SIVUH Department of Otolaryngology THYROID INFORMATION SHEET.

Thyroid nodules

Thyroid nodules are common – (10-50% of the population). They are more common in females. The vast majority of thyroid nodules are benign (non-cancerous). However, up to 5-10% can represent thyroid cancer.

The first-line investigation for all thyroid nodules is biopsy using a procedure called fine needle aspiration (FNA). In this procedure, a small needle is used to take a few cells from the nodule which are then submitted for examination in the pathology laboratory. This may help to differentiate between benign and malignant (cancer). However, in some cases it is not possible to make a clear distinction. In such cases, you will generally be advised to undergo thyroid surgery.

Thyroid cancer:

It should be noted that the vast majority (>90%) of thyroid cancer cases are very non-aggressive in their behavior. Growth is typically very slow, and cure rates after surgery are very high. It is even possible that some very small cancers (less than one centimeter in size) might never grow to any significant degree in the patient's lifetime. However, a small proportion of thyroid cancers have the potential to develop into more aggressive cancers if not adequately treated.

Indications for thyroidectomy:

1. Treatment of thyroid cancer
2. Diagnosis and treatment of thyroid nodules, where FNAC is inconclusive, or where there are other reasons to suspect thyroid cancer
3. Thyroid surgery is also performed for many non-cancerous conditions, e.g. huge enlargement of the thyroid gland; hyperthyroidism, etc.

How it is performed:

An incision is made in a neck crease. The size of the incision will depend on the size of the thyroid gland. In some patients, it is possible to perform the surgery through an incision as small as 2-3 cm. The exact site and size of the incision will depend on the size of your thyroid gland, the anatomy of your neck, and the location and definition of your neck creases.

Once the incision is made, surgery to remove either one half or all of the thyroid gland is performed. In patients with thyroid cancer, the surgeon will also examine the lymph nodes (glands) located around the thyroid gland, and, if enlarged, these will be removed. In patients with very large thyroid glands, a drain may be placed to drain excess fluid which builds up post-surgery.

Should I have half or all of my thyroid gland removed?

For most patients with a suspicious thyroid nodule, removal of that half of the thyroid gland containing the nodule (thyroid lobectomy) is all that is required. If the nodule is subsequently found to be benign, then no further treatment is necessary. On the other hand, most patients with thyroid cancer will need the entire gland removed. If the diagnosis of thyroid cancer is made pre-operatively, then an up-front total thyroidectomy is usually planned. However, the diagnosis of thyroid cancer is frequently only made post-operatively in patients who have undergone thyroid lobectomy alone, after pathological examination of the removed nodule. In such patients, a second operation to remove the remaining half is generally recommended.

The advantage of a total thyroidectomy is that it is highly unlikely any further surgery will be required, regardless of the pathological (laboratory) findings. However, total thyroidectomy is a bigger operation than thyroid lobectomy, with slightly higher risk of complications (see below). The other major disadvantage with a total thyroidectomy is that patients will have to take daily medication for the rest of their lives to replace their thyroid hormone. The vast majority of patients has no trouble with this, and do not feel any different on thyroid hormone tablets than they did before their surgery, but a small proportion of patients may complain of feeling different e.g. less energy / more tired.

In patients with large nodules on both sides of the thyroid, it is often better to remove the entire gland at the initial operation, even if there is no suspicion of cancer. The reason for this is that if only half of the thyroid gland is removed, then the remaining nodules in the other half will have to be followed up post-operatively with repeated ultrasounds / FNAs. In many of these patients, the remaining nodules will enlarge with time, and future FNAs may at some stage be reported as inconclusive or suspicious. Thus there is a significant risk that further surgery at some point in the future will be recommended. Thus, many patients prefer to have the entire gland removed at the initial operation, so that there will be no uncertainty or need for follow-up in the future.

In cases where a thyroid lobectomy alone is planned, but unexpected suspicious intra-operative findings are encountered (e.g. nodule extending outside thyroid gland into surrounding muscles, or enlarged lymph nodes near thyroid gland), then your surgeon may elect to proceed immediately to a total thyroidectomy +/- removal of lymph nodes. The reason for this is because, if thyroid cancer is actually present, this extra surgery will be necessary and it is easier, cleaner, and safer to do this at the initial operation. For these reasons, even if your surgeon is planning to remove only half of the thyroid gland, he/she will usually get your permission to perform a total thyroidectomy if suspicious findings are encountered. However, it will not be possible to confirm whether or not cancer is present until the entire gland has been examined in the laboratory.

What I can expect post-surgery:

You will generally go home after 1-2 nights. If you have a total thyroidectomy, you will need to be put on thyroid hormone tablets.

