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Having an adrenal gland removed

Hepatobiliary and Pancreatic Services

Information for patients

Produced: Feb 2025
Review: Feb 2028
Leaflet number: 568 Version: 5

Introduction

You have been referred to our specialist team as you have an abnormality on your adrenal gland that may need treatment.

The aim of this booklet is to help you understand more about the treatments that are available to you. There is a glossary at the end of the booklet where words that you may be unfamiliar with are explained. Words in **bold** type can be found in the glossary.

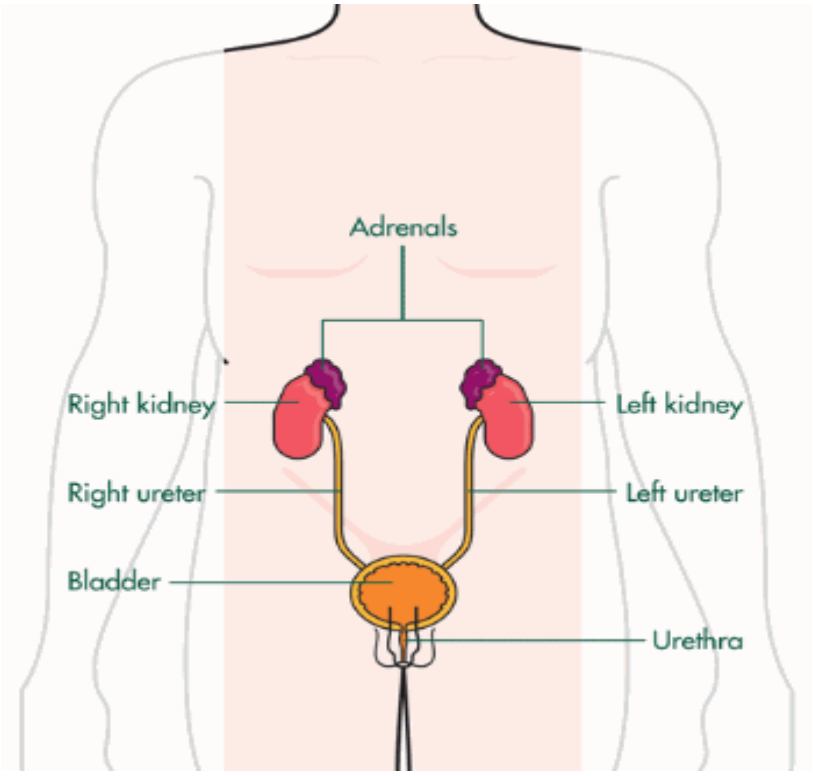

Diagram courtesy of Macmillan

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Where are my adrenal glands and what do they do?

There are two adrenal glands in the body and they are situated on the top of each kidney. They are part of the **endocrine system** and produce a number of **hormones** which are important to the body to survive.

Each adrenal gland is divided into two areas called the cortex and the medulla. These two areas produce different hormones which can be affected if a tumour is present within the adrenal gland.

The adrenal cortex produce hormones known as steroids.

Steroids:

- affect how the body uses carbohydrates, proteins and glucose (glucocorticoids).
- manage the body's blood pressure, by balancing salt and water (mineralocorticoids).
- produce a small amount of the sex hormones (androgens and oestrogen).

The adrenal medulla produces the hormones adrenaline and noradrenaline. These are vital to the body in reaction to emergency situations.

Types of adrenal tumours

Tumours found in the adrenal gland can be **malignant** (adrenal adenocarcinomas) or **benign** (adrenal adenomas) and can be found in the cortex or medulla.

Another type of tumour that can be found in the adrenal gland is a **phaeochromocytoma,** which can be either benign or malignant.

Final diagnosis of which type of adrenal tumour you have may not be possible until after surgery.

Causes of adrenal tumours

While the cause of these tumours remain unknown, there is a small group of patients who have an increased risk of adrenal tumours due to **Multiple Endocrine Neoplasia** (MEN1 and MEN2). This is a rare genetically-linked disease. If you have been told that you have this you should ask your GP for genetic counselling.

How are adrenal tumours diagnosed?

