National Hospital for Neurology and Neurosurgery

Pituitary service
Transsphenoidal hypophysectomy
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Contents
1. Introduction 3
2. What does transsphenoidal hypophysectomy mean? 4
3. How can a transsphenoidal surgery help? 5
4. What are the risks of transsphenoidal surgery? 5
5. What will happen if I choose not to have this surgery? 8
6. What alternatives are available? 8
7. How should I prepare for transsphenoidal surgery? 9
8. Asking for consent 9
9. What happens during a transsphenoidal surgery? 10
10. What should I expect after transsphenoidal surgery? 11
11. Steroid medication 14
12. What problems should I look out for after I go home? 15
13. How will I be followed up after surgery? 16
14. Where can I get more information? 17
15. Contact details 18
16. How to find us 19
1 Introduction

This booklet has been written by the Pituitary Team at The National Hospital for Neurology and Neurosurgery. The aim of this booklet is to provide information about pituitary surgery in particular a procedure called trans-sphenoidal hypophysectomy.

It is intended for patients (or their family or carer) referred to our service and who may be offered this procedure. It is not intended to replace discussion with your consultant.

If you have any questions, your neurosurgeon or the pituitary clinical nurse specialist will be happy to answer them.
What does transsphenoidal surgery mean?

A transsphenoidal hypophysectomy is a surgical procedure most commonly used to remove a tumour of the pituitary gland. Transsphenoidal means through the sphenoid sinus. This is the air sinus (cavity) at the back of your nose. The pituitary tumour is removed through the nose.

Hypophysectomy refers to the pituitary gland. This is a gland about the size of a pea and is located at the base of the brain behind your eyes. The pituitary gland produces chemical messengers called hormones, which control important body functions.

These include:

- Response to stress;
- Metabolic rate (the speed at which your body functions);
- Growth
- Milk production
- Sexual function and fertility
- The balance of water in the body
3 How can a transsphenoidal surgery help?

The pituitary gland is located near the nerves that carry information from the eyes to the brain (optic nerves). Tumours of the pituitary gland can cause difficulty with vision, such as tunnel vision, blurred vision or double vision. They can also cause changes to body functions and even your appearance depending on whether any of your hormones are affected. A transsphenoidal hypophysectomy is intended to improve or protect your eyesight and in some situations to correct the over-production of hormones.

4 What are the risks of transsphenoidal hypophysectomy?

All operations and procedures have risks and we will talk to you about the risks of transsphenoidal hypophysectomy.

This procedure is performed under general anaesthetic, which means you will be unconscious and unaware or ‘asleep’ throughout. Your anaesthetist will talk to you about the risks of general anaesthesia. They will talk to you about pain control and prescribe pain-relieving medicines.
Problems that may happen straight away

- Pain: Sore nose and headache. This happens quite commonly and you will be given pain relieving medicine regularly and as required.

- Nausea and vomiting: This can be caused by blood trickling into the stomach during or following surgery. We prescribe medicines to counteract this.

Problems that may happen later

- Cerebrospinal Fluid (CSF) leak: CSF is a clear fluid which surrounds the brain and spinal cord. CSF leaks occurring during surgery are sealed using special surgical glue or a small piece of fat taken from the abdomen or thigh. CSF leaks occurring after surgery may require the insertion of a lumbar drain to seal the leak and prevent infection. A lumbar drain is a thin plastic tube connected to a drainage bag. It is inserted into the CSF space around the spine in the lower back. Most drains are required for about 5 days. About 5 in every 100 patients will require treatment of a CSF leak following surgery.

- Diabetes Insipidus: This is a condition where the hormone that regulates water balance (Vasopressin) in the body is affected. Diabetes insipidus causes people to feel very
thirsty and to pass large amounts of urine. It often settles down after a few days. It can be treated with hormone replacement.

- **Hypopituitarism:** The pituitary gland can be damaged by the tumour and this is sometimes worsened by surgery. In this case, medication is required to replace the natural hormones that keep the body healthy. These may include hydrocortisone, levothyroxine, oestrogen/testosterone and occasionally growth hormone. About one in ten patients will require additional hormone replacement after surgery.

### Problems that are rare, but serious

- **Worsening of vision.** This happens rarely but is more common in patients who have significant problems with their eyesight before surgery. Very occasionally, another operation is required to remove a small blood clot causing pressure on the nerves to the eyes.

