Thyroidectomy Outcomes in Hashimoto's Thyroiditis: Evaluating Symptom Persistence and Hormonal Management

Carson Gates, BS[1]; Shreya Gaddipati, BS[1]; Dana Goldenberg, MD[2]; Neerav Goyal, MD[2]; Patrick Tassone MD[1]

1. University of Missouri – Department of Otolaryngology – Head & Neck Surgery
2. Penn State College of Medicine – Department of Otolaryngology – Head & Neck Surgery

AAO-HNSF 2025 Annual Meeting & OTO EXPO™ INDIANAPOLIS, INDIANA • OCTOBER 11–14

Introduction

- Hashimoto's thyroiditis is the leading cause of hypothyroidism.
- Levothyroxine (LT4) therapy restores biochemical euthyroidism, but many patients remain symptomatic.
- Symptoms may reflect both hormone deficiency and autoimmune activity (1).
- Thyroidectomy is occasionally considered in refractory cases, yet outcomes remain poorly defined.

- **Objective:** Evaluate residual symptom burden in euthyroid patients following thyroidectomy for HT.

Characteristic	Value
Age (years)	59 (30–85)
Sex	Female: 23 (92%); Male: 2 (8%)
Race	White: 23 (92%); Other: 2 (8%)
BMI (kg/m^2)	33.6 ± 6.4
Symptomatic pre-op	19 (76%)
Symptom count (pre-op)	2 (0–7)
Pre-op TSH (mIU/L)	5.6 ± 12.3
Pre-op anti-TPO antibody (IU/mL)	552 (156–1000)
Pathology	Malignant: 9 (36%); Benign: 16 (64%)
Pre-op LT4 dose (mcg)	47 ± 49
Pre-op LT4 dose (mcg/kg)	0.5 ± 0.5

Table 1. Preoperative characteristics of the patient cohort.

Methods

- Retrospective cohort study of 25 patients with Hashimoto's thyroiditis who underwent thyroidectomy.
- Collected pre- and postoperative hypothyroid symptoms (count and presence), weight, LT4 dose, thyroid-stimulating hormone (TSH), and anti-thyroperoxidase (anti-TPO) antibody levels.
- Patients stratified into high and low anti-TPO groups using the cohort median antibody level (552.3 IU/mL).
- **Primary Outcomes:**
  - Symptom reduction
  - LT4 dose change
  - Weight change
  - TSH change
- **Statistical analysis:**
  - Symptom improvement analyzed with Fisher's exact test.
  - Symptom count reduction, LT4 dose change, weight change, and TSH change were compared using Mann–Whitney U test.
  - Statistical significance defined as $p < 0.05$.

Results

- Of the 25 patients included, 19 (76%) were symptomatic before thyroidectomy.
- Symptom improvement was observed in 61.5% of patients in the high anti-TPO group compared to 33.3% in the low anti-TPO group, though not statistically significant (p = 0.43).
- The average reduction in symptom count was similar between groups, –1.15 in the high anti-TPO group vs –0.75 in the low anti-TPO group (p = 0.33).
- Most patients (84%) required an increased LT4 dose postoperatively, with a mean increase of +81 mcg in the high anti-TPO group and +89 mcg in the low anti-TPO group (p = 0.43).
- Mean weight change differed slightly, with the high anti-TPO group losing 3.5 kg compared to a gain of 0.4 kg in the low anti-TPO group; however, this difference was not significant (p = 0.31).
- Mean TSH change also did not differ significantly between groups (0.0 vs +2.5 mIU/L, p = 0.22).

