

# 44-year-old Woman with Thyromegaly

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May 23, 2013

# History of Present Illness

- Urgent Care Visit – November 2012
  - Anterior neck swelling and pain for two weeks prior to visit
  - Fatigue, sore throat, headache, fever, and chills
  - Many sick contacts as ED nurse at Comer

# History of Present Illness

- Urgent Care Visit
  - Exam notable for thyromegaly, afebrile
    - Ultrasound
    - ESR, TSH, free T4, total T3
    - Augmentin and NSAIDs
- Curbside to Endo Fellow on-call
  - Recommended treatment with NSAIDs
  - Scheduled visit 4 days later in Endo clinic
  - Discussion regarding antibiotics

# History of Present Illness

- Call to Endo Fellow 3 days later
  - New tender area on left side of gland, asymmetric, not sure if fluctuant
  - Febrile to 102 deg F
  - New dysphagia, no dyspnea



# History

- Past Medical History

- Palpitations
- Asthma
- Goiter

- Past Surgical History

- Tubal ligation

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# History contd.

- RN in Comer ED
- Married with 3 children
- Never used tobacco
- No alcohol use
- No illicit drug use
- Both parents with asthma
- Maternal aunt with rheumatoid arthritis

# Allergies/Medications

- Allergies

- Racemic epinephrine caused anaphylaxis
- Sulfa drugs cause anaphylaxis

- Medications

- Ibuprofen 600 mg q8h prn

# Review of Systems

- General: **positive** for fevers, fatigue and weight loss
- HEENT: **positive** for recent sore throat prior to swelling of gland
- Neck: **positive** for thyroid enlargement with tenderness, especially on the left
- Respiratory: Negative for cough, wheezing
- Cardiovascular: Negative for chest pain, shortness of breath, palpitation, lightheadedness
- Gastrointestinal: **Positive for dysphagia**; Negative for abdominal pain, nausea, vomiting, diarrhea, constipation
- Genitourinary: Negative for dysuria, hematuria
- Skin: Negative for diaphoresis, new rash
- Musculoskeletal: Negative for myalgias
- Neurological: Negative for weakness, numbness, tingling, tremors
- Psychiatric/Behavioral: Negative for anxiety, depression, no insomnia

