Parathyroidectomy – an operation to remove overactive parathyroid glands

Information for patients

What are the parathyroid glands ?

There are four parathyroid glands in your neck, each the size of a grain of rice. They are usually situated next to the thyroid gland (Figure 1). They regulate the calcium level in your blood. Sometimes one or more of these glands does not work properly and your calcium level rises above normal.

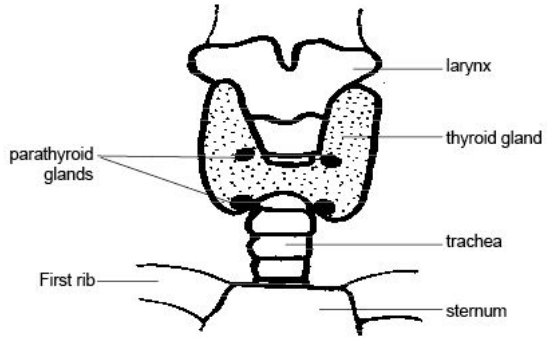

Figure 1

Abnormal conditions of the parathyroid

If one or more of your parathyroid glands are overactive it leads to a raised calcium level in your blood. Because of this you might experience the following symptoms:

- You might feel more tired and sleepy
- Your muscles may feel weak or tender
- The joints become sore
- There is the need to pass urine more often
- There is a tendency to form kidney stones
- Some persons develop constipation
- There is increased nervousness or low mood.

How is parathyroid disease diagnosed?

You may not have any symptoms at all. A high calcium level could be discovered on a routine blood examination. The blood tests are done at least twice to confirm the high calcium level. If the blood tests show high calcium levels, the parathyroid hormone level in the blood will be measured – usually this will be higher than normal.

Once the diagnosis is made based on the results of the blood tests, two scans will be performed to try to identify which of the four parathyroid glands is enlarged/overactive. An **ultrasound scan**, which uses harmless sound waves, is used to examine the organs and tissues of the neck. A **sestamibi scan** is done by injecting a small amount of radioactive substance (sestamibi) into a vein in the arm and taking pictures 2 and 4 hours later to check if the radioactivity is concentrated in one of the parathyroid glands.

How can it be treated?

An operation to remove one or more diseased glands is the only treatment for this condition. After careful consideration of your symptoms and physical and laboratory tests, the doctor has recommended that you have a parathyroid operation.

While you are waiting for the operation you should keep well hydrated (try to drink an extra 1 litre of fluids daily).

If the scans have identified the position of the parathyroid adenoma (non-cancerous tumour), you could have a **minimally invasive parathyroidectomy**, whereby the adenoma is removed through a small cut (less than 1 inch) made at the position indicated by the scans.

About one in three patients have negative scans. If that is your case, you will need a slightly longer cut (about 2 inches) made in the middle of the neck, through which all four glands are identified and the enlarged one removed.

What does the operation involve?

The operation is carried out under general anaesthetic. At the beginning of the operation, a blue dye will be injected into a vein in your arm. This dye concentrates in the parathyroid glands and makes them easier to identify during the operation. The dye is later eliminated from your body by the kidneys and your urine will be green for a couple of days after the operation.

If your pre-operative scans identified the position of your parathyroid gland, the radiologist will mark the skin over the area where the gland is located. The surgeon will then make a cut over the area marked and find and remove the enlarged parathyroid gland.

If the pre-operative scans did not identify the position of the parathyroid gland, the surgeon will make a 2 inch cut in a skin crease in the middle of your neck. The surgeon will use this larger cut to explore both sides of the neck and locate and remove the enlarged parathyroid gland.

The wounds are closed with stitches under the skin. The operation normally takes about 1 hour.

What are the risks of surgery?

- **Failure to identify the enlarged/overactive parathyroid gland**. Even if the pre-operative scans identified the position of the overactive parathyroid gland, there remains a very small possibility that the surgeon will not find the parathyroid gland. Because of this it might be necessary to extend the length of the cut in the neck and to look for the enlarged /overactive parathyroid gland on both sides of the neck. Even then, rarely, the surgeon can't find the offending parathyroid gland. In our experience this happens in 2-3 patients in 100.

- **Injury to the recurrent laryngeal nerve (risk approximately 1 in 200)**. This nerve passes close to the thyroid and parathyroid glands and controls movement of the vocal cord on that side of the neck. Injury to this nerve causes hoarseness and weakness of the voice. This problem is more common after thyroid surgery. Generally this problem lasts for several months before the voice returns to normal.

- **Voice changes.** Any operation on the neck can produce some change in the voice; fortunately this is not normally detectable and it settles within few months. You might find your voice is slightly deeper and you might experience voice fatigue. This is significant mainly for those who

use their voice for professional reasons. Please ask further details if you have any particular concerns.