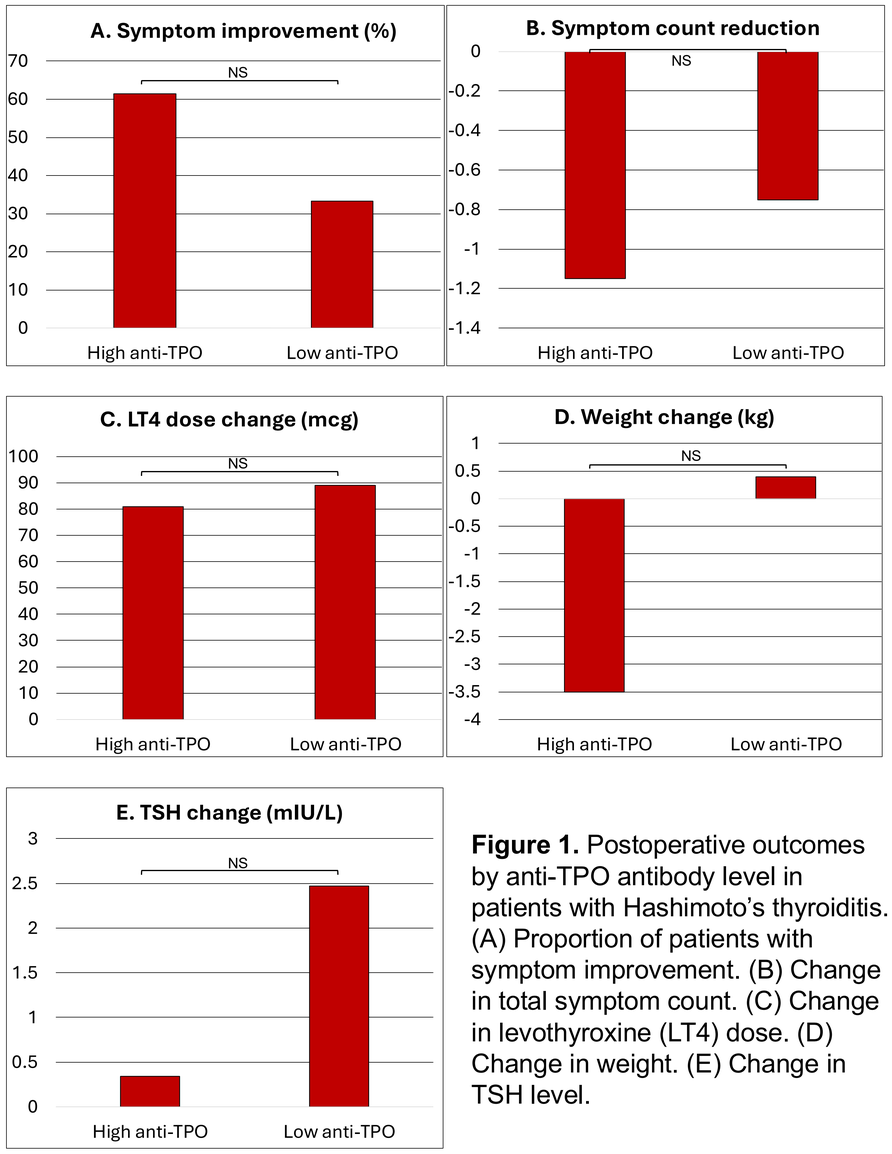

Figure 1. Postoperative outcomes by anti-TPO antibody level in patients with Hashimoto's thyroiditis. (A) Proportion of patients with symptom improvement. (B) Change in total symptom count. (C) Change in levothyroxine (LT4) dose. (D) Change in weight. (E) Change in TSH level.

Symptom Category	Pre-op n (%)	Post-op n (%)
Fatigue / Low energy	3 (12.0%)	6 (24.0%)
Temperature intolerance	4 (16.0%)	1 (4.0%)
Voice changes / Hoarseness	4 (16.0%)	2 (8.0%)
Dysphagia / Compressive	12 (48.0%)	3 (12.0%)
Neurocognitive / Mood	1 (4.0%)	0 (0.0%)
GI symptoms	1 (4.0%)	0 (0.0%)
Other	2 (8.0%)	3 (12.0%)

Table 2. Patient-Reported Symptoms Before and After Thyroidectomy (n = 25)

Discussion

Hashimoto's thyroiditis is the most common cause of hypothyroidism, yet a subset of patients remain symptomatic despite biochemical euthyroidism on levothyroxine therapy. While thyroidectomy has been considered in refractory cases, there is limited data on postoperative outcomes, particularly regarding the role of autoimmune activity such as anti-TPO antibody levels (2).

In this retrospective cohort, we evaluated 25 patients with Hashimoto's thyroiditis who underwent thyroidectomy and found that nearly half experienced symptom improvement postoperatively. Importantly, preoperative anti-TPO antibody burden did not correlate with symptom reduction, levothyroxine dose changes, or weight outcomes. These findings suggest that while surgery may provide symptomatic relief for select patients, antibody levels are not a reliable predictor of benefit. By directly comparing outcomes between high and low anti-TPO groups, this study contributes to a small but growing body of literature exploring thyroidectomy as a therapeutic option in biochemically euthyroid yet clinically symptomatic patients (3).

Our analysis is limited by the small sample size, retrospective design, and reliance on self-reported symptoms, which may introduce recall or reporting bias. Additionally, heterogeneity in pathology and clinical presentation limits the generalizability of our findings.

Future studies with larger, prospective cohorts are needed to better define which patients are most likely to benefit from thyroidectomy, and to explore whether alternative biomarkers beyond anti-TPO levels may guide surgical decision-making.

Conclusion

- Thyroidectomy alleviated symptoms in a subset of patients with Hashimoto's thyroiditis who had persistent hypothyroid complaints despite biochemical euthyroidism.
- Preoperative anti-TPO antibody level did not significantly predict postoperative improvement, levothyroxine adjustments, or weight change.

Contact:
Patrick Tassone, MD, *tassonep@health.missouri.edu*
Assistant Professor of Clinical Otolaryngology
Assistant Residency Program Director
University of Missouri, Columbia, MO

References:

1. Groenewegen, K. L., Mooij, C. F., & van Trotsenburg, A. S. P. (2021). Persisting symptoms in patients with Hashimoto's disease despite normal thyroid hormone levels: Does thyroid autoimmunity play a role? A systematic review. Journal of translational autoimmunity, 4, 100101. https://doi.org/10.1016/j.jtauto.2021.100101
2. Zhang, H., Tong, W., Zeng, W., Luo, H., Zhang, L., Feng, J., Xiao, Y., & Wang, G. (2025). Persistent symptoms in euthyroid Hashimoto's thyroiditis: current hypotheses and emerging management strategies. Frontiers in endocrinology, 16, 1627787. https://doi.org/10.3389/fendo.2025.1627787
3. Hoff, G., Bernklev, T., Johnsen, L., Reitsma, L., Sina, D., Lauzike, A., Gibbs, C., Hoel Lende, T., Narvestad, J. K., Kildahl, R., Omdal, R., Kvaløy, J. T., & Søiland, H. (2024). Thyroidectomy for Euthyroid Patients with Hashimoto Disease and Persistent Symptoms: An Observational, Postrandomization Study. Journal of thyroid research, 2024, 5518720. https://doi.org/10.1155/2024/5518720