Thyroidectomy: When and How

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Early Timing of Thyroidectomy for Hyperthyroidism in Graves' Disease Improves Biochemical Recovery

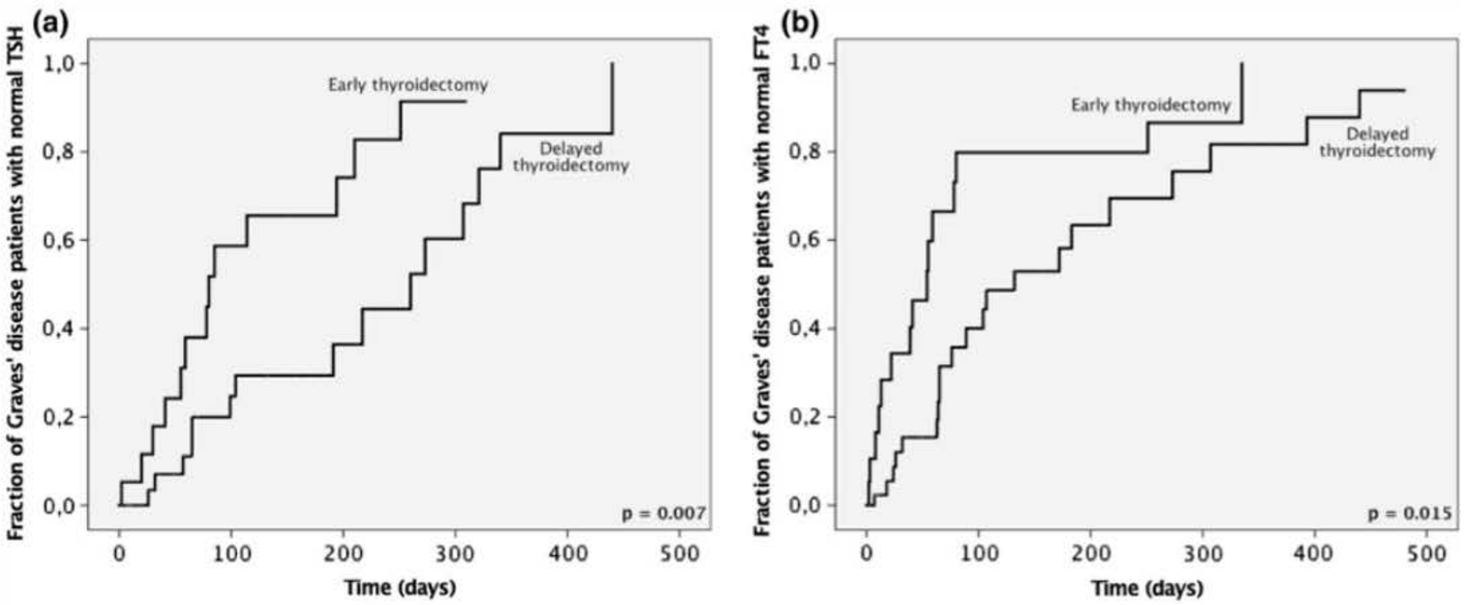

Fig. 1 Early thyroidectomy improves recovery of TSH and FT4 levels in patients with Graves' disease, compared to patients with Graves' disease undergoing delayed thyroidectomy ($p = 0.007$ and $p = 0.015$, respectively)

	Early thyroidectomy ($n = 45$)	Delayed thyroidectomy ($n = 54$)
Transient hypocalcemia ($p = 0.221$)	7 (15.2%)	14 (26.4%)
Hematoma ($p = 1.000$)	3 (6.5%)	4 (7.5%)
Transient recurrent laryngeal nerve palsy ($p = 0.497$)	0	2 (3.8%)

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Surgical Treatment of Hyperthyroidism Can be Performed Safely Before a Euthyroid State is Achieved

	Controlled (N = 134)	*Uncontrolled (N = 141)*	p
Operative time (hours)			
<1	25.0 (19.8%)	9.0 (7.3%)	0.014
1–2	57.0 (45.2%)	54.0 (43.9%)	
2–3	37.0 (29.4%)	47.0 (38.2%)	
>3	7.0 (5.6%)	13.0 (10.6%)	
Estimated blood loss (mL)			
Median (Q1, Q3)	15.0 (5.0, 30.0)	20.0 (10.0, 50.0)	0.002
Complications			
Hypocalcemia			
Temporary	6.0 (4.7%)	18.0 (13.4%)	0.013
Permanent	0.0 (0%)	4.0 (3.0%)	0.137
Hematoma (evacuation)	1.0 (0.7%)	5.0 (3.5%)	0.112
Hoarseness			
Temporary	10.0 (6.6%)	8.0 (5.0%)	0.549
Permanent	1.0 (0.8%)	1.0 (0.7%)	0.967

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Ideally, will have normal thyroid tests before surgery, but at high-volume center safe to proceed regardless if not clinically thyrotoxic.

