The Dudley Group
NHS Foundation Trust

# Endoscopic retrograde cholangiopancreatography

## GI Endoscopy Unit

### Patient Information Leaflet

## Introduction

This leaflet is for people who are considering having an endoscopic retrograde cholangiopancreatography (ERCP). This leaflet tells you more about the procedure and the benefits and risks of it.

## Why do I need to have an ERCP?

Your consultant will have recommended that you have an ERCP as your bile and pancreatic ducts need to be examined.

ERCP is used to investigate symptoms such as:

- abdominal (tummy) pain
- abnormal blood tests
- jaundice (sudden yellowing of the skin and whites of eyes)
- and anything that may suggest that your bile flow is blocked

It is used when it is suspected that a person's bile or pancreatic ducts may be narrowed or blocked due to:

- Gallstones
- Infection

It is also used if your consultant thinks that valves in the ducts, called sphincters, will not open properly. This can be due to:

- Scarring of the ducts, called sclerosis
- Pseudocysts – these are a build-up of fluid and tissue debris
- Tumours

In addition, it can be used to treat some of these problems.

## What are the benefits of an ERCP?

The main benefit of ERCP is that it can be used both to diagnose and **treat** various conditions affecting the bile and pancreatic systems, such as gallstones.

## What happens during an ERCP?

The procedure is performed using a duodenoscope, also known as a side viewing endoscope. The duodenoscope is a special type of endoscope designed specifically for this type of procedure. It is a slim, flexible tube with a light at the tip. It is gently passed in through the mouth and down into the oesophagus (gullet), stomach and small bowel.

'Cholangiopancreatography' means X-ray pictures of the bile and pancreatic ducts. These ducts do not show up very well on ordinary X-ray pictures. However, if a special dye is passed down a channel within the duodenoscope and flushed into the ducts, then X-ray pictures will show up these ducts clearly. These give us important information which can be used for diagnosis and/or treatment.

### The procedure

The duodenoscope is passed through the mouth into the oesophagus down towards the stomach and into the small bowel (duodenum). The image from this is transferred to a screen which allows the endoscopist to closely inspect a magnified image of the gut, and identify the opening of the bile and pancreatic ducts.

The bile and pancreatic duct join together and form a papilla, a small nipple-like structure. Enzymes and bile pass through this into the small bowel.

Once the papilla is identified, a special type of cannula (a slim tube) is passed through a side channel within the duodenoscope, into the opening of the papilla and is guided into the bile and/or pancreatic duct. Special dye is then flushed through the cannula and X-ray pictures are taken to show up details of the ducts.

This will give the endoscopist useful information to help with diagnosing the problem. Any narrowing of the ducts will show up on X-rays, also gallstones which may be trapped in the duct. Ordinary X-rays will not show up this kind of detail.

A side arm within the duodenoscope allows the endoscopist to pass various instruments in to help treat the problem.

### Taking biopsies

During the procedure, the endoscopist may take tissue samples or biopsies from the lining of the duodenum, stomach, pancreatic or bile ducts near to the papilla. The biopsy samples can be looked at under a microscope to check for abnormal tissue and cells.

## How can it be used to treat me?

If the X-rays show that there are gallstones in the duct, the endoscopist can widen the opening of the papilla to let the stones out into the duodenum. This is called a sphincterotomy. A special type of catheter (tube) is used to gently enlarge the papilla by cutting it. The cut is sealed using an electric current, to prevent bleeding.

Larger stones can be crushed by using a special basket. A balloon can also be used the clear the ducts of any small stones and debris. Once the stones are in the duodenum, they will be passed out with stools.

If the X-rays show a narrowing or blockage in the bile ducts, the endoscopist can place a stent inside to make the opening wider. A stent is a small plastic or a mesh wire tube. This allows the bile to drain into the duodenum in the normal way. You should not be able to feel the stent and it can remain in place permanently.

Once the procedure is completed, the duodenoscope is gently removed.

## How long does it take?

An ERCP can take anything from 30 minutes to over an hour depending on what is done.

## Will it hurt?

The procedure is not painful but may be a little uncomfortable as air is passed down a channel within the duodenoscope. The air can make some patients feel bloated at times. However, it is important as it inflates the gut slightly which allows the operator to investigate it thoroughly. Any feelings of bloating or discomfort will quickly pass once the procedure is over.

As it is important that you are comfortable and relaxed during the procedure, you will be offered pain relief (Pethidine) and an injection of a sedative (Midazolam) into a vein in your arm.

## What are the side effects and complications of an ERCP?

Most ERCPs are carried out without any problems. Some people have a mild sore throat for a day or so afterwards. You may feel tired or sleepy for several hours if you have a sedative.

Although complications after an ERCP are rare, they can occur. The risk of complications is higher if your general health is poor. The benefit of this procedure needs to be weighed up against the small risk of complications. Please discuss this with your consultant before the procedure.

There is a small risk of internal bleeding or damage (perforation) to the gut, bile duct or pancreatic duct. Studies have shown that one per cent of all patients who have had an ERCP get this (that is about one in every 100 patients).

