Guy's and St Thomas'
NHS Foundation Trust

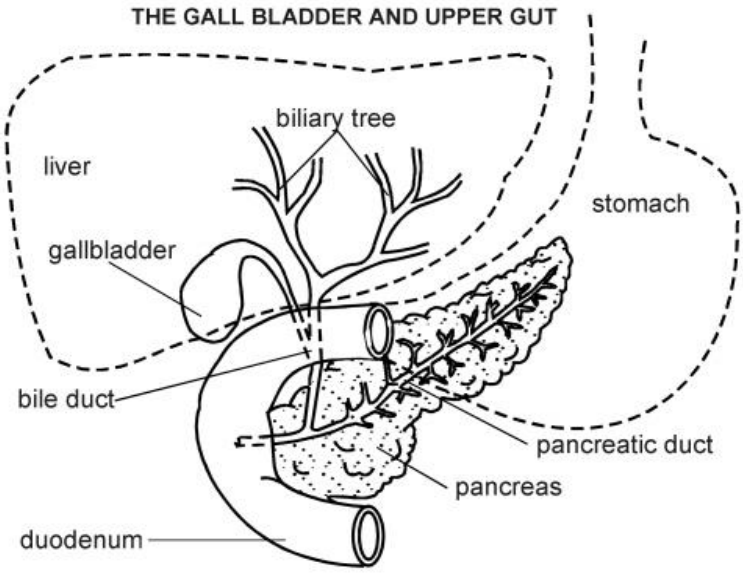
Having an endoscopic ultrasound (EUS)-guided therapy or drainage of an infected gall bladder or bile duct

This leaflet explains more about EUS drainage, including the benefits, risks and any alternatives. It also gives information on what you can expect when you come to hospital. If you have any questions, please speak to a doctor or nurse caring for you.

This procedure is performed in the Endoscopy Unit at St Thomas' Hospital by a specialist gastroenterologist, and sometimes assisted by specialist registrars.

What is an EUS?

It is a procedure that is performed using a flexible tube (endoscope) about the width of an index finger with a camera and ultrasound probe built into the tip. This tube will be put into your mouth and down your gullet, into the stomach and the first part of the small intestine (duodenum).



During an EUS the doctor can get detailed ultrasonic photographs of the wall of the upper gastrointestinal tract (oesophagus, stomach and duodenum) as well as other organs, like pancreas, gallbladder and common bile duct. The endoscope has a channel inside that allows them to use instruments to take tissue samples or to give treatment. This allows us to insert a metal or plastic stent (tube) into the blockage allowing internal drainage of

- infected gall bladder (cholecystoduodenostomy)
- blocked bile duct into the stomach (trans-gastric)
- or small bowel (trans-duodenal).

What is cholecystoduodenostomy and why is it done?

During this procedure, a metal stent is inserted into the gallbladder to allow the infection to drain into your stomach or small bowel. It also allows your doctor to examine the inside of your gallbladder to clear the infectious material or gallstones.

showing we care

This procedure is performed on people who have infections of gall bladder with pus, mainly due to gallstones. Ideally these patients would have surgery to remove the gallbladder. However, this is not possible in some patients as surgery is too risky due to other factors, such as advanced age, heart conditions or breathing problems. In these patients, this procedure lets the doctor drain the infection with an endoscope. This reduces the risks associated with surgery and external tubes.

What is drainage of bile duct and why is it done?

This procedure is performed on patients who are jaundiced because of blocked bile duct for any reason. Ideally these patients would have endoscopic retrograde cholangiopancreatography (ERCP) for drainage. Some patients cannot have an ERCP, so this procedure lets the doctor drain the bile duct with an endoscope. This reduces the risks associated with external tubes. During this procedure, a metal or plastic stent is inserted into the bile duct to allow the bile to drain into your stomach or small bowel.

Why should you have an EUS-guided therapy?

This procedure will help your doctor to treat infections and prevent the need for drains through the skin (per-cutaneous drains) and abdominal (tummy) wall. In patients that cannot have gall bladder surgery, the infections can be serious and can sometimes be fatal. This procedure offers an alternative. Having the therapy will relieve the jaundice side effects such as itching and yellow skin, and pain from the blocked ducts.

What are the risks?

This procedure is generally safe but complications can sometimes happen.

Minor complications

- Mild discomfort in the abdomen and a sore throat, which may last for a few days.
- Loose teeth, crowns and bridgework can be dislodged, but this is rare.
- Inability to complete the procedure.
- Irritation to the vein where medications were given is uncommon, but may cause a tender lump lasting for a few of days.

