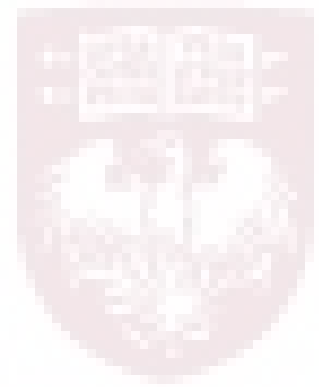


# 10-year-old female with Graves disease

Siri Atma W. Greeley, MD, PhD

Endorama

August 23, 2012



# CC:

- Consulted by Endocrine Surgery team to assist with preoperative management of 10yo girl with Graves disease and multiple medication intolerances

# HPI

- Presented to PMD June 2012 with lump to the neck noticed by mother
- C/o hyperactivity, weight loss despite increased appetite, subjective tachycardia, SOB
- Referred to outside endocrinologist for evaluation and management

## PAST MEDICAL HISTORY

- Seasonal allergies
- Mild intermittent / exercise-induced asthma

## MEDICATIONS

- Albuterol prn
- Cimetidine prn

## FAMILY HISTORY

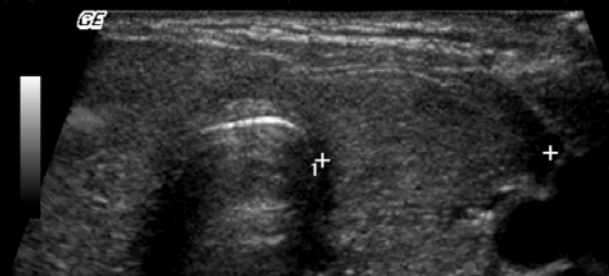
- Mother- hypothyroidism on LT4
- PGM- hyperthyroidism s/p thyroidectomy

## SOCIAL HISTORY

- LAHW parents, sibling

# OSH Laboratory evaluation

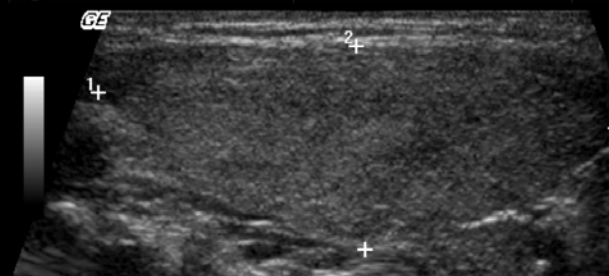
- 6/28/12:
  - TSH: 0.056 mcU/mL
  - FT4: 2.90 (<1.8)
  - T3: 2.59 (<2.13)
  - TPO Ab: 452
  - TG Ab: <20



B  
 Frq 10.0 MHz  
 Gn 28  
 E/A 3/3  
 Map D/O  
 D 4.0 cm  
 DR 72  
 FR 9 Hz  
 AO 100 %

1 Lt Thyroid W 1.86 cm

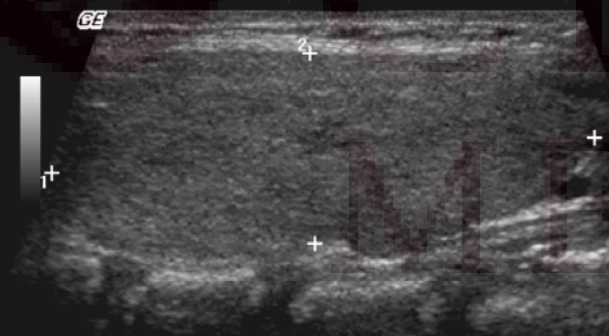
LT THYROID TRANS



B  
 Frq 10.0 MHz  
 Gn 28  
 E/A 3/3  
 Map D/O  
 D 4.0 cm  
 DR 72  
 FR 9 Hz  
 AO 100 %

1 Rt Thyroid L 4.20 cm  
 2 Rt Thyroid H 1.65 cm  
 Rt Thyroid Vol 6.83 ml

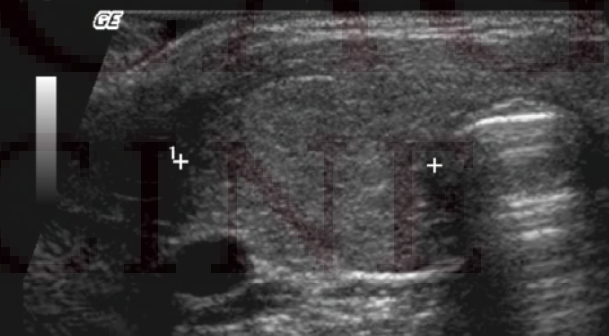
RT THYROID LONG



B  
 Frq 10.0 MHz  
 Gn 28  
 E/A 3/3  
 Map D/O  
 D 4.0 cm  
 DR 72  
 FR 9 Hz  
 AO 100 %

