummy. This can be painful. Usually, 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%).
- **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. An operation may be needed.
- **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 does happen a repeat biliary drain or ERCP procedure may be needed.
- Kidney (renal) failure less than 2 patients in 100 (2%).
- **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 14 in 100 patients (14%) feel pain after the procedure needing pain relief.
- **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. Antibiotics may also be given after the procedure if needed.
- **Minor bleeding that stops by itself** less than 5 in 100 patients (5%).

# What are the risks from radiation during this procedure?

The main risk from having X-rays is an increase in the 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, food we eat, and the ground. Each X-ray examination gives a dose on top of this natural background radiation. The risks from radiation are slightly higher for an unborn child so we must ask some patients aged 10 to 55 years about their last menstrual period and 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 this procedure are likely to outweigh any potential risk, and the risk from not having the procedure could be greater. We will take all safeguards to minimise the amount of X-rays you receive.

# 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:

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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.

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