

The Royal Liverpool and
Broadgreen University Hospitals

NHS Trust



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Patient Information

Chronic Pancreatitis

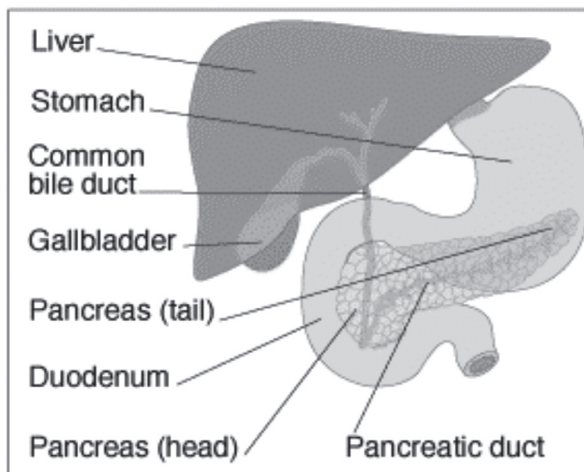
Directorate of Surgery

Hepato-Pancreato Biliary (HPB) Surgical Team

PIF 1495 V1

The Pancreas Gland

The pancreas is a solid gland measuring 25-29centimetres in length, four to six centimetres in width and three to four centimetres in depth. The head of the gland is situated just to the right of the midline of your abdomen and below your right ribcage. It is closely attached to the duodenum, which is the first part of the small bowel into which your stomach empties liquid and partially digested food.



What does it do?

Digestion

Digestion of food, which consists of carbohydrates, proteins and fats, is not possible without the pancreas. The pancreas produces enzymes, which are passed into the duodenum along the pancreatic duct; these are responsible for breaking down food into particles ready for absorption. The digestion of fat is very special; the pancreatic enzymes cannot digest the fat unless it has been prepared first. Bile acids made in the liver and stored in the gall bladder work on the fat first to get them ready for the pancreatic enzymes to help digest them. The bile is passed down the bile duct and into the duodenum; therefore both pancreatic juice and bile are needed for efficient digestion and absorption.

Insulin and glucose metabolism

All the cells of the body use glucose as a source of energy. The pancreas is the organ responsible for the production of a hormone called insulin. Insulin regulates the levels of glucose in our bloodstream, too much or too little glucose can be very dangerous. If part of the pancreas is removed or damaged there is usually enough pancreas left to prevent sugar diabetes forming, but sometimes diabetes will develop.

What is chronic pancreatitis?

This refers to an inflammation of the pancreas which is continuous. The inflammation is usually of a low-grade so that there is no fever but often there is some pain. Because of the continuous inflammation, scar tissue develops within the pancreas.

At first this may result in loss of part of the enzyme-making part of the pancreas. After a variable period of time (which could be after some weeks or months but is usually after many years), the insulin-making part of the pancreas may become destroyed.

For reasons that are not understood, many patients with chronic pancreatitis develop calcium deposits in the pancreas tissue and may form calcium stones in the pancreatic ducts.

Blockage of the ducts by scar tissue or stones will stop enzymes being delivered to the gut and impair digestion. The pancreatic duct may enlarge if it is blocked.

The main symptoms of chronic pancreatitis are:

- poor digestion
- sugar diabetes
- pain
- weight loss.

Causes

The major cause of chronic pancreatitis is alcohol consumption. If alcohol is thought to be the cause, it is essential that all alcohol drinking is stopped. The Department of Health recommends an alcohol daily limit of two to three units for women and three to four units for men.

Other causes of chronic pancreatitis are hereditary pancreatitis, idiopathic pancreatitis (cause is specific to the individual patient), narrowing of the pancreatic duct and autoimmune pancreatitis.

Investigations

While in hospital your doctor may ask for some of the following investigations

Ultrasound

An ultrasound takes place in the X-ray department. A scanning device with jelly on is passed over your abdomen and pictures are obtained on a screen. Information about the pancreas, liver, gall bladder and bile ducts can be obtained.

CT Scan (Computed Tomography Scan)

A CT scan is another type of X-ray which gives more in-depth pictures of the abdomen. The procedure involves you lying on a bed that moves in and out of the scanner which is shaped like a large polo mint, while pictures are taken.

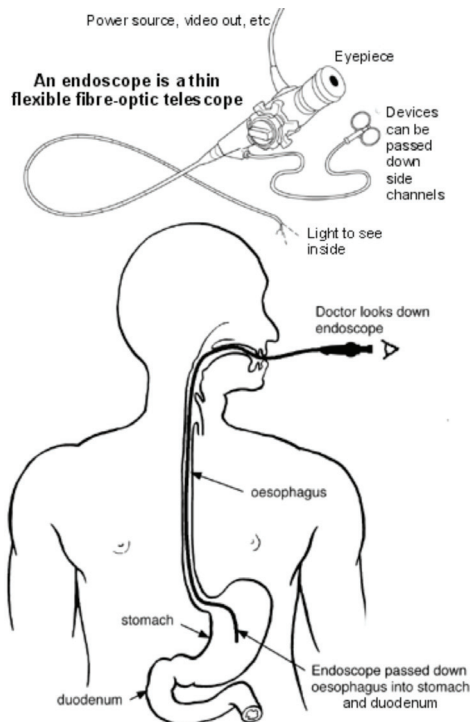
Special liquids are often used to allow particular areas of the body to be seen more clearly on the scan. You may be asked to drink some liquid or it may be given as an injection.

