

TRANSSPHENOIDAL RESECTION OF A PITUITARY TUMOUR

Patient information for microscopic surgery through the nose

Your operation at a glance

Approach: Through the right nostril using submucosal dissection.

Visualisation: Operating microscope.

External scar: None expected.

Nasal packs: Two packs, usually removed after 48 hours.

Hospital stay: Approximately 3-4 days.

Clinic review: 1-2 weeks after surgery.

Repeat MRI: Pituitary MRI after approximately 2-3 months.

What is the pituitary gland?

The pituitary gland is a small gland situated at the base of the brain, behind the nose and below the optic nerves. It produces hormones that help regulate thyroid function, stress response, growth, reproduction, metabolism, and the balance of water and salt in the body.

Most pituitary tumours are benign. They may cause symptoms by producing excess hormones, reducing normal hormone production, or pressing on nearby structures such as the optic nerves.

Why might surgery be recommended?

- Pressure on the optic nerves causing reduced vision or visual-field loss
- Progressive enlargement of the tumour
- Excess hormone production not adequately controlled by medication
- Compression of the normal pituitary gland
- Pituitary apoplexy, bleeding or sudden swelling within the tumour
- The need to obtain tissue for a definite diagnosis

The aim is to remove as much tumour as can be removed safely, relieve pressure on the optic nerves, preserve normal pituitary function where possible, and obtain tissue for laboratory analysis. Complete removal cannot always be guaranteed, particularly when the tumour extends around important blood vessels or nerves.

The pituitary multidisciplinary team

Pituitary surgery is planned and delivered by a team of specialists. Close communication between these teams is important before, during and after your operation.

Neurosurgeon

Assesses the tumour, discusses the surgical options and performs the operation.

Endocrinologist

Assesses pituitary hormone function and advises on hormone replacement before and after surgery.

Ophthalmologist

Assesses visual acuity and visual fields, particularly when the tumour is close to or pressing on the optic nerves.

Anaesthetist

Assesses your medical fitness, administers the general anaesthetic and monitors you throughout surgery.

Before your operation

Preoperative assessment

- Blood tests, including pituitary hormones and blood sodium
- MRI of the pituitary gland
- Formal visual-field and eyesight assessment
- Endocrinology review
- Anaesthetic assessment
- ECG, chest imaging or other tests when clinically indicated

Medication

Bring a current list of all prescribed medication, over-the-counter medication, supplements and traditional remedies. Blood-thinning medicines, some diabetes medicines and certain supplements may need to be adjusted before surgery. Do not stop prescribed medication unless specifically instructed by your treating team.

Steroid treatment

Some patients require steroid replacement, such as hydrocortisone, before, during or after surgery. This depends on your hormone results and the findings after surgery. Steroid medication must not be stopped suddenly unless advised by the endocrinology or neurosurgical team.

Fasting and illness

Follow the hospital instructions on when to stop eating and drinking. Inform the hospital if you develop fever, influenza-like symptoms, a chest infection, nasal or sinus infection, vomiting, diarrhoea or another significant illness before admission.

During the operation

General anaesthesia

The operation is performed under general anaesthesia. You will be asleep throughout the procedure.

Surgical route through the nose

The surgeon enters through the right nostril and performs a careful submucosal dissection. The lining inside the nose is gently elevated to create a surgical corridor through the sphenoid sinus to the pituitary gland.

No visible external scar

The operation is performed entirely through the nose. There is normally no skin incision and no visible external facial scar.

Use of the operating microscope

An operating microscope provides magnification and strong illumination. It helps the surgeon identify the tumour, normal pituitary gland, optic structures and nearby blood vessels with precision.

Tumour removal

The tumour is carefully removed. The surgeon aims to achieve the safest possible removal while protecting the normal pituitary gland, optic nerves and major blood vessels. If the tumour is firmly attached to or surrounds critical structures, a small amount may be intentionally left behind to avoid neurological or vascular injury.

Reconstruction

At the end of surgery, the operative area is inspected. If cerebrospinal fluid leakage is identified, the opening may be repaired using surgical packing, tissue, fat, fascia, bone, surgical glue or other specialised materials, depending on the findings.

Nasal packs

Two nasal packs are placed at the end of the operation. They help control bleeding and support the tissues inside the nose. They are usually removed approximately 48 hours after surgery. While they are in place, the nose will feel blocked and you will breathe mainly through your mouth.

After the operation

You will be monitored in the recovery area and then transferred to the ward or a higher-dependency area when required.

