Laparoscopic Removal of the Adrenal Gland

Department of Urology
This leaflet contains evidence-based information about your proposed urological procedure. We have consulted specialist surgeons during its preparation, so that it represents best practice in UK urology. You should use it in addition to any advice already given to you.

**Key Points**

- The aim of this operation is to remove your adrenal gland
- You normally have two adrenal glands in the body, one sitting above each kidney (pictured below)
- Reasons for removing your adrenal gland include benign tumours that produce hormones and suspected (or confirmed) adrenal cancer.

**What does this procedure involve?**

This involves removal of your adrenal gland through several small (keyhole) incisions.

**What are the alternatives?**

- **Observation** – this may be an option when your tumour is very small, and the risk of progression is felt to be low
- **Partial adrenalectomy** – this involves removal of the tumour only and preserving the rest of the adrenal gland; it is an experimental technique and is not widely available
- **Open surgery** – this involves conventional removal of your adrenal gland through a single incision.
What happens on the day of the procedure?

Your urologist (or a member of their team) will briefly review your history and medications, and will discuss the surgery again with you to confirm your consent.

An anaesthetist will see you to discuss the options of a general anaesthetic or spinal anaesthetic. The anaesthetist will also discuss pain relief after the procedure with you.

We may provide you with a pair of TED stockings to wear, and we may give you a heparin injection to thin your blood. These help to prevent blood clots from developing and passing into your lungs. Your medical team will decide whether you need to continue these after you go home.

Details of the procedure

- We normally use a full general anaesthetic and you will be asleep throughout the procedure
- you will be given an injection of antibiotics before the procedure, after you have been checked for any allergies
- we inflate your abdominal cavity with carbon dioxide gas through a special needle
- we place a telescope and operating instruments into your abdominal cavity (tummy) using three or four small incisions (pictured)
- one incision may need to be enlarged to remove the adrenal gland
- we normally insert a bladder catheter during the operation to measure urine output
- a drainage tube may be placed through the skin into the space left after removal of the adrenal gland
- you will be given fluids to drink immediately after the operation and we will encourage you to move as soon as you are comfortable (to prevent blood clots forming in your legs)
your wound drain and catheter are normally removed after 24 to 48 hours

- the average hospital stay is three to five days.

**Are there any after-effects?**

The possible after-effects and your risk of getting them are shown below. Some are self-limiting or reversible, but others are not. We have not listed very rare after-effects (occurring in less than 1 in 250 patients) individually. The impact of these after-effects can vary a lot from patient to patient; you should ask your surgeon’s advice about the risks and their impact on you as an individual:

<table>
<thead>
<tr>
<th>After-effect</th>
<th>Risk</th>
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<tbody>
<tr>
<td>Shoulder tip pain due to irritation of your diaphragm by the carbon dioxide gas</td>
<td>Almost all patients</td>
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<tr>
<td>Temporary abdominal bloating (gaseous distension)</td>
<td>Almost all patients</td>
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<tr>
<td>Temporary insertion of a bladder catheter and wound drain</td>
<td>Almost all patients</td>
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<tr>
<td>Conversion to open surgery due to failure to progress or intra-operative complications</td>
<td>Between 1 in 10 and 1 in 50 patients</td>
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<tr>
<td>Bleeding requiring further surgery or blood transfusion</td>
<td>Between 1 in 10 and 1 in 50 patients</td>
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<tr>
<td>Wound infection</td>
<td>Between 1 in 10 and 1 in 50 patients</td>
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<tr>
<td>A hernia forming in one of your port incisions</td>
<td>Between 1 in 10 and 1 in 50 patients</td>
</tr>
<tr>
<td>Entry into your lung cavity requiring insertion of a temporary drain</td>
<td>Between 1 in 50 and 1 in 250 patients</td>
</tr>
</tbody>
</table>
Involvement of, or injury to, local structures (blood vessels, spleen, liver, kidney, pancreas, bowel) requiring more extensive surgery (either immediate or deferred)  
Between 1 in 50 and 1 in 250 patients

The abnormality in the adrenal gland may turn out not to be cancer  
Between 1 in 50 and 1 in 250 patients

Anaesthetic or cardiovascular problems possibly requiring intensive care (including chest infection, pulmonary embolus, stroke, deep vein thrombosis, heart attack and death)  
Between 1 in 50 and 1 in 250 patients (your anaesthetist can estimate your individual risk)

What is my risk of a hospital-acquired infection?

