AMERICAN THYROID ASSOCIATION
Optimal Thyroid Health for All

Volume 14 | Issue 2 | February 2021

Clinical Thyroidology® for the Public

THYROID CANCER

Quality of life after thyroid cancer surgery is decreased if parathyroid hormone levels are low after surgery

BACKGROUND

Surgery to remove the thyroid gland is usually needed to treat thyroid cancer. When this is done by a surgeon who specializes in this kind of surgery, thyroid surgery is safe and effective. One potential problem that can happen after thyroid surgery is damage to the parathyroid glands that results in a low parathyroid hormone level. The parathyroids are four very small glands (each about the size of a grain of rice) that live on the surface of the thyroid. Other than living on the thyroid gland surface, the parathyroid glands have nothing to do with the thyroid. They do have an important job, however: they make a single hormone that controls the body's calcium level. In fact, everyone must have at least one functioning parathyroid gland to have normal body calcium levels.

It is very important that the parathyroid glands be carefully peeled away from the thyroid and left in the neck by the surgeon during thyroid surgery. If all four of the parathyroid glands are damaged, or accidently removed, during surgery, calcium levels will be too low after surgery. This can be very serious. Some people with low calcium levels will have bad side effects, like numbness and tingling in their hands, feet and around their mouths, serious muscle cramps and even full body seizures. Such people will have to take very large amounts of calcium every day after surgery, often for the rest of their lives. This complication is usually only seen after a total thyroidectomy, as a lobectomy does not disturb the parathyroid glands on the opposite side and parathyroid hormone levels should remain normal.

The research described here studied people who had low parathyroid hormone levels after thyroid cancer surgery to better understand how these low levels effect the quality of a person's life.

FULL ARTICLE TITLE

Büttner M et al. 2020 Quality of life in patients with hypoparathyroidism after treatment for thyroid cancer. J Clin Endocrinol Metab. Epub 2020 Dec 1. PMID: 32918085.

SUMMARY OF THE STUDY

Thyroid cancer patients who underwent thyroid surgery at any one of 14 different treatment centers in Europe were evaluated for post-surgery permanent low parathyroid hormone levels. Among the 89 thyroid cancer patients who had thyroid surgery at one of these centers during the study, 17 had permanently low parathyroid hormone levels after surgery and 72 had normal post-surgery parathyroid hormone levels. After surgery, all 89 patients filled out a questionnaire designed to gather information about quality of life. The results of this questionnaire were then compared between patients having permanently low parathyroid hormone levels after surgery and patients with normal post-surgery parathyroid levels.

Not surprisingly, this study found that people having permanently low parathyroid hormone levels following thyroid cancer surgery had a worse quality of life compared to people with normal post-surgery parathyroid hormone levels. This included worse physical functioning, emotional functioning and social functioning, as well as more tingling/numbness, more restlessness, more fatigue, more difficulty breathing and more difficulty sleeping. People having low parathyroid hormone levels following thyroid surgery were not more likely to experience joint pain, muscle cramps or racing heartbeat. The study also found that more extensive surgery (neck dissection/lymph node removal during thyroid surgery) was more likely to result in permanently low parathyroid hormone levels.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

The study authors concluded that low parathyroid hormone levels following thyroid cancer surgery significantly decrease quality of life. It is very important for people who need thyroid cancer surgery to understand this possible surgical complication and take steps to minimize

THYROID CANCER, continued

the risk that this will happen to them. The best way to minimize this risk is to choose a surgeon who specializes in thyroid surgery and thus has lots of experience in recognizing and preserving the parathyroid glands during surgery. Such surgeons are also more likely to understand just how extensive a surgery should be for each individual person diagnosed with thyroid cancer and so should be able to minimize the amount of surgery needed in each case. This understanding should also decrease risk of low parathyroid hormone levels following thyroid surgery. This is important information, since a person diagnosed with thyroid cancer should know the possible side effects of thyroid surgery, and be able to discuss these side effects, when choosing a thyroid surgeon.

— Jason D. Prescott, MD PhD

ATA Thyroid Brochure Links
Thyroid Cancer (Papillary and Follicular): https://www.thyroid.org/thyroid-cancer/
Thyroid Surgery: https://www.thyroid.org/thyroid-surgery/

ABBREVIATIONS & DEFINITIONS

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.

Lobectomy: surgery to remove one lobe of the thyroid.

Total thyroidectomy: surgery to remove the entire thyroid gland.