About two to five in every 100 patients get pancreatitis, which is inflammation of the pancreas, after an ERCP. Pancreatitis can be serious in some cases and when you go home after your ERCP, you will be given clear instructions about the symptoms of pancreatitis and what to do if you become unwell.

Research has recently shown that if people are given one dose of diclofenac or indomethacin, which are non-steroidal anti-inflammatory drugs, immediately after the procedure, this reduces the risk of pancreatitis after ERCP. These drugs are given in the form of a suppository which is a tablet inserted into the rectum.

This medication will therefore be offered to you if you are at high risk of pancreatitis, or if you have not had an ERCP before. Your consultant will discuss this with you before the procedure. You should tell the consultant if you are allergic to either of these drugs.

### X-ray precautions:

The procedure uses X-rays and these use a small amount of radiation which may add slightly to the normal risk of cancer.

If you would like more information about this procedure, please contact the GI Unit on 01384 456111 ext. 2731 (8am to 6pm, Monday to Friday).

### Midazolam – the sedating injection

Advantages:

- The injection relaxes you and makes the procedure more comfortable.
- When you regain full awareness you will be able to eat and drink normally at once.

## Disadvantages:

- You may not be able to co-operate during the procedure.
- You may not remember information given to you afterwards by your doctor. Your memory may be affected for up to 24 hours after the procedure.
- You will need to stay in the recovery area after your procedure. The length of time may vary from half an hour to two hours, depending on how you respond to the sedation and how soon you return to your normal self.
- You will need a responsible adult to take you home afterwards by car or accompany you in a taxi. A responsible adult will need to stay with you overnight for your safety.
- You may not, by law, be in charge of a motor vehicle or moving machinery for 24 hours afterwards.
- The effect of the sedation may be prolonged by other drugs you are taking.

## Safety

The sedating drug we use is very safe. There will be trained nurses with you at all times who will monitor you during the procedure and in the recovery area afterwards.

There are a few complications with sedation and the risk of complications is slightly higher in the elderly or those with chronic chest or heart disease. The complications of the sedation are rare but can include:

- feeling or being sick
- small particles of food falling into the lungs and triggering an infection (aspiration pneumonia)

## What alternatives are there to ERCP?

Depending on your condition, there may be alternative ways of looking at your bile duct, such as an endoscopic ultrasound, CT scan or MRCP, which is a MRI scan of the bile and pancreatic ducts, liver and gallbladder.

However, although these are good for making a diagnosis, they cannot be used to treat problems such as gallstones.

You can discuss the options with your consultant.

## Should I ask questions?

We want you to be fully informed at all times so you should always ask any questions you may have. The person you ask will do his/her best to answer your questions. If they do not know, they will find someone else who is able to discuss your concerns.

## Is there anything I should tell people?

If there is any procedure you **do not** want to happen, you should tell the people who are treating you. It is also important for them to know about any illnesses or allergies that you have suffered from in the past.

Remember to tell the team about anything that concerns you or anything which might affect your general health.

## Who is treating me?

Your procedure will be carried out by a trained endoscopist. Within the GI Unit we have fully trained consultants, surgeons and nurse practitioners.

We are a teaching hospital which means that nurses, doctors and other health professionals receive part of their training here. Medical students may accompany the medical team treating you.

While you are here, you may be asked if you would be willing to take part in a teaching session that is attended by medical students. As a patient, you have an important part in the teaching work of the hospital, but if you do not want students to be involved in your care, please tell one of the nurses when you arrive.

## What preparation do I need?

- You should make arrangements for a responsible adult to take you home by car or taxi afterwards. You will not be able to travel home by public transport.
- You may not by law, be in charge of machinery or drive a car for 24 hours afterwards.
- You should arrange for a responsible adult to stay with you overnight if you live alone and should not be responsible for the care of others during this period.
- **If you are a diabetic** and need advice, please contact the GI unit on 01384 456111 ext. 2731. If you have a glucose monitor at home, remember to check your blood glucose before you come to your appointment.
- **If you take blood-thinning medication e.g. warfarin, clopidogrel, aspirin,** please contact the GI unit for advice.
- **You must not eat food or drink for six hours before your procedure**, as your stomach needs to be empty.

  If you need to take essential medication, for example heart tablets or painkillers, you can take them as normal with a sip of water as long as you can take them on an empty stomach (see the patient information leaflet and pharmacy instructions with your medication).
- Please bring a list of your current medication when you come for your procedure.
- Please do not wear nail polish or false nails as this will interfere with monitoring systems used during ERCP.
- Your property is your responsibility so it is a good idea not to wear a lot of jewellery, or to bring valuables or large amounts of money to the hospital.

**Female patients – as the test involves X-rays, please tell us before you come for your appointment if you are, or might be, pregnant. If you are not sure, a pregnancy test will be offered. Please also tell us if you are breastfeeding.**

**If you have a pacemaker, please ring the GI unit as soon as possible** before you come for the procedure. This is because we have to arrange for someone from Cardiology Department to see you at your appointment.

