

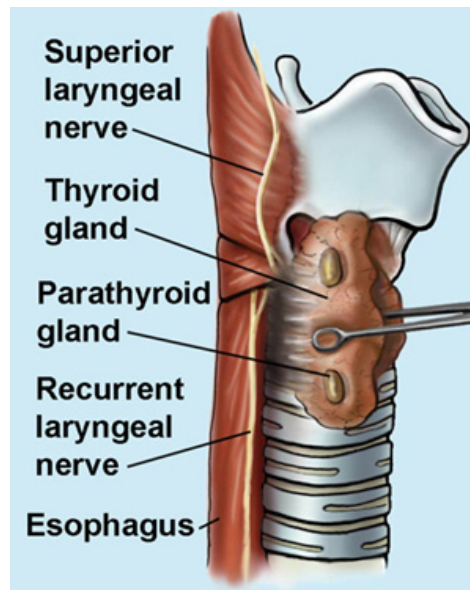
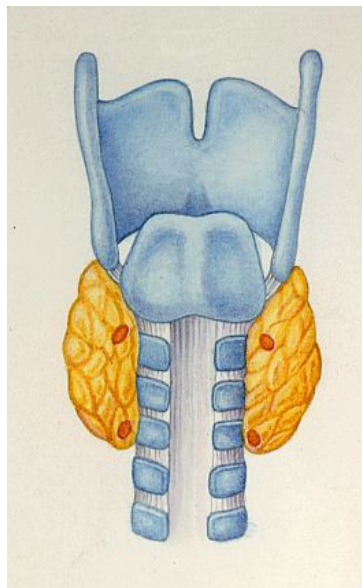
Parathyroid Problems and Minimally Invasive Surgery

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In the majority of cases, most patients never present to their doctor with a symptom, or a constellation of symptoms that leads their doctor to initially suspect a parathyroid disorder. Parathyroid problems are typically diagnosed “accidentally” when blood is drawn for some other indication (a physical examination, an illness, etc.) and the serum calcium level has been found to be elevated. Commonly, they level of calcium is not high enough to raise a suspicion to pursue additional tests when the elevation is mild. On occasion, an elevation in the calcium level is noted on a subsequent blood test, or is now elevated enough to prompt additional tests.

In most laboratories, serum calcium of 10.6 or greater is considered “high” but can vary from lab to lab. Additional testing should include urinary calcium and an intact parathyroid hormone level (iPTH). There are additional tests that may be performed depending on age, sex and other factors. When both the serum calcium and iPTH are elevated, this typically prompts a parathyroid imaging study known as a “parathyroid sestamibi” localizing imaging study performed in the department of nuclear medicine at the local hospital (some hospitals have better parathyroid imaging than others).

Typically, most human beings have 4 parathyroid glands located in predictable locations adjacent and behind the parathyroid gland (left upper and lower, and right upper and lower parathyroid glands). When normal, a parathyroid gland is very small and to the untrained eye sometimes difficult to see / locate, but not often.



A majority of my patients have never heard of a “parathyroid gland” and commonly arrive to the office confused and under the assumption that they have a “thyroid problem” as the terminology is often interchanged. The thyroid, a larger gland that rests on opposite sides of the trachea (windpipe) produces thyroid hormone which helps to regulate the metabolism of our bodies other organ systems. The thyroid and the parathyroid share a relationship in name only and have completely different function. “Para” – the Latin prefix meaning “next or adjacent to” identifies the

parathyroid glands by the anatomical location behind the thyroid glands. The parathyroid glands only function is to precisely regulate the metabolism and storage of calcium by the body by producing a precise level of parathyroid hormone. Parathyroid problems occur when typically one, but sometimes multiple parathyroid glands enlarge and as the abnormal parathyroid gland(s) "grows" it no longer is regulated by the sensitive feedback mechanisms created by the body which tell it when, and when not to produce PTH. Rather, the parathyroid switch is in the "on" position constantly and over time, the elevated level of PTH has a variety of effects on the body. Some patients have hyperparathyroidism have no symptoms, but most patients when questions have a least a few. Symptoms and signs include:

1. Fatigue
2. Myalgia (muscle aches and weakness)
3. Kidney stone formation
4. Problems with mentation / cloudiness of thought / problems concentrating
5. Accelerated Osteoporosis / osteopenia (loss of bone density)
6. Bone pains that often mimic the symptoms of osteoarthritis
7. Unusual abdominal pain / constipation and rarely episodes of pancreatitis
8. Symptoms of depression / lack of interest / emotional liability

Approximately 90% of patients, who have a parathyroid problem have just one (any one) of the four parathyroid glands become abnormal, properly called a parathyroid adenoma. The other 10% of patients may have a disorder known as multigland parathyroid hyperplasia, a different problem that affects all parathyroid glands and requires a different operative approach to treat.

Parathyroid cancer exists but is extremely rare (patients frequently ask). Over 99.5% of parathyroid problems are of the benign variety but do have health consequences if left untreated.

In most cases, even with the advent of new drugs, the mainstay of treating any type of parathyroid disorder is surgery. With minimally invasive surgery, many more patients today are being referred for parathyroid surgery. Personally I perform about 120-150 parathyroid surgeries per year and I do maintain that parathyroid surgery should be performed by an experienced thyroid/parathyroid surgeon. With minimally invasive surgery and a positive parathyroid scan, the incision made is typically 2 cm, the surgical procedure brief via a bloodless surgical procedure, relatively painless and in most cases performed as an outpatient procedure. In most cases patients are able to conduct most activities of daily life independently the following day and usually return to a normal daily routine within a matter of days. The majority of patients are able to appreciate the difference in their subjective sense of better well being within 7 to 10 days.

Risks of parathyroid surgery are few but include injury to the recurrent laryngeal nerve (which permits normal vocal cord movement) which is sometimes in proximity to parathyroid glands (rare – less than 1%), recurrence of parathyroid abnormalities in the future (1-2% incident of "double" or multiple adenomas), and rarely surgical scarring. Using a plastic surgical skin closure technique, most patients enjoy a surgical scar that is not visible to most. Studies have shown and now advocate that even in the asymptomatic patient, with an experienced surgeon, that the benefits of surgical intervention by far outweigh any surgical risk.