These tumours are difficult to diagnose and your GP will have organised further investigations. These will include:

- ultrasound scan of your abdomen.
- CT scan of your chest, abdomen and pelvis.
- 24hr urine collections to assess **catecholamine** levels (please see separate booklet regarding this test).

Sometimes your doctor will also organise an MRI scan and a **I-123-MIBG scan.** If so, you will be given more information about these tests.

What treatments are there?

Your specialist will discuss the treatment options available to you.

Surgery

If the tumour is contained within the adrenal gland you may be advised to have your adrenal gland removed. This will then remove the problem and you may not require any more treatment. If the tumour involves your kidney as well, then you may be advised to have your kidney removed as well as your adrenal gland.

If the tumour has spread further then your surgeon will advise you as to whether the aim of surgery will be to remove all disease or to slow down the disease and relieve systems by a 'debulking' operation.

Non-surgical options

Other possible treatments are:

- Medication to control the symptoms, for example blood pressure tablets to reduce blood pressure.
- Chemotherapy to help shrink the tumour.
- Radiotherapy to reduce disease to a targeted area and to reduce pain as appropriate.

Your multidisciplinary team (MDT)

While planning your care, your doctor will wish to discuss your medical problem at a weekly meeting with other specialists. This means that your planned treatment is a joint decision by your doctor and several other specialists. Members of the MDT include:

- other surgeons
- a radiologist (a specialised x-ray doctor)
- a pathologist (a doctor who studies body tissues)
- an oncologist (a specialised cancer doctor)
- medical consultants
- clinical nurse specialists (key workers)
- doctors from the palliative care team

Removal of your adrenal gland

This is usually done by laparoscopic (keyhole) surgery. This type of operation is routine. However not all patients are suitable for this type of operation and some require a conventional 'open' operation.

What is laparoscopic adrenal surgery?

This is a 'keyhole' operation to examine or remove your adrenal gland. It is done under a general anaesthetic and can take between 30 minutes and two hours, depending on the operation you need.

The operation is performed through small cuts made in your abdomen. One of these will be near your navel. Three, or more, other tiny cuts are made to the upper abdomen. These cuts are called port sites. Carbon dioxide gas is put into your abdomen to allow the surgeon a clear view of your liver during the operation.

Removal of your adrenal gland (continued)

Hollow tubes are placed into the cuts and through these your surgeon passes instruments to perform the operation. The operation is viewed on a large television screen within the theatre room.

During the procedure, the adrenal gland (and kidney, if appropriate) are examined and removed through the hole in your navel (tummy button). All specimens taken will be sent to the laboratory to be examined. The results will take about a week to come back.

What are the advantages of having laparoscopic surgery?

If you have laparoscopic surgery, rather than 'open' surgery:

- you will not need a large cut in your abdomen
- you should experience less pain
- there is less risk of infection
- you will need a shorter recovery time
- you should have less wound problems.

What are the risks of having laparoscopic surgery?

Laparoscopic surgery is considered a very effective and safe procedure. However, although most patients do not have any problems associated with the operation, there are some risks and possible complications you should be aware of:

Conversion from keyhole to open surgery: Occasionally the surgeon is not able to complete the operation by keyhole surgery. In these cases a bigger cut is made across the top of your abdomen.

This is usually carried out if your surgeon feels the operation cannot be performed safely using the laparoscopic technique.

Damage to your intestines: If you have had previous operations in your abdomen, these may have caused internal scarring and may make the keyhole operation more difficult. Occasionally, the intestines (small or large bowel) can be damaged because of this.

Deep Vein Thrombosis (DVT): This is a blood clot in the lower leg. Several precautions are taken to reduce this risk. You will be given a small injection in your abdomen before your operation, to help thin your blood. You will also have to wear special compression stockings. After your operation, you will be informed when you can get up and about, and will be encouraged to do so.

Chest infection: If you smoke, stopping about two weeks before your operation will help reduce the risk of an infection occurring. Also, after your operation, getting up and about as soon as you feel able is very important.

Port site hernia: Occasionally a small weakness may remain in one of the cuts made in the abdomen. This could allow a hernia to develop, which may need an operation in the future.

Wound infection: There is a risk that your wound may become infected, and you may require a course of antibiotics.

Preparing for your operation

Before your admission you will be seen in the pre-assessment clinic. It is very important that you attend. If you do not attend, your operation may be postponed or cancelled.

