Serum PTH and Ionized Calcium Levels as Predictors of Symptomatic Hypocalcemia after Parathyroidectomy

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ABSTRACT

Objective
To evaluate whether preoperative PTH levels or ionized calcium levels are associated with symptomatic hypocalcemia, in patients undergoing parathyroidectomy for primary hyperparathyroidism.

Methods
Prospective noninterventional study of a cohort of 100 patients, undergoing parathyroidectomy at a single tertiary care medical centre.

RESULTS
Eighty-eight patients (88%) remained normocalcemic after parathyroidectomy with a mean age of 62.7 years. Twelve patients (12%) developed symptomatic hypocalcemia in the post-operative period. Mean age of patients developing symptomatic hypocalcemia was 53.9 years. (Table 1) Multiple glands were removed in 4 patients (36.4%) who developed hypocalcemia and 7 patients (63.6%) who remained normocalcemic in the postoperative period. Using Fisher’s exact test for comparison, the result was statistically significant, p=0.025 (Table 2, Figure 2).

CONCLUSION
In patients undergoing surgery for primary hyperparathyroidism, the initial levels or subsequent changes in PTH or ionized calcium were not found to be associated with symptomatic hypocalcemia. The removal of more than one gland did correlate with symptomatic post operative hypocalcemia.

REFERENCES

INTRODUCTION
The incidence of hypocalcemia after parathyroidectomy is variable. It can result from transient suppression of normal parathyroid function, devascularization or resection of all parathyroid tissue at the time of the surgical procedure.

METHODS
From January 2002 to April 2008, 100 unique patients undergoing parathyroidectomy were evaluated for age, sex, preoperative and intraoperative PTH levels, preoperative and postoperative ionized calcium levels, extent of surgery, final pathology, and postoperative symptomatic hypocalcemia. Comparison of those with and without symptomatic hypocalcemia were made with Fisher’s exact test for binary characteristics and with the Wilcoxon rank test for continuous characteristics. Results were deemed statistically significant at the 5% level (p < 0.05) with no correction for multiple comparisons. Calculations were made with SAS 9.1 statistical software (SAS is the registered trademark of SAS Institute Inc. in the USA and other countries).