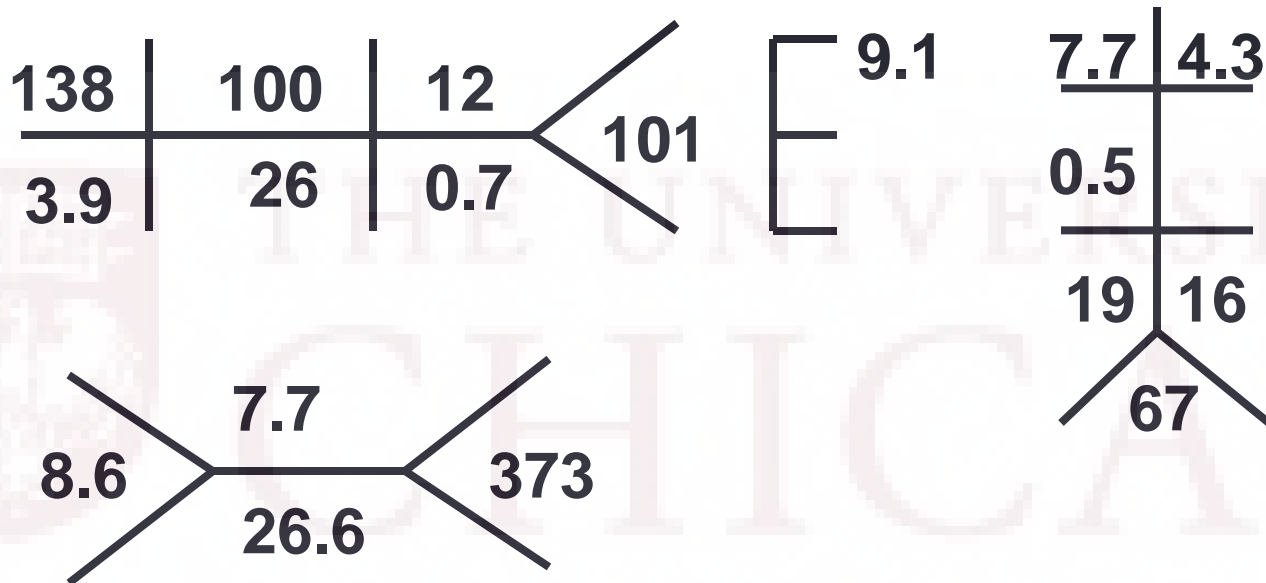


# Physical Exam

- BP 95/56 | Pulse 104 | Temp(Src) 38.1 °C (100.5 °F) (Tympanic) | Ht 154.9 cm (5' 1") | Wt 60.238 kg (132 lb 12.8 oz) | BMI 25.09 kg/m<sup>2</sup>
- Gen: well-nourished, well-developed, tired but comfortable-appearing in no acute distress
- HEENT: EOMI, PERRLA, Hertel exophthalmometer 16mm bilaterally
- Neck: Exquisitely tender and diffusely enlarged thyroid gland with the right lobe at least 6cm in greatest dimension and the left lobe at least 7cm. No bruit. There are distinct nodules with significant tenderness of inferior left lobe nodule, exam limited by pain
- Lymphatic: cervical lymphadenopathy present, exam limited by pain
- Lungs: clear to auscultation bilaterally
- CV: tachy rate, no extra heart sounds, PMI not displaced
- GI: bowel sounds present, soft, not distended, non-tender
- GU: deferred
- Musculoskeletal: normal gait and station, deltoids and hip flexors 5/5 strength b/l
- Neurologic: no tremor, biceps and patellar reflexes 2+ bilaterally
- Skin: warm, dry, no rashes

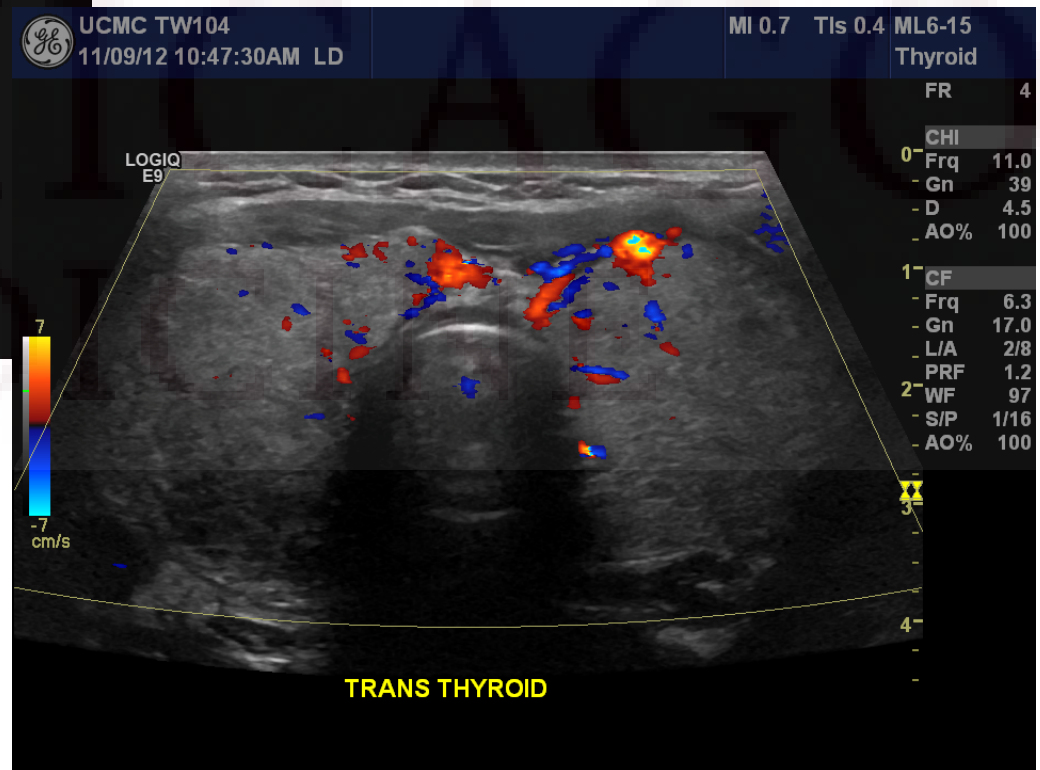


# Labs



Date	TSH (mcU/mL)	Free T4 (ng/dL)	Total T3 (ng/dL)
11/2	0.55	0.85	
11/9	0.36	1.04	121
11/15	0.04	1.97	189