## What happens when I come for an ERCP?

The procedure will take place in the X-ray department. Please report to the reception desk **30 minutes before** the appointment time on your letter.

You will be greeted by one of the endoscopy unit nursing staff and taken to the changing area where you will be asked to undress and put on a procedure gown. If you have a lightweight dressing gown, you are welcome to bring it.

The nurse will check all your personal details including medication and allergies. All relevant information will be written down. You will be given an identity bracelet to wear during your time at hospital. The nurse will take your blood pressure and pulse.

If you are female and are still having periods, the nurse will ask you the date of your last period. As X-rays can be harmful to developing babies, checks have to be made to ensure that female patients are not pregnant at the time of the ERCP. The radiographer (the person taking your X-rays) will need the information and will record the details in your medical notes.

The consultant who will be doing your ERCP will explain details of the procedure and the risks and benefits of it.

## Consent

You will need to give your consent before the doctor or health professional treats you.

As part of your treatment, some kind of photographic record may be made – for example, clinical photographs, video recordings or X-rays. You will be told if this is likely to happen. The photograph or recordings will be kept with your notes and will be held in confidence as part of your medical record. This means that it will normally be seen by only those involved in providing you with care, or those who need to check the quality of care you have received.

The use of photographs is extremely important for other NHS work such as teaching or medical research. However, we will not use yours in a way that allows your identity to be recognised without your permission.

You will be asked to sign a consent form once the procedure has been explained to you. Health professionals must ensure that you know enough about the procedure before you have it, and that you are fully aware of the benefits and risks of the procedure. Once the consent form is completed you will be given a copy to keep.

If you later change your mind, you can withdraw your consent after signing.

## What happens during the test?

You will be taken into the X-ray room by the endoscopy nurse. You will need to remove dentures (false teeth) and glasses before lying on the X-ray table.

You will need to lie on your left side with your left arm behind your back. You will be asked to change your position during the procedure to lie more on your front. This gives better X-ray images. A sheet will cover you at all times. We will put an absorbent towel under your mouth to catch any secretions.

We will insert a cannula (small plastic tube) into your hand or arm to give you sedation and a painkiller as described in the section ‘Will it hurt?’.

We will put a mouthguard between your teeth (or gums) which will stay in place during the procedure. The mouthguard will protect your teeth and prevent you from biting the duodenoscope.

You will be monitored during the procedure by trained endoscopy nurses who will ensure that you are comfortable throughout. We will give you oxygen during the procedure.

The doctor will pass the duodenoscope gently through the mouthguard and down into your oesophagus, stomach and duodenum. Air is passed down the duodenoscope to inflate your gut. This enables the endoscopist to inspect the lining of the gut more closely. The air may make you feel full and bloated and may make you want to burp. This is all normal and will quickly settle down.

Once the doctor has looked at the lining of your gut, you will need to turn onto your front. Dye will then be flushed into your bile and pancreatic ducts using a special catheter. X-rays are taken immediately and will show any narrowing, blockages of the ducts or gallstones.

We may need to take samples of your tissue (biopsies) or cells (cytology brushings) in order to give us more information to help with diagnosis and treatment.

If the X-rays show that there are gallstones in your duct, we can widen the opening and remove the stones.

If X-rays show that there is a narrowing, a drainage tube – called a stent – can be inserted into the duct. This will then allow bile to drain into the small bowel in the normal way.

Once the procedure has been completed, the duodenoscope will be gently removed. If you are having a diclofenac or indomethacin suppository, you will be given this at this point. Staff giving you this will check that you are not allergic to these medications.

## What happens after the test?

Afterwards you will be transferred to the recovery area in the GI Unit where you will be monitored until you are ready to go home.

## When will I get the results?

You will be told the results of your test before you go home. If we have taken samples, either biopsies or cytology brushings, they will be sent to the hospital laboratory to be analysed. These will take several days to process so the results will usually be discussed with you at your next hospital appointment.

## References

Dai HF, Wang XW and Zhao K (2009). Role of nonsteroidal anti-inflammatory drugs in the prevention of post-ERCP pancreatitis: ameta-analysis. *Hepatobiliary Pancreat Dis Int.* 8(1): p11-16.

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Elmunzer BJ, Waljee AK, Elta GH, Taylor JR, Fehmi SM and Higgins PD (2008). A meta-analysis of rectal NSAIDs in the prevention of post-ERCP pancreatitis. *Gut.* 57(9): 1262-1267.

Zheng MH, Xia HH and Chen YP (2008). Rectal administration of NSAIDs in the prevention of post-ERCP pancreatitis: a complementary meta-analysis. *Gut.* 57(11): p1632-1633.

If you have any questions, or if there is anything you do not understand about this leaflet, please contact:

GI Unit on 01384 456111 ext. 2731 (8am to 6pm, Monday to Friday)

Russells Hall Hospital switchboard number: 01384 456111

**This leaflet can be downloaded or printed from:**

http://dgft.nhs.uk/services-and-wards/gastroenterology/

If you have any feedback on this patient information leaflet, please email dgft.patient.information@nhs.net

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