

# FROM ROUTINE TO RESCUE: THYROIDECTOMY FOR LIFE-THREATENING THYROTOXICOSIS

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## Introduction

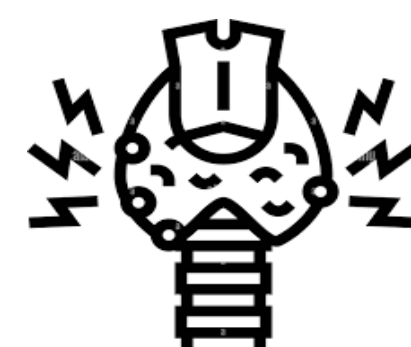
Thyrotoxicosis: A clinical syndrome caused by excessive thyroid hormone.

- It can either arise from overactive thyroid such as Graves' disease, or destruction of thyroid glands due to thyroiditis.
- Can be medically treated using antithyroid drug and radioactive iodine, with a failure rate of 52% and 15% respectively.
- For patients with contraindications to medical management, seeking definitive treatment, or having clear surgical benefits like obstructive goiter or concomitant malignancy, surgery is recommended.



## Methods

- Retrospective analysis of adult patients who underwent thyroidectomy with a discharge diagnosis of thyrotoxicosis.
- We defined urgent thyroidectomy cases as patients who were admitted non-electively and whose condition necessitated an urgent thyroidectomy before discharge.



## Results

Table 1. Baseline characteristics of patients undergoing urgent thyroidectomy

Clinical variables	n (%)
Age, years	41 (14)
Female	18 (60.0%)
Race	
Black	18 (60.0%)
White	12 (40.0%)
BMI, kg/m <sup>2</sup>	26.6 (5.3)
Chief complaints	
Shortness of breath	15 (50.0%)
Palpitation	9 (30.0%)
Chest pain	2 (6.7%)
Fever	1 (3.3%)
Hypertension	9 (30.0%)
Tachycardia	18 (60.0%)
Leukocytosis	14 (46.7%)
Anemia	20 (66.7%)
Elevated transaminase	8 (26.7%)
TSH level	
Undetectable	23 (76.7%)
Low	7 (23.3%)
Free T4 at admission, ng/dL	4.9 [3.5, 5.6]
Free T3 at admission, pg/mL	16.9 [7.1, 20.0]

Table 2. Presenting problems of patients undergoing urgent thyroidectomy

Clinical variables	n (%)
Previous diagnosis of thyrotoxicosis	22 (73.3%)
New diagnosis of thyrotoxicosis	8 (26.7%)
Taking ATD before admission	7 (23.3%)
Duration of ATD use before admission, days	33 [14, 168]
Thyroid storm	8 (26.7%)
BWPS score	50 (4)
Atrial fibrillation	16 (53.3%)
Heart rate at admission, bpm	114 (26)
Heart failure	12 (40.0%)
BNP, pg/mL	620 [541, 1630]
Liver failure	5 (16.7%)
MELD score	23 [19, 34]
Kidney failure	1 (3.3%)
Cardiac arrest	2 (6.7%)

Table 3. Outcome and follow ups of patients undergoing urgent thyroidectomy

Clinical variables	n (%)
ASA score	
II	2 (6.7%)
III	17 (56.7%)
IV	11 (36.7%)
Operative time, minutes	140 [103, 184]
Blood loss, mL	33 [20, 119]
Volume of thyroid, mL	62.5 [47.8, 101]
Reoperation	2 (6.7%)
Hematoma	2 (6.7%)
Temporary hypoparathyroidism	4 (13.3%)
Permanent hypoparathyroidism	0 (0)
Temporary hoarseness	2 (6.7%)
Permanent hoarseness	0 (0)

Clinical variables	n (%)
Hospital stay after surgery, days	6 [3, 10]
ED visit within 30 days of discharge	6 (20.0%)
Readmission within 30 days of discharge	4 (13.3%)
Death within 30 days of discharge	1 (3.3%)
Improvement in atrial fibrillation	8/16 (50.0%)
Change in LVEF	
Improved	3/6 (50.0%)
Same	3/6 (50.0%)

## Conclusion

Our study indicates that when patients with severe thyrotoxicosis do not respond to antithyroid medications and face deteriorating life-threatening comorbidities, urgent thyroidectomy provides a swift and safe transition to a euthyroid state and clinical stability, thereby improving patient outcomes.