



## **Hyperparathyroidism**

Hyperparathyroidism is a disease involving the small glands that sit next to the thyroid gland called parathyroid glands, which control calcium metabolism. In this disease one of these glands grows into a small (almost always) benign tumor called a parathyroid adenoma and makes too much parathyroid hormone. More rarely, more than one gland is abnormal or all four glands are slightly enlarged. This can cause trouble because it pulls calcium out of the bones and into the blood. As a result it can make the bones weak and cause osteoporosis. In addition too much calcium is filtered through the kidneys and it can increase the risk for a kidney stone. Many people with hyperparathyroidism generally do not feel well. They may have foggy brain, increased fatigue, and can develop high blood pressure. Other people feel perfectly fine and do not develop any health problems from this condition. We say that they have “asymptomatic hyperparathyroidism.”

Hyperparathyroidism is most commonly diagnosed around age 50 but can be diagnosed anytime in adulthood. Sometimes it is very easy to diagnose but sometimes diagnosis can be very difficult. Usually the calcium level is elevated above the normal range, but not always. Usually the parathyroid hormone level is elevated above the normal range, but not always. A 24-hour urine calcium is usually required to help confirm the diagnosis so that we can calculate a measurement called fractional excretion of calcium to exclude a very rare condition called familial benign hypercalcemia or FHH that can look similar by blood testing. This condition is not treated by surgery. The disease also needs to be distinguished from condition



called secondary hyperparathyroidism, which is the body's natural response to low calcium and/or vitamin D as well as other causes of elevated blood calcium.

Diagnosis often requires the involvement of an endocrinologist and often multiple sets of testing are required. An endocrinologist is also a specialist in osteoporosis and will typically request a bone density test when reviewing a case of hyperparathyroidism.

Hyperparathyroidism is only cured by surgery but not every requires treatment. Surgical treatment is important for people who are 1) under the age of 50 2) have very high levels of calcium (>1.0 mg/dl above the upper limit of normal) 3) people who have kidney stones 4) people who have osteoporosis 5) people who have abnormal kidney function , 6) people who have very high levels of calcium in the urine and 7) women who are going to become pregnant. Some people who a clear diagnosis of hyperparathyroidism and just don't feel well or don't want to undergo continued monitoring may also opt for surgery. Very rarely a patient may have very high levels of calcium and is not a candidate for surgery due to other medical conditions. In this case, a medication can be used to control the calcium levels.

Once a decision is made to undergo surgery, we proceed with imaging tests to determine which parathyroid gland is enlarged. If we know this prior to surgery then the surgery is shorter and the incision is smaller. The easiest and quickest test to perform is a neck ultrasound. This is performed in the office by Dr. Brett. The ultrasound takes only about 15 minutes. It does not involve any radiation and in



addition to looking for the parathyroid allows us to evaluate the thyroid gland in case there are any thyroid nodules that need to be evaluated at the same time. Occasionally we will pick up a thyroid cancer “incidentally” when looking for a parathyroid. Approximately 90% of the time, when performed by a very experienced sonographer, the ultrasound will identify the enlarged parathyroid gland. If the gland is not seen by ultrasound it does not mean that it is not present but sometimes the ultrasound just cannot reach certain areas. In those cases another test such as a parathyroid sestamibi scan or a parathyroid 4-D CT scan (or both) may be performed. Even if the imaging tests do not find the enlarged gland, if the diagnosis is clear by the biochemical testing, then a very experienced surgeon will usually be able to find the enlarged gland(s) at surgery.