1 Lt Thyroid L 4.43 cm  
 2 Lt Thyroid H 1.55 cm  
 Lt Thyroid Vol 6.11 ml

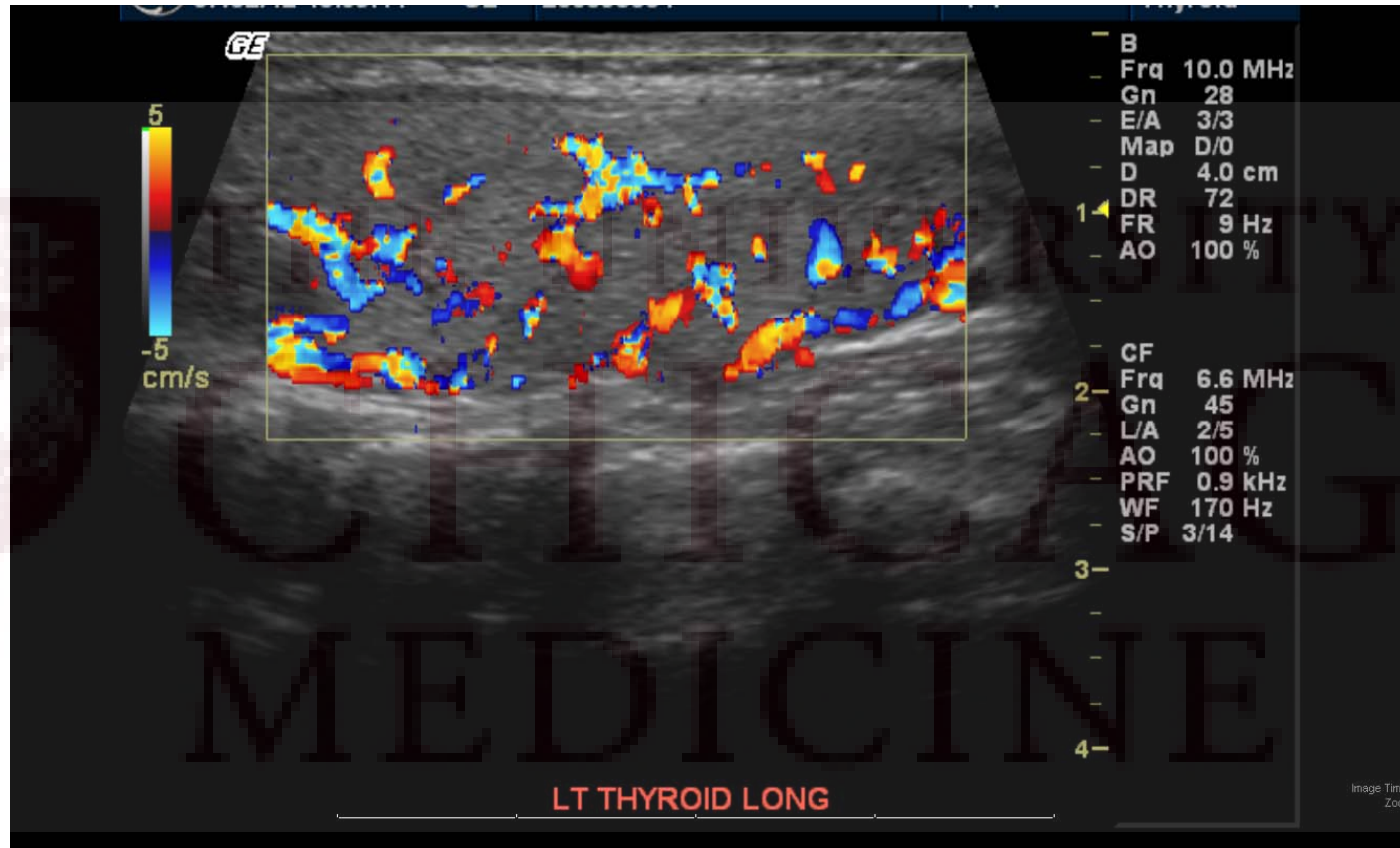
LT THYROID LONG



B  
 Frq 10.0 MHz  
 Gn 28  
 E/A 3/3  
 Map D/O  
 D 4.0 cm  
 DR 72  
 FR 9 Hz  
 AO 100 %

