

Balancing the Scales: Parathyroidectomy is safe and effective in Class IV and V Morbid Obesity

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Introduction

Parathyroidectomy is the gold standard for primary hyperparathyroidism (pHPT) and successful parathyroidectomy is vital to kidney, bone, and cardiac health. The risks of surgery in general are significantly higher in patients with class IV/V obesity, although its impact in parathyroid surgery is unknown. Thus, in this study we investigated parathyroidectomy outcomes of patients with class IV (BMI >50) and V (BMI>60) morbid obesity and primary hyperparathyroidism (pHPT).

Materials and Methods

All patients with pHPT and a BMI 50kg/m² or higher who underwent parathyroidectomy between January 2012 and March 2022 were included. BMI and other demographics, perioperative lab values and complications were measured. Eucalcemia was defined as a serum calcium level within the reference range (8.5 – 10.2 mg/dl) at 6 months or greater following parathyroidectomy.

Results

67 patients were identified to have class IV or V morbid obesity with mean BMI 57 ±0.7 kg/m² with range of 50-81kg/m². The mean age was 56 ±1 years and 82% (55 out of 67) were female. Mean pre-operative iPTH was 148 ±2pg/ml and Ca was 10 ±0.2mg/dl. 61 patients (91%) had a greater than 50% decline in intraoperative iPTH whereas 6 patients (9%) continued to have inappropriately elevated intraoperative iPTH level at 2 weeks post-operatively (46 ±6 pg/ml vs 163 ±69pg/ml respectively, p<0.01). By 6 months post-operatively, 47 patients achieved eucalcemia (85%) whereas 8 patients met criteria for potential persistent HPT (15%, n=55). 6-month data is still pending for 12 patients. The overall complication rate was 7%. 5 patients had postoperative complications: 2 patients had transient nerve injury or hoarseness, 1 patient had a wound complication, and 2 patients developed permanent hypocalcemia. Importantly, there were no readmission events or incidence of permanent nerve injury or hoarseness in either group.

Discussion

In this study, patients with BMI ≥50kg/m² achieved curative parathyroidectomy with minimal complications. Large patient body habitus may require technical and ergonomic adaptations, however, parathyroidectomy can be a safe and effective procedure for patients with class IV and V morbid obesity and hyperparathyroidism.



Fig 1: Aggressive use of cross-sectional imaging to localize parathyroid glands is critical in morbidly obese patients, as ultrasound is very limited



Fig 2: Optimal patient positioning can include elevation pillows, extra padding and support, and operating from above the patient's shoulders to facilitate ergonomics