- Level of consciousness and neurological condition
- Vision and eye movements
- Blood pressure, pulse and oxygen level
- Fluid intake and urine output
- Blood sodium and pituitary hormone function
- Headache, nausea and pain
- Nasal bleeding or clear fluid leakage

Common early symptoms

A blocked nose, dry mouth, mild sore throat, pressure behind the nose, headache, mild nausea and blood-stained nasal discharge are common during the early recovery period. Temporary alteration of smell or taste may also occur.

Hormone and fluid monitoring

Pituitary surgery can temporarily or permanently affect hormone production. Blood tests may be performed to assess cortisol, thyroid function, blood sodium and other pituitary hormones.

Diabetes insipidus

Diabetes insipidus is a disturbance of water balance that may occur after pituitary surgery. It can cause excessive thirst and unusually large amounts of urine. Your fluid intake, urine output and blood sodium will be monitored. It is often temporary, but medication may sometimes be required.

Low blood sodium

Blood sodium may fall several days after surgery, sometimes after discharge. Symptoms can include increasing headache, nausea, vomiting, unusual tiredness, confusion, drowsiness, muscle cramps or seizures. These symptoms require urgent medical assessment.

Cortisol deficiency

Low cortisol can cause severe weakness, nausea, vomiting, dizziness, low blood pressure, confusion or collapse. Take any prescribed hydrocortisone or steroid replacement exactly as instructed and do not stop it suddenly.

Care of the nose

Protecting the surgical corridor is important during the early healing period.

- Do not blow your nose until your surgeon permits it
- Do not pick the nose or insert tissues, cotton buds or other objects
- Sneeze with your mouth open
- Avoid forceful sniffing
- Avoid bending forwards repeatedly
- Avoid heavy lifting, vigorous exercise and straining
- Use prescribed nasal sprays or rinses only as directed
- A stool softener may be prescribed to reduce straining

Going home

Most patients are discharged approximately three to four days after surgery. The actual timing depends on vision, hormone results, blood sodium, urine output, removal of the nasal packs, pain control, mobility and the absence of concerning complications.

You should not drive yourself home. Arrange for a responsible adult to accompany you and assist during the early recovery period.

Recovery at home

- Take regular gentle walks and increase activity gradually
- Expect some tiredness and allow time for rest
- Avoid strenuous exercise, heavy lifting and contact sports until cleared
- Take all medication exactly as prescribed
- Do not change or stop hormone medication without medical advice
- Do not drive until your vision is satisfactory, you are alert, and your surgeon has advised that it is safe

Follow-up

Clinic review

You will normally be reviewed in the neurosurgical clinic approximately one to two weeks after surgery. The team will assess your recovery, vision, nasal symptoms, hormone replacement, histopathology results and return to daily activities.

Endocrinology and ophthalmology

Further endocrinology review and hormone testing may be required. If vision was affected before surgery, repeat visual-field and eyesight assessment may also be arranged.

Repeat MRI

A repeat MRI of the pituitary gland will usually be arranged approximately two to three months after surgery. This assesses the extent of tumour removal, relief of pressure on the optic nerves and whether any residual tumour requires surveillance or further treatment.

Possible risks and complications

- Nasal bleeding, infection, crusting or blockage
- Temporary alteration of smell or taste
- Cerebrospinal fluid leakage
- Meningitis or another infection
- Damage to the normal pituitary gland and the need for hormone replacement
- Diabetes insipidus or low blood sodium
- Incomplete tumour removal or later tumour regrowth
- Persistent excessive hormone production
- Deterioration of vision or double vision
- Injury to important blood vessels, stroke or severe bleeding
- Complications associated with anaesthesia
- Need for further treatment or another operation

When to seek urgent medical attention

- Clear watery fluid continuously leaking from the nose or running down the throat
- Sudden deterioration in vision or new double vision
- Severe or worsening headache, repeated vomiting, fever or neck stiffness
- Increasing drowsiness, confusion, seizure or collapse
- Heavy or persistent nasal bleeding
- Severe thirst with excessive urine production
- Severe weakness, dizziness or symptoms of low cortisol
- Chest pain, sudden breathlessness or painful swelling of a calf

Continuous clear nasal leakage, sudden visual deterioration, confusion, collapse or heavy nasal bleeding requires immediate medical attention.

Important: This booklet provides general guidance. Your treatment may differ according to the tumour type, size, hormone activity, visual symptoms, operative findings and your general health. Always follow the individual instructions provided by your neurosurgeon, endocrinologist, ophthalmologist, anaesthetist and nursing team.