Practical Considerations

~4-6 cm visible scar hidden in crease

Typically 1 night in hospital

Lifelong need for T4
Typically started on POD#1

No activity/swimming x 2 strenuous weeks

Most return to work
~1 week

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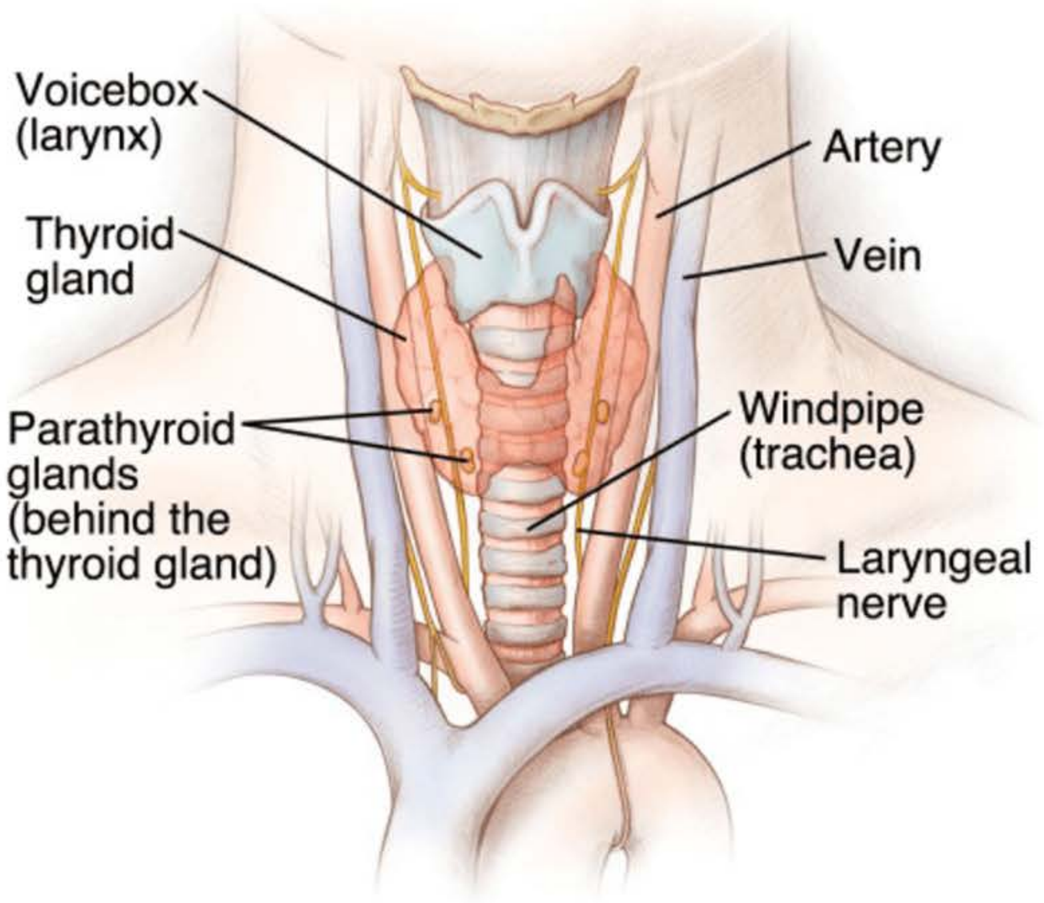
Risk of Total Thyroidectomy



Bleeding (e.g. hematoma)
May require return to OR

Infection
May require antibiotics or return to OR to drain

Damage to laryngeal nerves
Temporary or permanent changes to the voice

Damage to the parathyroid glands
Temporary of permanent low calcium requiring supplements

Risk of Total Thyroidectomy in Graves' Disease

Risk	Graves' Disease	All Patients
Bleeding	2.8%	1.9%
Infection	0.1%	0.3%
Vocal Cord Issues	0.9%	1.6%
Calcium Issues	12.4%	8.8%

Bleeding

Iodine prior to surgery to decrease gland vascularity, overnight stay for observation

Calcium

Temporary low calcium in majority of Graves' patient, preoperative load with calcium and vitamin D

Importance of High-Volume Surgeon

Cannot be overstated - if possible, seek out surgeon with practice dedicated solely to endocrine surgery

During consultation ask your surgeon how many thyroidectomies they have performed for Graves' disease, how many thyroidectomies/year

TABLE 4. SELECTED OUTCOMES FOLLOWING TOTAL THYROIDECTOMY IN PATIENTS WITH GRAVES' DISEASE BASED ON HOSPITAL TOTAL THYROIDECTOMY VOLUME

	Hospital total thyroidectomy volume		
Variable	*Low volume (bottom 80th percentile; ≤47 per year; n=8757; 78.2%)*	*High volume (top 20th percentile; >47 per year; n=2447; 21.8%)*	p
Tracheostomy	1.3%	0.2%	<0.01
Hematoma	3.1%	1.4%	<0.01
Requiring surgical intervention	0.7%	0.4%	0.07
Hypocalcemia	13.9%	7.0%	<0.01
Vocal-cord paralysis	0.9%	0.8%	0.53
Wound complications	0.2%	0.0%	0.04
Venous thromboembolism	0.1%	0.0%	0.22
Major medical complication	3.4%	1.2%	<0.01

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Thank you! We are happy to see you in Ann Arbor!