- **Injury to the carotid arteries.** These lie on either side of the pituitary gland and supply blood to the brain. Injury to the carotid arteries during surgery may lead to serious complications such as stroke or death. There is a very small chance of this, much less than one in a hundred patients.

Sometimes it is not possible to remove all or enough of the tumour and you may find that your symptoms are the same or that your eyesight has not improved. In this case, further
surgery may be required. If the tumour cannot be removed through the nose a larger operation through the brain (craniotomy) may be necessary at a later date.

5 What will happen if I choose not to have this surgery?

The choice to go ahead with surgery is entirely yours. If you choose not to have this surgery, your vision may worsen, in some situations leading to blindness. Other systems in your body may be damaged by the effects of too much or too little of the hormones, such as your heart or the effects of diabetes or high blood pressure. It may also be more difficult to treat your tumour at a later date if you delay surgery.

6 What alternatives are available?

Your neurosurgeon will talk to you about all alternative treatments and their risks and benefits.

Medications: Some pituitary tumours can be treated with medication under the care of an endocrinologist (a doctor who specialises in hormone disorders). However, this treatment is not suitable for the majority of pituitary tumours.

Radiotherapy: X-ray treatment can be used to control the growth of some tumours.
**Gamma knife surgery:** This is a relatively new treatment and involves directing several beams of radiation at the tumour. It is only suitable for some small tumours.

**7 How should I prepare for surgery?**

You may be seen in the Pre-operative Assessment Clinic a few weeks before your admission to hospital for surgery. Any tests which may be necessary can be done at this appointment. You will be seen by a doctor and nurse and will have the opportunity to ask any questions you may have.

They will ask you about all medicines you are taking and advise you about which if any medicines need to be stopped prior to surgery. They will also tell you when to fast from if you are to be admitted on the day of surgery.

**8 Asking for your consent**

We want to involve you in all the decisions about your care and treatment. If you decide to go ahead with treatment, by law we must ask for your consent and will ask you to sign a consent form. This confirms that you agree to have the procedure and understand what it involves. Staff will explain all the risks, benefits and alternatives before they ask you to sign a consent form. You may also be asked whether you wish to be involved in ongoing research projects on pituitary disease. This is entirely your decision, and will not impact your clinical care. If you are unsure about any aspect of your proposed treatment,
or of the proposed research, please do not hesitate to speak with a senior member of staff again.

9 What happens during surgery?

The nurse looking after you or a member of staff from the admissions lounge will escort you to the operating theatre. They will give you a gown and some elastic stockings to wear.

Operating theatre staff will confirm your identity and the operation you are having.

The anaesthetic is commenced in an anaesthetic room next to the operating theatre. Once you are ‘asleep’ you will be moved to the theatre and carefully positioned on the operating table.

The pituitary gland is reached through your nose. The surgeon will use either a microscope or an endoscope (a type of telescope) to improve their view. Some surgeons prefer to use one method or another although both are recognised procedures. If you would like to know more or would prefer a particular method, do ask your surgeon about which technique they use.
10 What should I expect after transsphenoidal surgery?

The operation takes approximately one to two hours. Afterwards you will stay in the recovery ward until you are fully awake and well enough to go back to a ward.

You will have a light plastic mask over your nose to give you oxygen and this will stay in place until the evening or following morning. A nose ‘pack’ is often inserted in one or both nostrils with a gauze dressing under your nose. You will need to breathe through your mouth so you may feel quite dry.

We will monitor your pulse, blood pressure and oxygen levels regularly. We also need to record how much fluid you drink and how much urine you pass.

You will have a drip to keep you hydrated until you can drink enough, usually the next morning. You may start to eat and drink as soon as you feel able. If you feel sick, we can give you medication to help.

A nurse or nursing assistant will help you to get up and about until you feel steady enough to walk on your own. We expect you to be walking about on your own by the day after the operation. This helps to avoid complications such as deep vein thrombosis (blood clots in your leg veins) and chest infection.
You will need to have blood tests and possibly visual field tests over the next few days.

Nose packs are usually removed the day after surgery, although occasionally, they are left in for a few days.

There will be some leakage of blood-stained mucous from your nose for a few days afterwards. Your nurse will put a gauze pad under your nose to catch any leakage.

