



What's new in Parathyroid Surgery
Charles Livingston MD FACS

Now days I don't get to see my referring Doctors at the hospital as often as I did in the past and for this reason I thought that I would begin a series of these articles to communicate advances in surgical treatment that my practice has to offer. The surgical management of **Primary Hyperparathyroidism** has undergone a great deal of change in the last few years as outlined in a recent article in *Surgery vol 20 September 2009*. I wanted to take this opportunity to outline my thoughts with regards to management of these interesting patients.

Most patients are found to have the disease on routine screening blood tests and more recently bone density studies. The diagnosis is established by elevated serum and urinary calcium and elevated serum Parathormone (PTH). Those with advanced disease have osteopenia and or kidney stones. Most describe subtle changes in mood and muscle symptoms. A careful history helps to exclude MEA syndrome or Familial Hyperplasia. Most patients (about 90%) will have **Sporadic Primary Hyperparathyroidism** and will have one of four parathyroid glands involved in adenomatous change.

Ten years ago conventional wisdom dictated that all four glands needed to be dissected and identified, this usually required a lengthy operation. However with the knowledge that only one gland is involved in the vast majority of patients and with the advent of Sestamibi parathyroid imaging, unilateral dissection and later directed dissection became more popular.

In my practice I first personally examine each patient in the office using a hand held ultrasound in real time. Most of the time a suspicious area is seen on this initial ultrasound. I then ask all patients to undergo a Sestmibi scan with SPECT (single photon emission CT). In most patients these two techniques will localize the adenoma. In some patients a new technique 4D CT (the fourth dimension is a timed injection) will add further information.

80% of patients have a positive Sestamibi scan and are candidates for **Minimally Invasive Radioguided Parathyroid Exploration (MIRP)** which is a focused operation directed at one radioactive gland that is identified using a hand held gamma probe. This operation is usually short (30 to 45 minutes) and is done on an outpatient basis.

20% of patients have negative sestamibi scans. These patients have a higher incidence of multigland disease as well as associated thyroid disease. Frequently I am able to identify the adenoma using the above mentioned ultrasound technique, but because of the increased likelihood of multigland disease **Intraoperative PTH** measurement is used to ensure that the condition has been corrected.

For detailed results of my treatment of patients with **Primary Hyperparathyroidism** please see my published articles; **MIRP in 152 Patients, Endocrine Practice Vol 12 Nov 2006** and **Surgeon Directed Sonography in Primary Hyperparathyroidism, Endocrine Practice Vol 14 Jan 2008**.

Please also refer to my latest study, **Radioguided Parathyroidectomy is Successful in 98.7% of Selected Patients**, *Endocrine Practice vol 20, No.4, April 2014* (abstracts can be accessed on my website as well)

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I have a special interest in Parathyroid surgery and would be happy to help you in caring for your patients with any General Surgical problem. If you have any questions please give me a call.

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