1 Rt Thyroid W 2.05 cm

RT THYROID TRANS



# OSH Management

- Diagnosed with autoimmune hyperthyroidism (Graves disease)
- Treated with methimazole (MMA)
  - Beta blocker withheld d/t h/o asthma
- Developed rash w/ blisters
  - Tx'd w/ 5-day course of prednisone 60 mg
- Referred to Dr. Kaplan for definitive surgical management



# Surgical evaluation

- Started on SSKI in preparation for surgery
- Again developed an immediate rash, burning to the eyes x 2 doses,
  - Partially responded to diphenhydramine
- Admitted for pre-operative preparatory treatment given allergic reactions and uncontrolled hyperthyroidism

# Physical Examination

- P-129 BP-135/77 T-37.1 R-16
- Wt: 39.9 kg
- HEENT: No eye findings; enlarged thyroid, 5 cm diagonal length
- CV: Tachycardia, regular rhythm
- Pulm: CTA b/l; NI WOB
- GI: Benign exam
- Neuro: Brisk DTRs

# Admission laboratory evaluation

- TSH  $<0.01$
- FT4: 4.84 (0.9-1.7 ng/dL)



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MEDICINE

# Hospital management

- Pre-treatment regimen (adapted from Radiology protocol):
  - Diphenhydramine, ranitidine, prednisone 1-2 hours before q12 hr SSKI doses, then also started propranolol
- Careful observation: PICU → floor

	7/27	7/28	7/29	7/30	7/31	8/01	8/02
<b>Prednisone</b> 2 hr before SSKI, Benadryl, rantidine 1 hr before SSKI	25 mg	25mg q12	25mg q12	25mg q12	25mg q12	25mg q12	25mg
<b>SSKI</b>		2 gtt BID	2 gtt BID	2 gtt BID	2 gtt BID	2 gtt BID	2 gtt
<b>Propranolol</b>		10mg q6	20mg q6	20mg q6	30mg q6	35mg q6	40mg
<b>Heart rate</b>		100s	80s	110-120	120s	100-120	80s

# Laboratory evaluation

		7/28/2012 1036	7/31/2012 1109	8/2/2012 0400
Thyrotropin	Latest Range: 0.30-4.00 mcU/mL	<0.01	<0.01	
Thyroxine, Free	Latest Range: 0.9-1.7 ng/dL	4.84	3.19 *	
Triiodothyronine	Latest Range: 80-195 ng/dL		164	
Calcium	Latest Range: 8.4-10.2 mg/dL	9.4		8.7
PTH, Intact	Latest Range: 15-75 pg/mL			17
25-Hydroxy Vitamin D	Latest Range: 10-52 ng/mL			22 *

	7/27	7/28	7/29	7/30	7/31	8/01	8/02
<b>Prednisone</b> 2 hr before SSKI, Benadryl, rantidine 1 hr before SSKI	25 mg	25mg q12	25mg q12	25mg q12	25mg q12	25mg q12	25mg  <b>SURGERY</b>
<b>SSKI</b>		2 gtt BID	2 gtt BID	2 gtt BID	2 gtt BID	2 gtt BID	2 gtt
<b>Propranolol</b>		10mg q6	20mg q6	20mg q6	30mg q6	35mg q6	40mg
<b>Heart rate</b>		100s	80s	110- 120	120s	100- 120	80s