Possible major complications

- Ongoing infection may need prolonged antibiotics or a repeat procedure to remove the infected material.
- Very frail and/or elderly patients can get pneumonia from stomach juices getting into the lung (about one in 500 cases).
- A reaction to one of the sedative drugs used (very rare).
- A hole (perforation) may be made in the wall of the gullet, stomach or small intestine by the instruments used in the procedure. This may need surgery to treat and may occasionally be fatal.
- There is a risk of bleeding from the wall of the gullet, stomach or small intestine due to the instruments used in the procedure. This usually stops on its own. If it does not stop bleeding we may have to stop the bleeding through the endoscope. In severe cases, blood transfusion, a special X-ray procedure or an operation may be needed to control the bleeding.
- We make a hole through the small intestine to get to the gall bladder. Sometimes this can cause some of the stomach, or bile juices to leak into the abdominal cavity and cause infection (peritonitis). If this happens you will be treated with antibiotics and may rarely need surgery. This can be serious and occasionally be fatal.

Although this procedure carries risks, it is only carried out when the doctors have carefully balanced the risks of doing the procedure against doing an alternative procedure, and the risks of doing nothing. This will be discussed with you and your relatives in detail before scheduling the procedure.

Currently we have performed over 100 cases of EUS-guided drainage of organs other than the bile duct, and over 1,000 cases of bile duct drainage through the endoscope without using EUS.

Are there any alternatives?

- Do nothing/no treatment
- Per-cutaneous drainage performed under X-ray-guidance is an alternative, but this means there is an external drain which can carry a risk of infection or dislodgement.
- This procedure can also be performed surgically but it is more invasive and associated with more risks. Some patients are not suitable for surgery.

Consent – asking for your consent

We want to involve you in decisions about your care and treatment. If you decide to go ahead, you will be asked to sign a consent form. This states that you agree to have the treatment and you understand what it involves.

If you would like more information about our consent process, please speak to a member of staff caring for you.

How can you prepare for your procedure?

Please leave any expensive items at home, such as electronic devices etc, as the hospital will not accept responsibility for them. You will need to take off all your jewellery (except wedding rings) before the procedure. This is because metal can make X-rays unclear. You may want to bring your dressing gown and slippers with you (we do supply non-slip socks).

Before you have the procedure, blood tests will be taken to check the clotting of your blood and your blood count.

So that the doctor has a clear view with the camera, it is important that you do not eat or drink any solid food for 6 hours before the test. You can drink only water up to 3 hours before.

You will be asked to undress and put on a hospital gown and disposable underwear, and to remove your jewellery, and any false teeth.

You will usually be given an oral dose of antibiotic about an hour before the procedure which you can take with a small amount of water.

You should have had a chance to discuss any medications you are taking with one of our nurses or doctors before your procedure. If you are taking anti-platelet medication or anticoagulant medication to prevent the formation of blood clots (such as aspirin or clopidogrel, warfarin, rivaroxiban or dabigatran) you will need to stop these medications or have an alternative prescribed so please discuss with the endoscopy department nurses.

If you are taking sedatives, chronic pain medication, or medications for diabetes, please let the doctor or nurse know when you receive the date of your procedure.

You should continue to take all your medications as normal, unless you have been told otherwise by the doctor or endoscopy nurse.

If you have any questions about any other of your medicines, please discuss with your GP, or contact any of the numbers at the end of this information sheet.

If you are taking blood-thinning medications these will be stopped before the procedure and the duration depends on the specific medication. We will also take specific precautions if you are a diabetic.

When you arrive at the Endoscopy Unit

On arrival, please give your name to the receptionist or nurse if you are coming in straight from home. If you have been booked to be admitted to a ward, the department will send a porter for you when it is time for your procedure.

Please be aware that we have our endoscopy teams running up to 5 procedure rooms at the same time, so sometimes another patient who arrived after you may be called in before you are. This does not mean you have been forgotten, but that the other person is on a different list to you. We do everything we can to avoid keeping you waiting any longer than necessary, but because every procedure takes a different length of time to complete, sometimes it's hard to give exact timings. We'll update you regularly as to how long you are likely to be with us. Please be prepared to be with us for a few hours.

At check-in, we will ask you to wait in the waiting area until you are seen by an endoscopy nurse, who will ask you about your medical history. Please tell the nurse if you have had any reactions or allergies to other examinations in the past.

Once you are ready, you will be taken to the second waiting area, signposted 'sub wait area.' Your endoscopist will explain more about the procedure and answer any questions you may have.

What happens during the EUS-guided procedure?

Patients who are in the hospital will already be on antibiotic treatment. Patients coming from home will be given antibiotics during the procedure. You will be transferred to the endoscopy unit for this procedure.

Before the procedure, a nurse will do your observations (pulse, oxygen level, blood pressure and heart rhythm). You will be given an anaesthetic throat spray to numb the throat. You will need to lie on your side and a mouth guard will be placed in your mouth to protect your teeth and the camera. Oxygen will be given to you throughout the procedure.