At this clinic a member of the nursing team will see you, to check that you are fit for your operation. They will also be able to explain about the operation and answer any questions you may have. You will also be seen by a doctor who will examine you and may organise for you to have some tests.

At the pre-assessment clinic you will also be routinely tested for the infection MRSA (Methicillin Resistant Staphylococcus Aureus). This is a type of bacteria that is resistant to some antibiotics.

If you are taking any medicines please bring them to your pre-assessment appointment. You will be advised if you need to stop taking any of your medicines before your operation.

If you are taking any tablets to thin your blood, such as aspirin or warfarin, it is important that you tell us as soon as possible.

Please bring any medicines you are taking into hospital with you when you are admitted.

If you are taking the oral contraceptive pill, you may be advised to stop this four to six weeks before your operation. This is due to the slight increased risk of a blood clot (DVT), forming. **You will need to use an alternative method of contraception during this time.**

Preparing to come into hospital

We will send you a letter confirming the date of your admission, and details of the ward you will be admitted to. You will also be advised when you should stop eating and drinking before your operation. If you are unsure please ask during your pre-assessment appointment.

The following points should be noted before coming into hospital:

- If you smoke, it is recommended that you stop around two weeks beforehand. You should also be aware that smoking is not allowed anywhere in the hospital buildings or within the grounds.
- Do not bring any valuables into hospital, as we cannot be held responsible for any loss or damage.
- Please remove all jewellery. You may wear a wedding ring.
- Take a bath or shower before coming into hospital. You will also be asked to shower and wash your hair before you go down to theatre, using a special body wash. This is to reduce your risk of MRSA infection.
- Do not shave the operation area. If necessary, this will be done in the operating theatre.
- Bring in an overnight bag with nightclothes and wash bag.
- Have a contact number for the person who is going to take you home.

Giving your consent to surgery

Before your operation is performed, your doctor will need to have your consent. You and your doctor will sign a form together to confirm that you consent to the operation. Your doctor will explain the purpose of the operation, and tell you what is expected to be removed during the procedure. However you need to be aware that sometimes it is only during the operation that the spread of the disease is fully apparent, making a complete removal of the growth too dangerous.

If you have any doubts or questions about your operation, you should speak to your doctor before you sign the consent form.

After your operation

Depending on the type of operation you have had, you may be taken to the Intensive Care Unit for monitoring following your operation. Otherwise you will spend a short time in the theatre recovery area, before going back to the ward.

Oxygen

You may be given oxygen until you are fully awake. This is given through a mask which is placed over your nose and mouth.

Intravenous infusion (drip)

You may have a 'drip' going into the back of your hand. This is routine and only temporary until you are drinking enough fluid.

Wound drain

You may have a wound drain in place. This is a tube to help drain fluid from the wound. This will be removed before you go home.

Urinary catheter

This is a tube which goes into your bladder and drains your urine into a bag. The nursing staff will check that you are passing enough urine and that you are receiving enough fluids.

Pain control:

It is very important that your pain is controlled so that you can move and cough to help keep your chest clear. After a big operation there are two main types of pain control used:

- **Epidural** - an epidural delivers strong pain killers through a fine tube that goes into your back. The nurses will monitor you regularly, and ask you if you have pain or if you feel sick or drowsy. A specialist nurse from the pain team will see you every day to check on your progress.
- **Patient Controlled Analgesia (PCAS)** - this is a device attached to the drip. You have a button which, when pushed, will deliver some pain relief directly into the veins. The pump has been set up so that you cannot use too much. A nurse will perform regular checks to make sure you do not feel too drowsy or sick.

As you begin to recover, the above forms of pain relief will be replaced by other methods of pain relief.

Pain control (continued)

You may have some shoulder pain and/or lower back pain. This is caused by the gas put into your abdomen during the operation, which presses under the rib cage. Getting up and about as soon as possible after your operation will help to relieve this, and it usually settles within 24 to 48 hours.

You will be prescribed painkillers to take home with you. If you are in pain it is important for you to take these according to the instructions on the packet. It is much better to keep pain under control than to try and treat it when it has become unbearable.

Sickness

Occasionally patients feel sick after a general anaesthetic. Please inform the nurse looking after you if you feel sick, so you can be given medicine to help relieve this.