If you have steristrips (paper bandages) over the wound, you will find they start becoming loose after a few days. At this point you may remove them. If your wound is tending to be crusty, you can keep it clean using a cotton bud (Q-tip) and saline or half-strength hydrogen peroxide (which you can pick up at pharmacist). You can shower and wash, but keep soaps /shampoo away from the wound, and take care to pat the wound dry, and not to rub it with a towel. Keep ultraviolet rays (sunlight) off the wound for several months. You can use various wound preparations after 6 weeks. These have to be rubbed well into the wound, therefore best not to use these prior to 6 weeks as rubbing the wound at this stage may make scarring worse.

For the first 3 or 4 weeks, the scar tends to become more swollen and prominent. After that it starts to fade. The speed with which it fades is very variable. It usually takes longer to fade in younger people. In some young people, it can up to 1-2 years for it to fully fade, whereas in some older people, it may be invisible after only a few weeks. Long term the scar heals extremely well in most patients.

Next to the thyroid gland are 4 (2 on each side) very small glands which control your calcium levels (parathyroid glands). The function of these glands may be temporarily disrupted after the surgery. Patients undergoing total thyroidectomy may thus experience temporary falls in their calcium levels. If this happens, it is usually not apparent until the second postoperative day. For this reason, patients undergoing total thyroidectomy need to stay in hospital for 2 nights postoperatively, with once or twice daily blood tests done to monitor calcium levels. If calcium levels drop, patients will need to be put on calcium and/or vitamin D tablets for a few weeks. (This is not an issue if only half of your thyroid is being removed.)

After the surgery, you should avoid any activities using the upper body (manual work, lifting, swimming, tennis etc.) for 2 weeks.

If you have had your total thyroid gland removed, you will need to be started on eltroxin tablets. The usual protocol is for patients to be sent home on 50 mcg of eltroxin daily, which increases after 2 weeks to 100 mcg daily. The correct dose of eltroxin is highly variable from person to person. Therefore you will need to visit your GP after 6 weeks to check your thyroid blood tests in case any adjustment in dose is necessary.

If you have only had half your thyroid removed, you will not be started on eltroxin, as the remaining half of a thyroid will usually be sufficient to produce enough thyroid hormone. However, up to 25% of people who have had half their thyroid removed may become underactive in the future, thus you should visit your GP after 3-6 months for blood tests to confirm that you still have enough thyroid hormone, and you should have further blood tests done every 1 to 2 years thereafter.

What are the risks?

1. Bleeding into the wound. Risk is < 1%. It generally will occur within the first 6 hours. If it occurs you will have to be brought immediately back to the operating theater to have the blood clot removed and any bleeding stopped.
2. Damage to the recurrent laryngeal nerve. Risk < 0.5%. This nerve runs beside the thyroid gland and supplies the vocal cords. Injury to this nerve on one side will most likely cause some hoarseness of your voice. This usually improves over the next 6 months, to give a satisfactory voice. If not, you may require an operation to improve your voice.
   In around 5% of patients, despite the fact that the nerve is preserved, it does not function properly for a few weeks. If this happens, you may experience temporary hoarseness, but can expect to return to full normality within 6-12 weeks.
   Injury to the recurrent laryngeal nerve on both sides after total thyroidectomy is a more serious problem. The risk in experienced hands is extremely low (< 0.1%). If this occurs, you will need a temporary tracheostomy (tube in your neck to your windpipe). Your voice will actually be quite good, but you will need further surgery on your voice box to improve your breathing.
3. Damage to the superior laryngeal nerve. Risk unknown, probably around 1%. This is a different nerve located just above the thyroid gland. Injury is essentially unnoticeable in most patients, but may cause problems for professional singers.
4. Permanent damage to the parathyroid glands. Only an issue for total thyroidectomy patients. This may require long-term calcium and vitamin D tablets. Risk 1-5%.
   Occasionally, despite the surgeon's best efforts to preserve the parathyroid glands, one or more are inadvertently removed. These parathyroid glands may be detected by the pathological examination. This usually does not cause long-term problems.
5. Other wound problems – infection / fluid build-up. Risk <5%. Generally resolves with conservative treatment.
6. Neck tightness. Some patients complain of a sensation of tightness in their neck in the months after the operation. The best way to avoid this is to make sure you swallow your food normally and move your neck as normal in the postoperative period, to prevent any scarring that can cause tightness.

Other things you should know:

1. Negative specimen. Sometimes, a total thyroidectomy is performed on the basis of an FNA which is reported as being suspicious or positive for thyroid cancer, but when the thyroid gland is submitted for pathological examination, no evidence of cancer is found.