



THYROID SURGERY

Implications of long-term hypocalcemia with normal PTH levels following thyroid surgery

BACKGROUND

Parathyroid hormone (PTH), which regulates calcium levels, is produced by the parathyroid glands. Because of their position next to the thyroid, the parathyroid glands often are temporarily damaged after thyroid surgery, leading to low calcium levels (hypocalcemia) to varying degrees. Permanent hypoparathyroidism is rare, but is the most common serious complication of thyroid surgery. This study was performed to look at patients who had long-term low serum calcium levels despite normal PTH levels following thyroid removal surgery. The authors wanted to compare PTH levels in these patients with permanent hypocalcemia.

THE FULL ARTICLE TITLE:

Promberger et al Normal parathyroid hormone levels do not exclude permanent hypoparathyroidism after thyroidectomy. *Thyroid*. December 29, 2010.

SUMMARY OF THE STUDY

Eight patients were studied who had low serum calcium levels two months following their thyroidectomy. Their

blood levels of calcium and PTH were measured at two months and twelve months following surgery. All of these patients had normal PTH levels following surgery, but persistently low calcium and ionized calcium levels 12 months following surgery. This suggests that even normal parathyroid levels may indicate an inadequate PTH response to hypocalcemia.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This report suggests that some patients may have mild hypoparathyroidism despite in the presence of normal serum PTH after thyroid surgery due to damage to the parathyroid glands during surgery. In patients who have low calcium levels after thyroidectomy, physicians should be aware that they might have hypoparathyroidism despite normal levels of serum PTH.

— Heather Hofflich, MD

ATA THYROID BROCHURE LINKS

Thyroid Surgery: <http://thyroid.org/patients/patient-brochures/surgery.html>

ABBREVIATIONS & DEFINITIONS

Thyroidectomy — surgery to remove the entire thyroid gland. When the entire thyroid is removed it is termed a total thyroidectomy. When less is removed, such as in removal of a lobe, it is termed a partial thyroidectomy.

Hypoparathyroidism — low calcium levels due to decreased secretion of parathyroid hormone (PTH) from the parathyroid glands next to the thyroid. This can occur as a result of damage to the glands during thyroid surgery and usually resolves. This may also occur as a result of autoimmune destruction of the glands, in which case it is usually permanent.

Hypocalcemia — low calcium levels in the blood, a complication from thyroid surgery that is usually short-term and relatively easily treated with calcium pills. If left untreated, low calcium may be associated with muscle twitching or cramping and, if severe, can cause seizures and/or heart problems.

Parathyroid glands — usually four small glands located around the thyroid that secrete parathyroid hormone (PTH), which regulates the body's calcium levels.

Parathyroid hormone (PTH) — the hormone that regulates the body's calcium levels. High levels of PTH cause hypercalcemia, or too much calcium in the blood. Low levels of PTH cause hypocalcemia, or too little calcium in the blood.