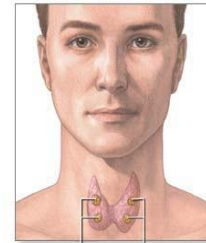




Parathyroid

What are parathyroid glands and where are they located?

A parathyroid is a small gland which is part of the endocrine system. There are 4 parathyroid glands which are located near or attached to the thyroid gland. Parathyroid glands produce parathyroid hormone (PTH). Parathyroid hormone regulates calcium, phosphorus, and magnesium balance within the blood and bone by maintaining a balance between the mineral levels in the blood and the bone.



Parathyroid glands

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What causes an overactive parathyroid?

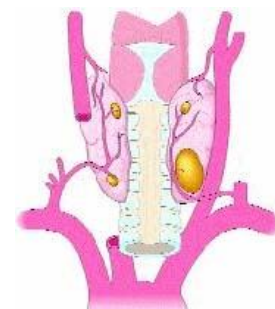
Hyperparathyroidism is over activity of the parathyroid glands and too much PTH is produced. In 90% of cases, the cause of hyperparathyroidism is when one gland develops a benign tumor called an adenoma. Parathyroid hyperplasia is the enlargement of all four parathyroid glands, and is less common. Cancer of the parathyroid is very rare. Some studies show that the incidence of parathyroid disease (hyperparathyroidism) is 1 in 2,500 people. Many people do not know that they have hyperparathyroidism and it is often incidentally found on regular blood work. This increase in parathyroid hormone causes more calcium to be taken from the bone and more calcium to be reabsorbed by the intestines and kidney. The incidence of hyperparathyroidism rises with age, peaking at midlife.

What are the symptoms of hyperparathyroidism?

Many people have no symptoms. The condition is often discovered accidentally when blood tests are done for another medical reason.

When symptoms occur they may include the following:

- Bone fractures
- Confusion
- Muscle spasm or tetany
- Constipation
- Kidney stones
- Lethargy
- Muscle pain or weakness
- Nausea
- Osteoporosis



(parathyroids shown in yellow)

How is hyperparathyroidism diagnosed?

When a doctor finds that a patient has an elevated calcium level they should then check PTH, phosphorus and Vitamin D levels.

A 24-urine test is done to check for increased calcium in the urine.

Other tests include:

- Bone density exam
- Kidney x-rays (may show kidney stones)
- MRI or sestamibi neck scan (this may show swelling or over activity of the parathyroid glands)
- Neck ultrasound



Sestamibi scan showing increased uptake in one area of the thyroid bed

What is the treatment for hyperparathyroidism?

Surgery is the only curative treatment for primary hyperparathyroidism. If symptoms are present or your calcium level is very high, surgery may be needed to remove the parathyroid gland that is overproducing the hormone. Hyperparathyroidism can progress, so surgery may be recommended even for people with mild or no symptoms. If testing reveals you have parathyroid hyperplasia, usually 3 and 1/2 glands are removed. The remaining tissue may be implanted in the forearm so a doctor can easily operate on it if symptoms come back. This tissue will also help the body control calcium levels.

If you have a parathyroid adenoma you may be a candidate for a minimally invasive radio-guided parathyroidectomy (MIRP).

How is a MIRP performed?

This surgical procedure is performed in the hospital. You will receive an injection of nuclear material before this surgery. The nuclear material will be absorbed by the overactive parathyroid. Your surgeon will use a special probe, similar to a Geiger counter, to locate the parathyroid gland in the operating room. Your surgeon will make a small cut (1 to 2 inches) on one side of your neck, and then remove the diseased gland through it. This procedure takes about 1 hour. Your PTH level will be monitored during surgery. Confirmation that the surgery was successful is when your PTH level returns to the normal range. The PTH level will return to normal in a matter of minutes when the adenoma is removed. Most patients go home the same day of their surgery.

Genesee Surgical Associates was the first practice in the Rochester region to perform a MIRP procedure. This surgery decreases incision size and time in the operating room for those patients that are considered candidates. Since 1999, we have had tremendous success with the procedure and have also developed substantial expertise in the technique.