Transsphenoidal Pituitary Surgery

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The information in this pamphlet is to be updated every 3 years.
The pituitary gland

The pituitary gland is a small, pea-sized gland located at the base of the brain, just above the back of the nose. It acts as the “master gland”. This means it monitors various functions in the body and releases hormones or chemical signals to many other glands and organs in the body (thyroid gland, adrenal glands, ovaries, testes and breasts) directing them to produce their own chemical signals (hormones). These hormones direct and control metabolism, blood pressure, sexual function, growth, reproduction and thyroid function.

Pituitary tumours

Pituitary tumours are quite common and are usually benign (slow growing and non-cancerous). A tumour (an abnormal growth of cells) of the pituitary gland can cause the pituitary gland to malfunction or to push on other tissues or important structures.

If the pituitary gland malfunctions, it can cause a wide variety of symptoms due to too much or too little hormone production. Because the pituitary gland affects so many other glands and organs, diagnosing the malfunction can be difficult. Blood and urine testing may be done to assess hormone production by the pituitary gland.

Some tumours can also grow large enough to press on adjacent parts of the brain, blood vessels, or optic nerves. This pressure can cause problems such as headaches and change in vision.
When surgery is needed

Your doctors have recommended that the best treatment is to surgically remove your tumour. The most common operation is done through your nostril to reach the pituitary gland and remove the tumour. This is called transsphenoidal surgery, which means “through the sphenoid sinus”. This is the most direct route to the pituitary gland and this type of surgery leaves no visible scarring.

The tumour is often removed using an endoscope (fine telescope). The surgery is usually performed by a neurosurgeon and an otolaryngology (“ENT”) surgeon.

In some situations, surgery may be needed through an incision in the top of the head (craniotomy).

The goals of surgery include relieving symptoms, confirming a diagnosis (by the pathologist’s examination of tissue) and controlling hormone levels.

Getting ready (investigations)

An MRI and CT scan are done shortly before surgery. This gives a detailed computer image of the brain that is helpful to the surgeon. A visual field (eye) examination may be done to assess if the tumour is interfering with your vision.

An endocrinologist (a specialist who cares for people with hormone disorders) will follow your treatment and will continue to assess your condition after surgery. Blood and urine tests may be done before your surgery to check your hormone levels.

- worsening headache or odour from the nose area
- constant thirst that is not relieved by drinking
- frequent passing of urine (that wakes you at night, pale colored, more than before surgery)
- lightheadedness, dizziness, or fainting

Go to the Emergency Department immediately if you have:

- persistent dripping of a clear, watery solution from your nose
- drowsiness, or family members have difficulty waking you
- confusion, restlessness, nausea and vomiting

Follow-up

In most cases, lifelong follow-up is necessary

- You will have a follow up appointment with an endocrinologist in 4 weeks – DO NOT STOP YOUR Cortef (Hydrocortisone) until after this appointment unless specifically instructed to do so. You will have blood work 2 weeks prior to this appointment.
- You will have a follow-up MRI, Visual Field Testing, blood work and an appointment with your neurosurgeon and endocrinologist in about 3 months.
- An eye doctor (ophthalmologist) may follow you after surgery.
- Blood work may be done the week following discharge.
- You will have regular follow-up with an ENT surgeon.
Usual activity after surgery
Return to work 6 weeks
NO Bending, lifting, straining 6 weeks
NO Nose blowing 6 weeks
NO Aerobic exercise/swimming 6 weeks
Showering/washing hair no restriction
Flying/air travel no restriction

Medications
After the tumour is removed, normal hormone production may return or there may be permanent loss of some or all of the pituitary hormones. Missing hormones (deficiencies) can be replaced by taking medications. You will be followed by an endocrinologist who will monitor your hormone function.

Continue to take your regular medications unless your doctor tells you otherwise. You may have some discomfort for a few days.

You may have sinus headache and nasal congestion. This will gradually improve over a few weeks. Decongestants may help. Your doctor can recommend the type and amount to take if it is appropriate.

If your mouth becomes dry, take small sips of water frequently. Lip balm or Vaseline® can help with dry lips.