Your risk of getting an infection in hospital is approximately 8 in 100 (8%); this includes getting MRSA or a Clostridium difficile bowel infection. This figure is higher if you are in a ‘high-risk’ group of patients such as patients who have had:
- long-term drainage tubes (e.g. catheters);
- bladder removal;
- long hospital stays; or
- multiple hospital admissions.

What can I expect when I get home?

- you will be given advice about your recovery at home
- you will be given a copy of your discharge summary and a copy will also be sent to your GP
- any antibiotics or other tablets you may need will be arranged and dispensed from the hospital pharmacy
- there may be minor discomfort from the small incisions in your abdomen but this can normally be controlled with simple painkillers such as paracetamol
all the port incisions are closed with absorbable stitches which do not require removal, but may take two to three weeks to disappear if you develop a temperature, increased redness, throbbing or drainage at the site of the operation, you should contact your GP immediately.
it will take 10 to 14 days to recover fully from the procedure most people can return to normal activities after two to four weeks. a follow-up outpatient appointment will normally be arranged for you at 6 to 12 weeks after the operation when we will let you know the results of pathology tests on the removed adrenal gland. it will be 14 - 21 days before the biopsy results on the tissue removed are available. All biopsies are discussed in detail at a multi-disciplinary meeting before any further treatment decisions are made.

You and your GP will be informed of the results after this discussion. Your remaining adrenal gland will function normally on its own. It is sometimes necessary to take drugs to help the remaining gland recover (e.g. in patients with Cushing’s syndrome). If both glands have to be removed (this is very rare), you will need to take drugs to replace their function.

General information about surgical procedures

Before your procedure
Please tell a member of the medical team if you have:

- an implanted foreign body (stent, joint replacement, pacemaker, heart valve, blood vessel graft);
- a regular prescription for a blood thinning agent (warfarin, aspirin, clopidogrel, rivaroxaban or dabigatran);
- a present or previous MRSA infection; or
- a high risk of variant-CJD (e.g. if you have had a corneal transplant, a neurosurgical dural transplant or human growth hormone treatment).
Questions you may wish to ask
If you wish to learn more about what will happen, you can find a list of suggested questions called ‘Having An Operation’ on the website of the Royal College of Surgeons of England. You may also wish to ask your surgeon for his/her personal results and experience with this procedure.

Before you go home
We will tell you how the procedure went and you should:
- make sure you understand what has been done;
- ask the surgeon if everything went as planned;
- let the staff know if you have any discomfort;
- ask what you can (and cannot) do at home;
- make sure you know what happens next; and
- ask when you can return to normal activities.

We will give you advice about what to look out for when you get home. Your surgeon or nurse will also give you details of who to contact, and how to contact them, in the event of problems.

Smoking and surgery
Ideally, we would prefer you to stop smoking before any procedure. Smoking can worsen some urological conditions and makes complications more likely after surgery. For advice on stopping, you can:
- contact your GP;
- access your local NHS Smoking Help Online
- ring the free NHS Smoking Helpline on 0800 169 0 169.

Driving after surgery
It is your responsibility to make sure you are fit to drive after any surgical procedure. You only need to contact the DVLA if your ability to drive is likely to be affected for more than three months. If it is, you should check with your insurance company before driving again.
Useful contacts

Princess Royal Hospital

Ansty Ward
01444 441881 Ext. 8240 / 8241

The urology nursing team
01444 441881 Ext. 5457

Urology Consultants
Mr Symes 01444 441881 Ext. 7809
Mr Larner 01444 441881 Ext. 7808
Mr Coker 01444 441881 Ext. 8043
Mr Nawrocki 01444 441881 Ext. 5962
Mr Alanbuki 01444 441881 Ext. 7810
Mr Zakikhani 01444 441881 Ext. 7809