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THYROID CANCER

# Total Thyroidectomy Versus Thyroid Lobectomy in Patients with T1/T2 Tall-Cell Papillary Thyroid Carcinoma

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**Review of:** Woods RSR, Fitzgerald CWR, Valero C, Lopez J, Morris LGT, Cohen MA, Wong RJ, Patel SG, Ghossein RA, Tuttle RM, Shaha AR, Shah JP, Ganly I 2023 Surgical management of T1/T2 node-negative papillary thyroid cancer with tall cell histology: Is lobectomy enough? Surgery **173:**246–251. PMID: 36257862.



## SUMMARY

### Background

Papillary thyroid carcinoma (PTC) with tall-cell histology has been reported to be more aggressive than classic PTC and has worse outcomes (1,2). PTC with tall-cell histology is considered at intermediate risk for recurrence per American Thyroid Association (ATA) guidelines (3). In many institutions, thyroidectomy and radioactive iodine ablation are recommended in patients diagnosed with a tall-cell variant of PTC after thyroid lobectomy. However, tall-cell variant histology alone as an independent predictor of worse outcomes is controversial. This study (4) aims to compare the outcomes of patients with AJCC T1/T2 tall-cell PTC who had thyroid lobectomy and patients with classic PTC.

### Methods

This is a retrospective study of all patients with classic PTC and tall-cell variant who underwent surgery at Memorial Sloan Kettering Cancer Center between 1985 and 2015. Tumors with ≥30% tall cells were classified as tall-cell variant. Patients with T1 or T2 tumors, with no clinical evidence of lymph node metastases, who underwent thyroid lobectomy or isthmectomy were included in the analysis. Patients were followed with annual ultrasonography and serum thyroglobulin measurements for a minimum of 5 years. Patient's age, sex, 8th edition TNM stage, microscopic extrathyroidal extension (ETE), vascular invasion, complete or partial encapsulation, and multifocality were recorded. Recurrence-free probability (RFP), disease-specific survival (DSS), and overall survival (OS) were calculated from the date of surgery.

### Results

Of 6259 patients identified from the database, 3907 had T1/T2, N0/Nx, and no metastases. A total of 996 (25%) patients had thyroid lobectomy, composed of 429 (43%) with classic PTC, 70 (7%) tall-cell variant, 367(37%) follicular variant PTC, and 130 (13%) others. Of the 996 total patients, 499 patients with either classic PTC or tall-cell variant were included in the analysis. The final cohort was composed of 223 patients who had PN0 (190 classic PTC, 33 tall-cell variant) disease and 276 with PNX (239 classic PTC, 37 tall-cell variant) disease.

There were significantly more cases of tall-cell variant with microscopic ETE (22 of 70) than classic

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PTC (29 of 428) (P<0.01) and significantly more cases of tall-cell variant with no (37 of 67) or partial (23 of 67) encapsulation than classic PTC with no (138 of 325) or partial (74 of 325) encapsulation (P<0.01). Tumor stage, age at presentation, vascular invasion, and multifocality were not significantly different between the two groups.

The median follow-up for the tall-cell variant group was 44 months, and the median follow-up for classic PTC was 67 months. The 5- and 10-year OS in the tall-cell variant group was 97.7% and 92%, and there were no recurrences. In the classic PTC group, 5-year OS, the incidence of recurrence in 5 years, 10-year OS, and recurrence in 10 years were 95%, 0.7%, 88.5%, and 1.4%, respectively. There was no significant difference in 10-year OS (P = 0.56) and locoregional RFP between the groups (P = 0.52). DSS was 100% in both groups.

### Conclusions

Patients with T1, node-negative PTC with tall-cell variant histology can be managed with thyroid lobectomy. Completion of thyroidectomy and radioactive iodine treatment may not be indicated in this group of patients since their risk of recurrence is low.

## COMMENTARY

Tall-cell variant PTC is generally believed to have more aggressive behavior and be associated with worse outcomes than classic PTC. However, it is unclear whether this applies to all tall-cell variant PTCs independent of the stage of the disease.

The current study (4) showed that tall-cell variant tumors <2 cm with no evidence of node metastases or other aggressive features do not require more aggressive treatment, including completion thyroidectomy and radioactive iodine ablation. A recent study by Holoubek et al. (5) supports the finding of this study. Holoubek et al. included 155,940 patients with classic PTC, 4011 with tall-cell variant, and 507 with a diffuse sclerosing variant of PTC; no overall survival benefit was provided by total thyroidectomy and radioactive iodine ablation in patients with aggressive tumor variants that were <2 cm (5).

One of the main limitations of this study was the small number of tall-cell variant PTCs, and there were only five patients with T2-stage disease. It is also possible that the follow-up length was not long enough to detect recurrence and death.

Completion thyroidectomy and radioactive iodine ablation could be associated with potential complications. Selective cases of ATA intermediate risk with intrathyroidal thyroid cancer <4 cm have been shown to have outcomes after thyroid lobectomy that are similar to those of patients treated with total thyroidectomy (6). Further studies are necessary to clarify selective cases of ATA intermediate-risk differentiated thyroid cancers that can be managed with thyroid lobectomy alone.

In my practice, observing patients with tall-cell variant PTCs <2 cm in the absence of other worrisome pathologic features after a lobectomy is not uncommon. I follow these patients with neck ultrasonography every 6 to 12 months. I routinely do not recommend completion thyroidectomy and radioactive iodine ablation in these groups of patients, since, in my experience, selective cases of ATA intermediate-risk differentiated thyroid cancers have a low risk of recurrence and can be safely managed with thyroid lobectomy. However, I discuss the controversy and limitation of data with the patients and refer them for completion thyroidectomy and low-dose radio-

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active iodine ablation if this is their preference. It is important that clinicians consider factors such as patient preferences, understanding of their disease, patient financial status, availability of high-quality ultrasonography, and access to highly experienced surgeons while deciding between observation after lobectomy and completion thyroidectomy followed by possible radioactive iodine ablation.

**Disclosures:** The author has no relevant conflicts of interest to declare.

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