

“Calcemia nadir after total thyroidectomy:clinical implications”

Cesare Miani - A.Bellomo, M.G. Ruggiu

Transient hypocalcemia after total thyroidectomy is the most frequent light complication after surgery.

This study analyzes a group of 208 total thyroidectomies performed in a 14-months period between January, 2006 and February, 2007, by 9 different surgeons in the same surgical unit of the University Hospital of Udine, Italy.

Data collected regarded sex, age, diagnosis, kind of surgical procedure and serum calcium and phosphate assays at post-surgical day 1 to 7 and at 1, 2 and 3 months.

Results obtained are focalized on calcemic nadir (minimum value) and its variations related to diagnosis, severity of hypocalcemia degree, age, sex, and surgeon.

Among our group of 208 patients 80% were females and 20% males, with a mean age of 57 years \pm 13,68y.

Surgical indication for total thyroidectomy was simple goiter in 53%, papillary cancer in 26%, Grave's disease in 10%, multinodular goiter in 5%, follicular disease in 4% and follicular cancer in 2% of the cases.

At day 1 after total thyroidectomy, 15% of the patients showed normal (i.e. > 2.15 mmol/l) calcemia, 77% light (between 2.15 and 1,75 mmol/l), and 9% severe (i.e. < 1.75 mmol/l) hypocalcemia. From the last group, 2% of the original amount of 208 patients showed hypocalcemia still at the 3-months assay.

All severe- and light- to severe- ($< 1,90$ mmol) hypocalcemic patients were given cholecalciferol 400UI and calcium carbonate 1500/2000 mg per day, starting from day 3 to 4, depending from the onset of the calcium lowering.

Calcemia nadir showed a different trend between degrees of severity.

Normocalcemic group presented his mean lower level, always in the normal range, at day 6.

Light hypocalcemic group presented his mean lower level at day 5, reaching normal values at day 6.

Severe hypocalcemic group presented his mean lower level at day 4, with a good but incomplete recovery at day 5, which ends at month 3.

Serum calcium post-surgical behaviour showed also a different trend between different thyroid diseases, as hyperthyroidism diseases (i.e. Grave's and multinodular goiters) tends to have more severe postoperative hypocalcemia than euthyroidism disease (i.e. simple goiter and follicular disease), while patients operated for thyroid cancer behave in an intermediate manner.

Finally, calcemia nadir seems to be age correlated, as younger patients tends to recovery earlier, and lightly operator-dependent: different surgeons score different mean nadir results.

Statistical significance of data and clinical implications are discussed.