

A Retrospective Review of Imaging and Operative Modalities Performed in Patients with Primary Hyperparathyroidism at a Mid-Volume Surgical Centre in Southeast Asia

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Abstract

Introduction: A paradigm shift appears to have occurred worldwide in surgery for primary hyperparathyroidism with the advent of sensitive preoperative imaging techniques. Preoperative imaging for parathyroid adenoma localisation was not found to be useful in a study conducted in Singapore in the 1990s. This study aimed to explore what the change has been in preoperative localisation tools compared to the previous study and if the ability of these tools to correctly localise pathologic parathyroid glands has improved. **Materials and Methods:** A retrospective review of patients who had surgery for primary hyperparathyroidism at our institution during the period 2005 to 2014 was carried out. Individuals with positive, as opposed to those with negative preoperative imaging, were compared with regard to whether they underwent limited focal or bilateral neck exploration. Length of hospital stay (LOHS) was also compared between patients who underwent limited versus bilateral exploration. **Results:** Fifty-eight patients who had preoperative imaging and surgery were evaluated. True positive rates of sestamibi, ultrasound and 4-dimensional (4D) computed tomography (CT) scans were 63.8%, 72.4% and 90%, respectively. Eighty percent of patients who had positive localisation had limited exploration. LOHS was 2.8 days (1.6, 4.8) and 4.3 days (2.1, 9.0) for limited and bilateral exploration respectively, $P = 0.011$. **Conclusion:** Our study highlights the marked change in the surgical landscape for primary hyperparathyroidism in the last 2 decades in Singapore. Improved preoperative localisation has resulted in a swing from predominantly bilateral, to limited exploration in almost all cases of primary hyperparathyroidism due to solitary adenoma. LOHS was significantly shorter in patients who had limited as compared to those who had bilateral exploration.

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