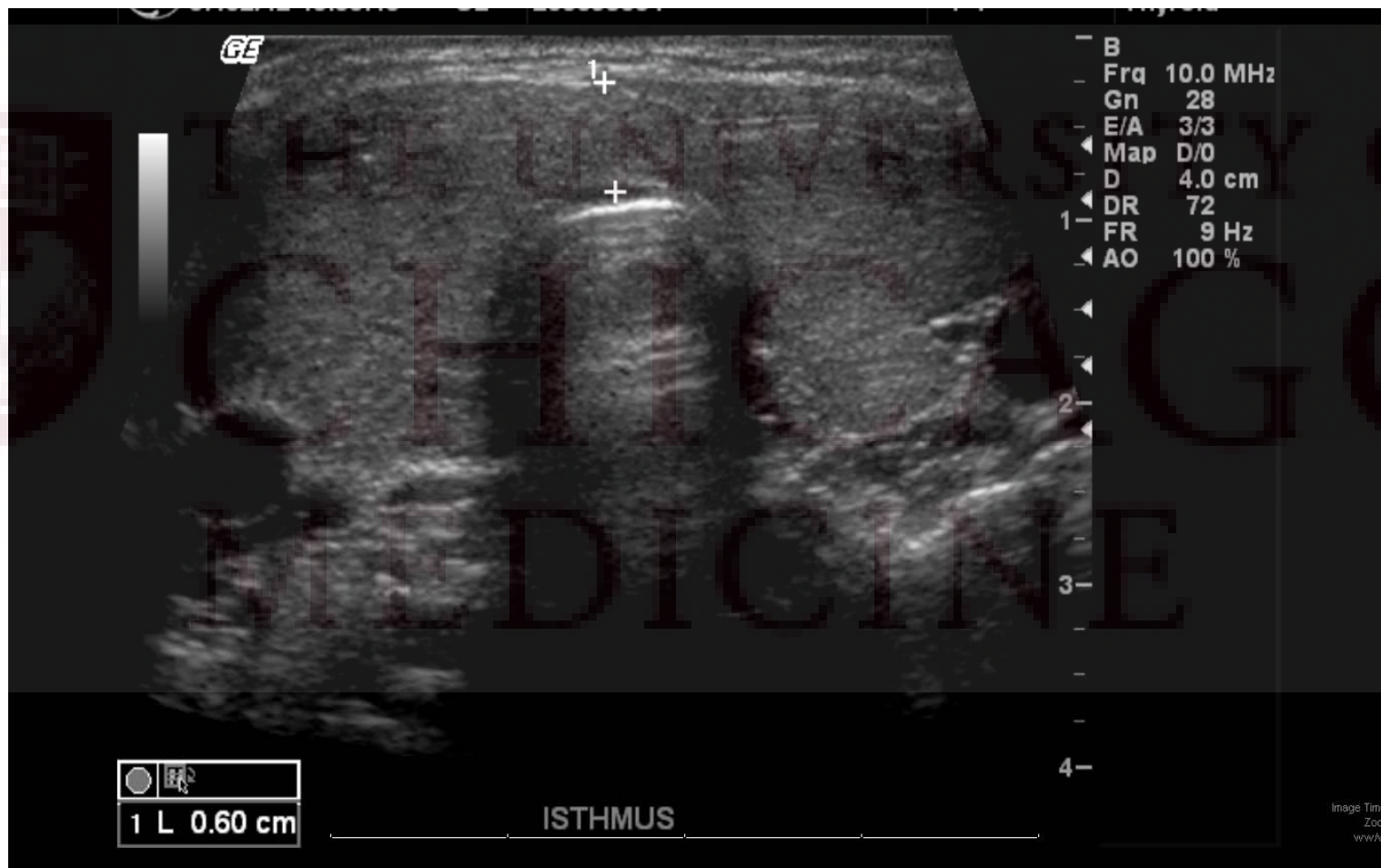






# Laboratory evaluation

		7/28/2012 1036	7/31/2012 1109	8/2/2012 0400	8/2/2012 1142	8/3/2012 0400
Thyrotropin	Latest Range: 0.30-4.00 mcU/mL	<0.01	<0.01			
Thyroxine, Free	Latest Range: 0.9-1.7 ng/dL	4.84	3.19 *			
Triiodothyronine	Latest Range: 80-195 ng/dL		164			
Calcium	Latest Range: 8.4-10.2 mg/dL	9.4		8.7	8.7	8.4
PTH, Intact	Latest Range: 15-75 pg/mL			17	16	16
25-Hydroxy Vitamin D	Latest Range: 10-52 ng/mL			22 *		



Age F  
12394557



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CL

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Thyroid

Parameter	Value	m1	m2	m3	m4	m5	m6	Method
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### B Mode Measurements

#### Thyroid

Rt Thyroid L	4.20 cm	4.20	Avg.
Rt Thyroid H	1.65 cm	1.65	Avg.
Rt Thyroid W	2.05 cm	2.05	Avg.
Rt Thyroid Vol	6.83 ml	6.83	
Lt Thyroid L	4.43 cm	4.43	Avg.
Lt Thyroid H	1.55 cm	1.55	Avg.
Lt Thyroid W	1.86 cm	1.86	Avg.
Lt Thyroid Vol	6.11 ml	6.11	

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