Endoscopic Retrograde Cholangio-Pancreatography (ERCP)

This test is performed under sedation.

A small flexible tube called an endoscope is passed through your mouth and stomach, and out into the biliary tract. A special dye is injected which shows the common bile duct and pancreatic duct. If stones are present they may be removed. If there is a stricture causing obstruction to the flow of bile then a stent (narrow tube) can be pushed down the inside of the blocked duct to hold it open.

This is a temporary measure until jaundice settles and any surgery needed can be carried out. Sometimes the stents are left in permanently if surgery is considered unlikely. During the procedure pictures are taken and the doctor carrying out the examination writes a written report on his findings afterwards



Endoscopic ultrasound (EUS)

This is a very similar procedure to an ERCP and involves an ultrasound probe being passed down the endoscope to take an ultrasound scan of your pancreas and surrounding organs.

Magnetic Resonance Imaging (MRI)

An MRI scan is similar to a CT scan but uses magnetic fields to image the pancreas instead of X-rays. Very powerful magnets are used to generate the pictures. MRI scans can be used to provide good pictures of the bile and pancreatic ducts and is called MRCP.

Tests for pancreatic enzyme production

Faecal elastase test

Elastase is one of the enzymes produced by the pancreas to digest protein. There is always a small extra amount produced which means that it can be measured in the stool.

The extra amount of elastase produced is related to the amount of normal pancreatic function. The faecal elastase test is used for screening and monitoring. More complicated tests may also need to be used if the final diagnosis is not clear.

OGTT Oral Glucose Tolerance Test

This is a test for how well glucose is metabolised by the body. You will be given a glucose preparation to drink, blood samples will be taken afterwards to determine how quickly it is cleaned from the blood.

Treatment for Chronic Pancreatitis

Change in lifestyle:

- stop all drinking of alcohol if alcohol is the cause
- if you require support in stopping drinking contact your HPB specialist nurse for referral to the lifestyles clinic
- ideally smokers should stop smoking altogether.

Pancreatic Enzyme Supplements

These help digestion and may reduce the pain. There are many preparations available. These preparations differ considerably in their effectiveness of action.

The most common is a medication called Creon which consists of capsules containing scores of small granules. The capsules need to be taken during each meal and with any snack and help the body to breakdown fat and protein from your food.

The requirements vary greatly from patient to patient and your dose may need to be altered once you are eating properly.

If you are diagnosed with diabetes you will be seen by the diabetes team who will decide the best treatment for you.

This may mean simply watching what you eat or taking tablets or injections. The regime needed and the dose used will be adjusted on an individual basis until the doctor can find the combination that suits you best.

Mild pain-relieving tablets are acceptable.

Very occasionally your doctor may offer you surgery

Major pancreatic Surgery

Beger's Operation

The head of the pancreas is removed preserving the duodenum. The base of the removed pancreatic tissue (which contains the bile duct and pancreatic duct) is drained into the small bowel by a special procedure called a Roux-en-Y enterostomy.

Kausch-Whipple's Operation

Some surgeons offer this operation instead of a Beger's operation or if there is concern about the presence of a small cancer. Part of the stomach is removed along with the pylorus, the duodenum and the head of the pancreas.

Pylorus-Preserving Kausch-Whipple's Operation

In this procedure the stomach and pylorus are preserved whilst removing the duodenum and head of the pancreas.

Frey's Procedure

Tissue is removed from the head of the pancreas although less than in Beger's operation. A Roux-en-Y enterostomy is used to drain the cut parts of the pancreas.

Left Pancreatectomy

In this operation the left part of the pancreas is removed. This operation is performed if the head and neck of the pancreas are completely normal. The spleen is normally preserved, but may need to be removed sometimes.

Total Pancreatectomy

In this operation 95% of the pancreas is removed. A small amount of pancreas tissue is preserved near the duodenum to maintain its blood supply. The spleen is also preserved if possible.

This operation is performed if the whole of the pancreas is badly affected. Total pancreatectomy may be necessary especially if there has been previous pancreatic surgery, if the patient already has sugar diabetes and in exceptional circumstances there is concern regarding the possibility of cancer in very high risk individuals.

Further Information

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Support Groups

Pancreatits Supporters Network www.pancreatits.org.uk

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The above information is available on request in alternative formats including other languages, easy read, large print, audio, Braille, Moon and electronically.