Call your doctor if you have:
- persistent fresh bleeding coming from your nose (a little blood stained mucous is common)
- change in your vision (loss of vision or double vision)
- neck pain, increased temperature, or sensitivity to light
be moved to the general neurosurgery unit. You will be in hospital for about 2-5 days.

During the first 24 hours after your surgery, you will be monitored closely. The nurses will ask you questions about any discomfort you may have. They will assess your blood pressure, heart rate, breathing and vision.

The pituitary gland secretes hormones that control urine output (antidiuretic hormone-ADH) and regulates cortisol (a stress steroid). Therefore, blood and urine tests will be done to monitor the effect of surgery on these hormones.

You may temporarily have a catheter (tube in your bladder) so the nurses can measure your urine production every hour. You will have an intravenous (IV) in your arm. Nurses will also measure how much you are drinking. Do not use a straw to drink as this increases the pressure in the surgical area.

If your surgery was done through the nose, you may have a nasal catheter (a small tube that comes out through the nose) and soft silicone splints inside your nose. You will need to breathe through your mouth for the first day. You may find this uncomfortable; a moist air mask may help. Drinking will also keep your mouth moist. The head of your bed will be in an elevated position to help you breathe easier. The nasal catheter may be removed before you are discharged. The soft silicone splints will be removed following discharge from the hospital by the ENT surgeon.

You may have decreased smell or taste. This should improve in the next couple of months. As much as possible, avoid sniffing, coughing and sneezing. If you do sneeze, keep your mouth open. **DO NOT** blow your nose. This interferes with healing around the incision behind your nose.

You will have a soft pad under your nose which will be changed as necessary. It is normal to have small amounts of drainage from your nose for several days and sometimes several weeks. This will gradually decrease.

If you feel any salty liquid dripping in the back of your throat, or any watery discharge from your nose, notify the nurses.

In some cases, the surgeon may make a small incision on your thigh or abdomen to use a small piece of fat or muscle to place in the space where the tumour was. This wound may cause some discomfort.

**Learn about any medication that you are taking and any side effects before you leave the hospital.**

**At Home**

You may feel weak and tired for a couple of weeks after surgery. You may slowly go back to your usual activities. Do not over do it, allow for rest periods throughout the day. Slowly increase the amount you walk every day. Do not stay in one position. The doctors will discuss with you any lifestyle changes or restrictions that apply specifically to you.

Constipation is common and you may require medication to prevent straining after surgery. Eating fruit and a high-fibre diet, in addition to drinking water or juice will help. Your nurse will instruct you on the appropriate management and medication to prevent this from occurring.

The nasal cavities will often require several inspections by the ENT surgeon. These evaluations usually involve examination of the nasal cavities with an endoscope and removal of excess secretions to promote healing.
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Your doctor’s office will book a date for you to come to the hospital for a pre-admission visit. At this visit, a nurse will ask you about your health and will help prepare you for surgery. This visit may take several hours and may include an assessment by the anesthetist as well as tests such as blood work, an ECG and chest x-ray. Remember to take a list of all the medications you are taking to all of your doctor appointments. Ask your pharmacist for a list of your current medications. Include your vitamins and ‘over the counter medications’. If you are taking blood thinners such as Warfarin (coumadin) or ASA please let your surgeon know as they will need to be stopped prior to surgery.

Please read the booklet *Same Day Surgery Admission* for important general information on your care before and after surgery.

Do not eat or drink after midnight, the night before surgery. Leave all of your valuables at home.

It is advisable to quit smoking as soon as possible prior to surgery as it interferes significantly with healing.

**During surgery**
This surgery usually takes several hours.
Your family members may wait in the neurosurgery inpatient waiting area on unit 7.3. The surgeon will speak with them when the surgery is over.

**After surgery**
You will be moved from the Operating Room to the Recovery Room and then to the Intermediate Care Unit (IMCU) located on the neurosurgery unit. As you recover, you will

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### Usual activity after surgery
- **Return to work**: 6 weeks
- **NO Bending, lifting, straining**: 6 weeks
- **NO Nose blowing**: 6 weeks
- **NO Aerobic exercise/swimming**: 6 weeks
- **Showering/washing hair**: no restriction
- **Flying/air travel**: no restriction

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A Patient’s Guide To Transsphenoidal Pituitary Surgery

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