

# 63.05 The Return of the Bilateral Neck Exploration for the Treatment of Primary Hyperparathyroidism

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## Introduction:

Primary hiperparathyroidism (PHPT) is a benign disease with malignant potential. It is more common in women in the fifth decade (incidence: 1 in 75). 95% of patients are symptomatic, with the most common symptoms being neuro-psychiatric in nature. Surgery is the gold standard for the management of PHPT. We propose the use of a radio-guided parathyroidectomy with a bilateral neck exploration, biopsy of the 4 parathyroid glands in-vivo, and the evaluation of their functionality ex-vivo in order to determine which should be excised. We describe the feasibility and efficacy of this technique at our hospital in Mexico City.

## Methods:

We present a retrospective observational study from a prospectively maintained cohort of 36 consecutive patients with the diagnosis of PHPT who underwent surgical intervention at our institution by two surgeons. The diagnosis was confirmed with serum calcium, 25 OH vitamin D, and parathyroid hormone (PTH) levels. The NIH criteria were used to determine surgical candidates. For the procedure, patients underwent a 99m-Tc sestamibi scan 1 to 2 hours prior to surgery, a bilateral neck exploration through a 2 to 2.5 cm incision in which the 4 parathyroid glands were identified was performed. A biopsy in-vivo was taken from each of the glands and their ex-vivo functionality was evaluated using a gamma probe. The radioactivity of each gland was compared to the basal count taken before the start of the procedure, the hyperfunctioning glands were excised. Additionally, intraoperative PTH was measured in accordance to the Miami criteria. Patients were followed-up clinically and biochemically at 1 week, 3 weeks, 8 weeks and 1 year postoperatively.

## Results:

Symptomatic PHPT was diagnosed in 100% of the patients. The average serum calcium was  $10.13 \pm 0.6$  mg/dl, and PTH  $93.82 \pm 43.45$  ng/ml. 52.7% of our patients had a negative 99m-Tc sestamibi scan and 44.4% had a positive scan for a single adenoma. Pathology confirmed that 19.4% of patients had a single adenoma, 36.1% a double adenoma, 33.3% a triple adenoma, and 11.1% hyperplasia. Compared to the gamma probe basal counts in the neck, adenomas presented on average 71%, and hyperplastic glands 20% of the basal value.

All patients had a decrease in serum calcium and PTH postoperatively. There was a failure rate (persistent or recurrent PHPT) of 5.5%, and no patient presented with significant associated complications.

**Conclusion:**

The radio-guided bilateral neck exploration with evaluation of the functionality ex-vivo of the 4 parathyroid glands offers a similar cure rate to the traditional bilateral neck exploration and has a greater cure rate than unilateral parathyroidectomy, with a similar morbidity rate to the latter. We show that this as a safe and effective technique for the management of PHPT and is associated with reduced hospital costs. This technique offers excellent clinical and esthetic results and represents a feasible alternative to the traditional parathyroidectomy.