Wound care

You will have small dressings over your wounds, and you will be advised by the ward staff when these can be removed.

You may have a shower when you are at home. It is perfectly safe for water to splash onto the wounds in the shower, but if you take a bath, ensure the water is shallow to avoid soaking the wounds. Afterwards gently pat the skin dry around the wounds with a clean towel.

The wounds may itch and there may be bruising. This is quite normal and will settle in the same way as any other bruise.

A small number of people develop a wound infection after the operation. The signs of infection are redness, swelling, heat, leaking fluid, smell or tenderness around the wound edges. If you think your wounds are infected, please contact your GP as you may need antibiotics. Occasionally, the pus has to be released from an infected area by a further procedure.

If you have stitches that need to be removed, this will be arranged before you leave hospital.

Getting up and about

It is very important to get up and about as soon as possible after your operation. You should have a nurse with you the first time you get out of bed, as you may feel dizzy.

When you go home you should continue to be active, doing a little bit more each day.

Going home

You should not compare your recovery with other people who have had the same operation. We are all different and recover at different rates.

Please contact your nurse specialist (during office hours) or your GP, if you experience any of the following symptoms:

- a temperature or fever
- severe abdominal pain
- a swollen abdomen
- severe or uncontrolled vomiting

Tiredness

Most people feel tired for several days, sometimes weeks, after their operation. Do not expect too much too soon.

Work

Your consultant will be able to advise you on when you may be ready to start work again. If you require a sick note then please ask the ward staff before you go home.

Driving

You should not drive for 48 hours after any general anaesthetic, but it may be a few weeks before you can drive safely (you should be able to perform an emergency stop). The first time you drive have somebody in the car with you in case you feel unwell. It is also advisable to contact your insurance company, to check their rules about driving following surgery.

Sex

You may resume normal sexual activity as soon as you feel comfortable.

Exercise

You can usually start gentle exercise after about two weeks, gradually building up to your normal routine.

Diet

There are no restrictions on what you can eat and you can commence a normal diet as soon as you feel ready to eat. However, some people find that, following surgery, they can only manage to eat small amounts to begin with. So you may find it better to eat small amounts regularly throughout the day.

Follow-up

You will be given an appointment to come back to the outpatient department six to eight weeks following your operation. You may need follow-up scans depending on the results of your operation and you will be advised about these.

This will vary from patient to patient. Your surgeon will discuss your future management with the oncologist, who may prescribe chemotherapy for you. This is the use of anti-cancer drugs to destroy cancer cells. You may receive chemotherapy either before or after your operation, or both.

Further treatment

This will vary from patient to patient. Your surgeon will discuss your future management with the oncologist, who may prescribe chemotherapy for you. This is the use of anti-cancer drugs to destroy cancer cells. You may receive chemotherapy either before or after your operation, or both.

Glossary

Benign: non-cancerous

Catecholamines: hormones made by the adrenal glands. The level of catecholamines in your urine can be measured and this gives us information about what is wrong with you.

Endocrine system: the glands in the endocrine system produce hormones.

Hormones: chemicals that control many of the body's functions.

Laparoscopic: a method of examining the inside of the abdomen, or performing an operation, using a viewing tube with a light in it and other special instruments.

I-123-MIBG scan: this is a scan used to give us more information about the abnormality in your adrenal gland. A chemical called I-123-MIBG, which is mildly radioactive, will be injected into you so that we can get pictures of your adrenal gland.

Malignant: cancerous.

Multiple Endocrine Neoplasia (MEN): a rare condition caused by a faulty gene, which can be inherited. In MEN, a number of different tumours develop in the endocrine system.

Oncologist: a doctor who specialises in the non-surgical treatment of cancer,

Phaeochromocytoma: the most common type of adrenal medulla tumour, it can be benign or malignant.

Contact numbers

Out of hours contacts (24 hours per day, seven days per week)

Nurse in charge

Ward 36 Glenfield hospital 0116 2584641

Nurse in charge

Ward 36 Glenfield hospital 0116 2584643

اگر آپ کو یہ معلومات کسی اور زبان میں درکار ہیں، تو براہِ کرم مندرجہ ذیل نمبر پر ٹیلی فون کریں۔
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