



## THYROID CANCER

### Prophylactic central lymph node dissection in patients with papillary thyroid cancer reduces the need for reoperation for cancer recurrence

#### BACKGROUND

Surgery is the first treatment after a diagnosis of thyroid cancer. The surgery generally includes removal of the entire thyroid gland as well as any abnormal appearing lymph nodes in the central neck behind the thyroid. There is debate among surgeons whether also removing normal appearing lymph nodes in the central neck (prophylactic lymph node dissection) is better than removing only the abnormal appearing lymph nodes. Previous studies have shown that prophylactic lymph node dissection does pick up small amounts of cancer cells that have spread to otherwise normal appearing lymph nodes. However, there are more frequent complications of this surgery and it is unclear that it provides any real clinical benefit to the patient. This study examines the risks and benefits of prophylactic lymph node dissection in patients with papillary thyroid cancer.

#### THE FULL ARTICLE TITLES:

Popadich A et al. A multicenter cohort study of total thyroidectomy and routine central lymph node dissection for cN0 papillary thyroid cancer. *Surgery* 2011;150:1048-57.

#### SUMMARY OF THE STUDY

This article looks at 606 patients from 3 centers with papillary thyroid cancer who underwent a total thyroidectomy between 1995 and 2009. Patients were divided into two groups: 347 had a total thyroidectomy only (group A) and 259 had a total thyroidectomy with removal of the central compartment lymph nodes (group B). The mean number of lymph nodes removed was 7 in group B and 49% of those who had lymph nodes removed had cancer within the lymph nodes. Temporary hypocalcemia (low calcium) occurred in 9.7% of group B and 4.1% of group

A. There were no other differences in the rates of complications in the two groups. Ninety-eight percent of the patients had radioactive iodine therapy. In group A, 8.1% required reoperation for recurrence of the cancer while only 5% of group B required reoperation. Having lymph nodes removed at the time of the initial surgery significantly reduced the risk of needing another operation. It was calculated that 20 routine initial lymph node removals were required to prevent 1 patient from needing an operation for recurrence of thyroid cancer.

#### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

In well-trained and experienced surgical hands, there is a potential benefit to patients to having normal appearing lymph nodes removed at the time of thyroid cancer surgery. The benefit is that it may reduce the chance of needing a second operation in the future if the cancer returns. The tradeoff is an increased risk of having transient hypocalcemia after the surgery. Larger studies probably need to be done to look at the potential for increased complications by all surgeons (not just very experienced surgeons who publish their results) versus the potential benefit of one out of twenty patients avoiding a second operation and whether this results in a better chance at long term cure in these patients.

— Ronald Koppersmith, MD

#### ATA THYROID BROCHURE LINKS

Thyroid cancer: [http://thyroid.org/patients/patient\\_brochures/cancer\\_of\\_thyroid.html](http://thyroid.org/patients/patient_brochures/cancer_of_thyroid.html)

Thyroid Surgery: [http://thyroid.org/patients/patient\\_brochures/surgery.html](http://thyroid.org/patients/patient_brochures/surgery.html)

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## THYROID CANCER, continued

### ABBREVIATIONS & DEFINITIONS

**Papillary thyroid cancer:** the most common type of thyroid cancer.

**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.

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

**Central neck compartment:** the central portion of the neck between the hyoid bone above and the sternum and collar bones below and laterally limited by the carotid arteries.

**Prophylactic central neck dissection:** careful removal of all lymphoid tissue in the central compartment of the

neck, even if no obvious cancer is apparent in these lymph nodes.

**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.

**Radioactive iodine (RAI):** this plays a valuable role in diagnosing and treating thyroid problems since it is taken up only by the thyroid gland. I-131 is the destructive form used to destroy thyroid tissue in the treatment of thyroid cancer and with an overactive thyroid. I-123 is the non-destructive form that does not damage the thyroid and is used in scans to take pictures of the thyroid (Thyroid Scan) or to take pictures of the whole body to look for thyroid cancer (Whole Body Scan)