- **Bleeding**. This is a rare complication that can lead to neck discomfort. Very rarely patients will need to return to theatre to have the neck explored so that the cause of bleeding can be identified and dealt with.

- **Low blood calcium levels.** Once the overactive parathyroid gland has been removed, the other glands may take a few days before returning to normal activity. In addition, your bones may absorb more calcium from the blood (a condition called "hungry bone syndrome"). For these reasons, your calcium levels can drop too much after the operation. This could trigger tingling in the lips and fingers. To prevent such problems, we may prescribe calcium tables for you to take for the first two weeks after the operation.

- **Scar**: The scar may become relatively thick and red for a few months after the operation before fading to a thin white line. Very rarely patients develop a thick exaggerated scar.

These potential side effects and complications are extremely rare. The figures are based on our experience and results of previous operations. We have published most of these results in the surgical literature and will be happy to provide further information.

- **Risks of general anaesthesia:**
  Modern anaesthesia is very safe and serious problems are uncommon.
  After an anaesthetic it is common (risk 1:10) to feel sick or vomit or experience the following: sore throat, dizziness, blurred vision, headache, itching, aches, pains and backache.
  It is uncommon (1 in 1000 people) to have a chest infection, bladder problems, muscle pains, slow breathing (depressed respiration), damage to teeth, lips or tongue, an existing medical condition getting worse.

  Rarely (1:10,000 or less) patients have damage to their eyes, a serious drug allergy, nerve damage, equipment failure, awareness (becoming conscious during your operation) or death.

  The risk to you as an individual will depend on: whether you have any other illness, personal factors (such as smoking or being overweight) or surgery which is complicated, long or done in an emergency.

  Please discuss any pre-existing medical condition with your anaesthetist.

  For more information about risks associated with your anaesthetic visit www.rcoa.ac.uk or ask your anaesthetist.

Pre-operative assessment

Most patients come for an appointment at the Pre-operative Assessment Clinic. At this clinic we will ask you for details of you medical history and carry out any necessary clinical examinations and investigations. This is a good opportunity for you to ask us any questions about the operation.

We will ask you about any medicines or tablets that you are taking – either prescribed by a doctor or bought over the counter in a pharmacy. It helps us if you bring details of your medicines with you - for example, bring the packaging with you.

We will give you a copy of the consent form and further information about what happens on the day of your operation. Please read these carefully. If you have any further questions, please ask a member of the surgical team on the day of your operation before signing the consent form.

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Admission and the day of your operation

Our separate leaflet “Preparing for your operation and the Theatre Direct Admissions process” tells you about eating and drinking before your operation, what to bring with you, what will happen on the day and arrangements for going home.

Recovery

You will wake up in the recovery area with an oxygen mask on your face. The recovery nurse will look after you until you are awake and ready to go to the ward.

Back on the ward

The ward nurse will check you vital signs and pain scores. You will be offered pain relief if you need it.

You will be allowed to drink water at first. Once are able to tolerate this you will be able to have a warm drink and something light to eat. You will have an intravenous drip in your arm that can be removed as soon as you are drinking enough.

When you get out of bed for the first time a member of staff should be with you in case you feel light headed or dizzy.

After your operation

After the nurse has checked your blood pressure, temperature and your wound site, you will be advised to rest. We will monitor your level of pain and offer you pain relief as and when you need it.

You will be allowed to drink water. If you are able to tolerate this and do not feel sick you will be able to have a warm drink and something light to eat.

When you get out of bed for the first time a member of staff needs to be with you in case you feel light headed or dizzy.

Going home

You will normally be allowed home the day after your operation. When you get home you should rest for 2-3 days.

Wound care

The wound should be kept dry for 48 hours but it can be left without a dressing. Some people like to wear a loose scarf to cover the wound.

The steristrips should stay on for one week. However, you will need to make an appointment with your GP practice nurse to have the suture under the skin removed on the third day after the operation. **Please make this appointment before you come into hospital.**

When completely healed the wound can be gently massaged with lanolin cream to soften the scarring.

Is there anything I should look out for when I go home?

If you have any concerns about your wound because it is red, hot, swollen or painful you should seek advice from your GP or practice nurse.

Follow-up

We will give you an appointment to be seen in the Outpatient Department about 6 weeks after your operation. At this time the surgeon will discuss the results with you and any further treatment and follow up you may need.

Resuming normal activity and returning to work

You should be able to return to work and normal activities after about 1 week. However, this may vary depending on the type of work you do. It is normal to feel tired for the first few weeks. You can drive as soon as you are able to perform an emergency stop without pain, but check with your insurance company as policies vary.

Further information

You may find information on the following website useful:

www.baes.info British Association of Endocrine-Thyroid Surgeons