

Removal of lobe instead of total thyroid may benefit papillary thyroid cancer patients

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Most Americans with thyroid cancer have an operation to remove the thyroid gland, but those with a smaller, less-threatening form of thyroid cancer may be missing out on a less extensive, less costly, and safer operation that's actually more effective in treating their cancer, according to study results presented at the 2016 Clinical Congress of the American College of Surgeons.

Investigators from Tulane University School of Medicine, New Orleans, and Johns Hopkins School of Medicine, Baltimore, determined that for patients who have had a biopsy suspicious for [papillary thyroid cancer](#), a total thyroidectomy to remove the thyroid gland, located at the base of the neck, is more expensive and results in a lower quality of life after the operation than a less extensive lobectomy that removes only the cancerous thyroid lobe.

"Our findings are showing that from the economic standpoint, performing lobectomy instead of total thyroidectomy in patients who have had a biopsy suspicious for papillary thyroid carcinoma is associated with a lower cost and better effectiveness," said lead investigator Zaid Al-Qurayshi, MD, MPH, Department of Otolaryngology-Head & Neck Surgery, University of Iowa Hospitals and Clinics in Iowa City, and formerly of Tulane University.

"It is important to note, this finding does not mean that lobectomy is only a cost-effective alternative; we call a strategy 'cost-effective' compared with the alternative if it costs more, or the same, but is

associated with better effectiveness." In this study, lobectomy costs less but was also associated with better outcomes, he reported.

"Lobectomy is a shorter operation typically performed on an outpatient basis and with less risk factors than total thyroidectomy," said study coauthor Ralph P. Tufano, MD, MBA, FACS, who is the Charles W. Cummings MD Professor and professor of otolaryngology-head and neck surgery at Johns Hopkins. "American Thyroid Association (ATA) Clinical Guidelines now support lobectomy alone for differentiated thyroid cancers, like papillary thyroid carcinoma, of 4 cm or less in carefully selected situations." In these cases, a lobectomy can both help diagnose cancer type and treat the cancer itself, Dr. Tufano explained.

About 62,000 new cases of thyroid cancer are diagnosed in the United States each year, resulting in about 2,000 deaths, and papillary thyroid cancer accounts for about four of five cases, according to the American Cancer Society.* Papillary thyroid cancers are typically small, tend to grow slowly and carry little risk of spreading beyond the [thyroid gland](#), and have much higher cure and survival rates than medullary thyroid cancer. Although ATA guidelines recommend lobectomy for Stage I and II papillary thyroid cancer, complete thyroidectomy remains the most common procedure for all types of thyroid cancers.

The researchers used a Markov model to determine the effectiveness of a treatment in terms of a measure called Quality-Adjusted Life Year (QALY). The model helps to calculate the cost and clinical effectiveness of lobectomy versus total thyroidectomy when the biopsy is suspicious for papillary thyroid cancer. "QALY is a standardized value from 0 to 1 that represents the burden of certain disease," Dr. Al-Quarayshi said. "It is based on two elements: quality of life and time. A value of 0 represents death, and a value of 1 represents a year of perfect health without any diseases." The study found lobectomy had a QALY 0.25 greater than total thyroidectomy in a model that assumed 20 years of

patient follow-up.

The cost analysis found that total thyroidectomy was \$2,678 more than lobectomy, even when taking into account that a person with a biopsy suspicious for papillary [thyroid cancer](#) has a 12 percent chance of having more advanced Stage III or IV cancer after lobectomy and would need a total thyroidectomy later. "Cost-analysis studies are designed to answer questions at the administrative and policy-making levels," Dr. Al-Qurayshi said. "However, they do not assess which strategy is clinically better for patients at the individual level."

These findings may be more meaningful for patients who have benign or papillary thyroid carcinoma Stages I or II confirmed by pathology studies after surgery, Dr. Al-Qurayshi explained. "This population represents the overwhelming majority of patients with suspicious-for papillary thyroid carcinoma on biopsy," he said. "Avoiding total thyroidectomy in those patients not only will have better clinical outcomes as shown previously, but will also have economic advantage at the population level as shown in the current analysis."

The next step for the investigators is to re-evaluate their findings. "If these outcomes are consistently proven to hold true, it would be worthwhile to assess potential cost savings that are attainable given the number of patients who have suspicious papillary thyroid carcinoma annually in the United States," Dr. Al-Qurayshi said. "On the other hand, if the American Thyroid Association Clinical Guidelines become widely adopted, further study is warranted to re-evaluate the clinical outcomes on long-term follow-up in patients who underwent lobectomy instead of total thyroidectomy."

More information: * Thyroid Cancer Overview. American Cancer Society. Revised February 12, 2016. Available at: www.cancer.org/acs/groups/cid/.../acspsc-030369-pdf.pdf. Accessed

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