You will be given an injection of sedation and a painkiller through a small cannula in your arm or the back of your hand. These medicines (conscious sedation) will relax you and make you drowsy but will not necessarily put you to sleep. Some patients may be given a general anaesthetic to put them to sleep completely. This will depend on the procedure and other medical conditions you have.

If you are given conscious sedation you can hear what is said to you and respond to any instructions given to you. A nurse will sit by your head and monitor you for the whole procedure.

Once you are drowsy, the flexible tube will be passed through your mouth, and into the stomach or the first part of the small intestine. We use a technique called diathermy (electrical heating) to make a small hole, and we place the stent through this to organ in opposition.

Sometimes, we need to widen the stent to allow better drainage. Samples may be taken to check that the right antibiotics are being used in your case.

How long does the procedure take?

The actual procedure can last 30-60 minutes.

Will you feel any pain?

This procedure is generally performed under conscious sedation or general anaesthetic (GA). Please note that your referring doctor will have told you if you were to have a GA.

We will give you sedation and an opiate pain killer before and during your procedure to make you as comfortable as possible. If you are having sedation, you may experience cramping abdominal pain during or after the procedure. This is from the air that we use to inflate your duodenum.

We will give you pain killing suppositories (into your bottom) before the end of the procedure to reduce the risk of infection. Afterwards, simple painkillers, for example, paracetamol, may be taken. Taking peppermint (as peppermint tea or peppermint water) can help to pass the air.

If you develop severe abdominal pain, please tell your nurse immediately. If you have gone home, consult your GP or go to the nearest Emergency Department (A&E).

What happens after your procedure?

The nurse will check your observations regularly, and monitor you for any complications in our recovery area. You will be transferred back to the ward if your observations remain stable.

Once you are awake you can have something to drink. You will need to have a liquid diet for 24 hours after the procedure. You may need antibiotics for at least 5 days after the procedure, or for longer if the infection takes longer to settle.

Your doctor or nurse will talk you through the results of the procedure, but you may be sleepy and not be able to remember the details. These results will be available to your referring doctor on the ward and they can explain it to you.

If you develop any signs of infection you will need a repeat procedure to check if the stent is blocked, as it may need clearing. Depending on why the procedure was done, the stent will either be removed after 4-6 weeks or left in place permanently.

What do you need to do after you go home?

If you are staying overnight on the ward, you will be given instructions when discharged home.

If you have had sedation or a GA and are going home within 24 hours, you must have someone to escort you home and stay with you overnight. They should come with you for the appointment or be contactable by phone when you are ready to leave. If you do not have an escort or have not arranged for someone to collect you, we won’t be able to give you sedation and your procedure may be cancelled. If you are unable to arrange for someone to collect you, please contact us to discuss alternative arrangements.

If you are going home within 24 hours after your examination, you should not:

- Drive, or ride a bicycle
- operate machinery or do anything requiring skill
- drink alcohol
- take sleeping tablets
- go to work
- make any important decisions, sign contracts or legal documents.

You will need to follow specific instructions about eating and drinking after your procedure, which we will give you on the day.

If you develop severe abdominal pain, a fever, black faeces (melaena), jaundice or are unable to stop vomiting (being sick), please consult your GP or go to the nearest Emergency Department with your endoscopy report that you were discharged with.

It is important that you tell your GP or the Emergency Department doctor that you have had an EUS-guided drainage or therapy so that they can contact the gastroenterology team using the hospital switchboard (tel: 020 7188 7188) for specialist advice.

Contact us

If you have a question or concern after the procedure and you are an inpatient, please speak to your nurse.

If you need to change or cancel your appointment please call, **tel:** 020 7188 8887.

If you have any questions, problems or concerns, please contact the Endoscopy Unit for advice, Monday to Saturday, 9am-5pm:

Nurse in charge, **tel:** 020 7188 7188, extension 54059
Reception desk, **tel:** 020 7188 7188, extension 54046

In an emergency out of hours (6pm-8am and weekends) call switchboard, **tel:** 020 7188 7188 ask to be put through to the on-call gastroenterology registrar (Rota watch).

For more information leaflets on conditions, procedures, treatments and services offered at our hospitals, please visit **web:** www.guysandstthomas.nhs.uk/leaflets

Pharmacy Medicines Helpline

If you have any questions or concerns about your medicines, please speak to the staff caring for you or call our helpline. **tel:** 020 7188 8748, Monday to Friday, 9am-5pm

Your comments and concerns

For advice, support or to raise a concern, contact our Patient Advice and Liaison Service (PALS). To make a complaint, contact the complaints department.
tel: 020 7188 8801 (PALS) **email:** pals@gstt.nhs.uk
tel: 020 7188 3514 (complaints) **email:** complaints2@gstt.nhs.uk

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