



THYROID CANCER

WHAT IS THIS STUDY ABOUT?

A total thyroidectomy is the usual first treatment for papillary cancer, the most common type of thyroid cancer. When papillary cancer spreads outside of the thyroid, it initially spreads into the lymph nodes in the neck around the thyroid. In fact, it is very common to have papillary cancer spread into the lymph nodes in the middle of the neck at the time of surgery. There is a current debate as to how aggressive the initial surgery should be in removing lymph nodes. One approach is to remove all of the neck lymph nodes in the middle of the neck that can be found. Another approach is to remove only lymph nodes that look like they contain cancer. A common complication of thyroid surgery is low calcium levels (hypocalcemia) after surgery, which may be more common after more extensive surgery. Calcium levels are controlled by parathyroid hormone (PTH), which is secreted by the parathyroid glands. The parathyroid glands often get moved around during the thyroid surgery and may take a few days to a few weeks to recover. This study looks at the effects of more aggressive as opposed to less aggressive surgery on cancer spread and on levels of PTH and calcium after surgery.

THE FULL ARTICLE TITLE: Roh JL, Park JY, Park CI. Total thyroidectomy plus neck dissection in differentiated papillary thyroid carcinoma patients: pattern of nodal metastasis, morbidity, recurrence, and postoperative levels of serum parathyroid hormone. *Ann Surg* 2007;245 (4): 604-10.

WHAT WAS THE AIM OF THE STUDY?

The authors looked at good and bad effects of two types of surgery to remove papillary thyroid cancer: (1) remove the thyroid gland and all of the lymph nodes in the middle of the neck (more extensive surgery) or (2) remove the thyroid gland and only lymph nodes that look like they contain cancer (less extensive surgery).

WHO WAS STUDIED?

The study looked at 155 patients who had a total thyroidectomy for papillary thyroid cancer from 2001 through 2004 at the Asian Medical Center of the University of Ulsan College of Medicine in Seoul, Korea.

HOW WAS THE STUDY DONE?

Patient records were examined for the type of surgery, the extent of lymph node removal, the size of cancer and spread into the lymph nodes, the levels of calcium and PTH after surgery and other complications of the surgery.

WHAT WERE THE RESULTS OF THE STUDY?

In this study, 130 (84%) were women, and 25 (16%) were men. The average age was 47 years. 82 patients had surgery to remove the thyroid gland and all of the lymph nodes in the middle of the neck (more extensive surgery). Spread of the cancer to the lymph nodes was found in 62% of these patients. PTH levels were lower and short-term hypocalcemia occurred in 32% of this group. Permanent hypocalcemia occurred in 5% of this group. 73 people had surgery to remove the thyroid gland and only lymph nodes that looked like they contained cancer (less extensive surgery). Spread of the cancer to lymph nodes was found in 26% of these patients. Only 10% of this group had short-term hypocalcemia and none had permanent hypocalcemia. So, while more lymph nodes containing cancer were removed in the group with more extensive surgery, more complications with hypocalcemia was seen as well. Over 4 years later, only 1 of the patients with the more extensive surgery still had evidence of the cancer as compared to 3 patients in the group with the less extensive surgery.

HOW DOES THIS COMPARE WITH OTHER STUDIES?

Other studies have shown that after surgery with extensive lymph node removal, permanent hypocalcemia is rare but occurs more frequently than after less extensive surgery. On the other hand, studies also suggest that the more extensive surgery may decrease the risk of future cancer return and may increase cancer survival. A very recent study suggested that more extensive surgery was helpful in guiding treatment after surgery and caused permanent hypocalcemia in ~1% of patients.

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THYROID CANCER, continued

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study brings out the problem in choosing the best surgery for Papillary thyroid cancer. Most patients do well and do not die from their thyroid cancer. Because of this, would it be worth having more extensive surgery that leads to more short-term and permanent hypocalcemia but also likely decreases the small number of patients who cannot be cured and who may eventually die of their cancer? While not answering this question, this study provides more information for surgeons, thyroid experts and patients to use when deciding on the best surgery for this relatively low-risk cancer.

— Ruth M. Belin, MD

ATA THYROID BROCHURE LINKS

Thyroid cancer: http://thyroid.org/patients/patient_brochures/cancer_of_thyroid.html

Thyroid Surgery: http://thyroid.org/patients/patient_brochures/surgery.html

ABBREVIATIONS & DEFINITIONS

Papillary thyroid cancer — the most common type of thyroid cancer

Total thyroidectomy — Surgery to remove the entire thyroid gland

Lymph node — bean-shaped organ that plays a role in removing what the body considers harmful, such as infections and cancer cells

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.



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