Please tell your nurse or doctor immediately if you notice leakage of thin, watery fluid from your nose or a trickle of salty tasting fluid down your throat. This may mean a CSF leak has developed, for which you are likely to require further treatment (usually a lumbar drain).

Your nose will feel blocked so you will breathe through your mouth. You can use mouthwashes or water to keep your mouth moist.

Do not stick anything up your nose, even to clean it. Avoid sniffing or blowing your nose, bending forwards or lifting heavy weights for four to six weeks after surgery. This is to help the wound at the top of your nose to heal thoroughly.

Do not swim with your head under the water until you have seen your doctor in the outpatient clinic.
If you have had a CSF leak repaired during surgery, you will have a small wound and dressing on your abdomen or thigh. Your consultant will tell you which type of stitch or clip has been used to close the wound. They will also tell you when you are able to shower and when and if these will need to be removed. Some stitches may dissolve. If metal clips or non-dissolvable stitches are used these can be removed after seven days by your GP or practice nurse.

The nurse caring for you on the ward will tell you how to look after your wound and also give you a letter to take to your GP if necessary.

You should expect to be in hospital for three to five days.
11 Steroid medication

Some patients will require hormone replacement therapy after surgery. The most important hormone is called cortisol. Cortisol is a type of steroid, which helps your body to cope with stress. The drug most commonly used to replace cortisol is called hydrocortisone.

If you are prescribed hydrocortisone tablets please read the information leaflet provided with your medicines carefully. You must take the tablets as directed by your doctor. If you take hydrocortisone late in the day, you may find that you have difficulty sleeping.

Do not miss out any doses unless your doctor has advised you to do so, such as before certain blood tests.

Ensure you do not run out of tablets and always go to your GP for a new supply in plenty of time.

You will be given a ‘steroid card’ to carry with you at all times. If you have an accident, a sudden illness, an operation or dental treatment it is important that the doctors treating you know that you are taking steroid medication.

There is a specific patient information sheet regarding hydrocortisone medication. If you do not already have one, please ask the pituitary clinical specialist nurse or your treating doctor for a copy.
12 What problems should I look out for after I go home?

If you have any of the following please contact the Pituitary Team immediately during working hours:

- Leak of clear, watery fluid dripping from your nose
- Fresh bleeding from your nose
- Severe thirst
- Passing large amounts of urine
- Unable to take your hydrocortisone, eg you have vomiting or diarrhoea
- Headaches not relieved by simple painkillers
- Fever
- Drowsiness
- Feeling generally unwell or excessively tired a week or two after surgery.

Outside of normal working hours, if your problem is urgent, contact your on-call GP or go to the Accident and Emergency Department at your local hospital.

Alternatively, urgent advice can be sought from the on-call neurosurgical doctor via the hospital switchboard on 020 3456 7890, bleep 8100.
13 How will I be followed up after surgery?

You will be seen by a member of the team in the outpatient clinic approximately six to eight weeks after your operation. If you are not given the details of this appointment before you leave the hospital, it will be sent to you by post.

You may have blood tests at this follow up appointment. Any other investigations, such as eye tests or a head scan are usually arranged following this visit.
14 Where can I get more information?

The Pituitary Foundation
P.O. Box 1944
Bristol
BS99 2UB
Telephone/fax: 0845 450 0376
Email: helpline@pituitaryorg.uk
Website: www.pituitary.org.uk

National Institute for Health and Clinical Excellence
Website: www.nice.org.uk

University College London Hospitals
Website: www.uclh.nhs.uk

UCLH Patient Medicine Helpline:
Email: infomed@uclh.nhs.uk
Telephone: 020 3447 3025

UCL Hospitals cannot accept responsibility for information provided by other organisations.
15 Contact details

Pituitary Nurse Specialist
Direct line: 020 3448 3265
Mobile: 075 3820 6413
Fax: 020 3448 3340
Email: UCLH.NHNN-PituitaryCNS@nhs.net

Neurosurgeon
Secretary: 020 3448 3305 / 3421
Fax: 020 3448 3340

Endocrinologist
Secretary: 020 3447 9101
Fax: 020 3447 9278

UCLH Switchboard: 0845 155 5000 (There is no additional charge for using an 0845 number. The cost is determined by your phone company’s access charge)

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16 How to find us

[Map showing bus stops and station locations]
Space for notes and questions