# Ultrasound



# Assessment and Recommendations

- **Assessment:** Ms. King presents with clinical scenario and symptoms of subacute thyroiditis with no clinical evidence of thyrotoxicosis
- **Recommendations:**
  - **Thyroiditis, subacute:**
    - Continue ibuprofen or other NSAID regularly for pain (scheduled) with an understanding that symptoms will eventually improve
    - Prednisone may cause relief more immediately but is also associated with recurrence of thyroiditis after discontinuation
    - Repeat TFTs early next week
  - **Elevated Thyroid Hormone Levels:** no clinical evidence of thyrotoxicosis at this time; likely secondary to release of stored thyroid hormone from inflamed gland
    - atenolol (TENORMIN) 50 mg once daily if patient develops palpitations
    - Repeat TFTs next week
  - **Fatigue:** likely secondary to thyroiditis, anemia may also be contributing
    - Discuss iron supplementation with PCP

## 4 days later – return to Urgent Care

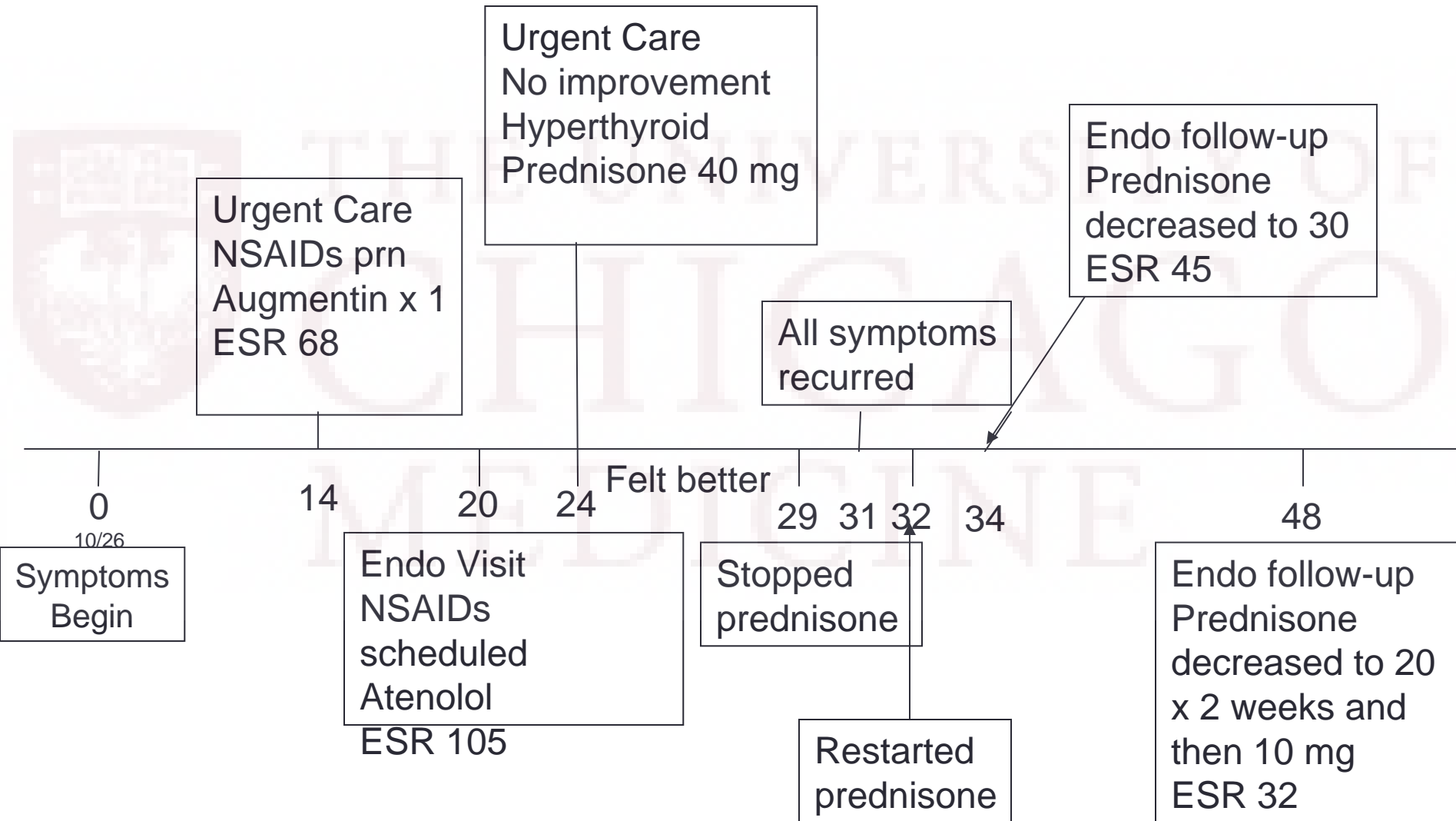
- New palpitations, shortness of breath, nervousness, insomnia

Thyrotropin	0.02 mcU/mL
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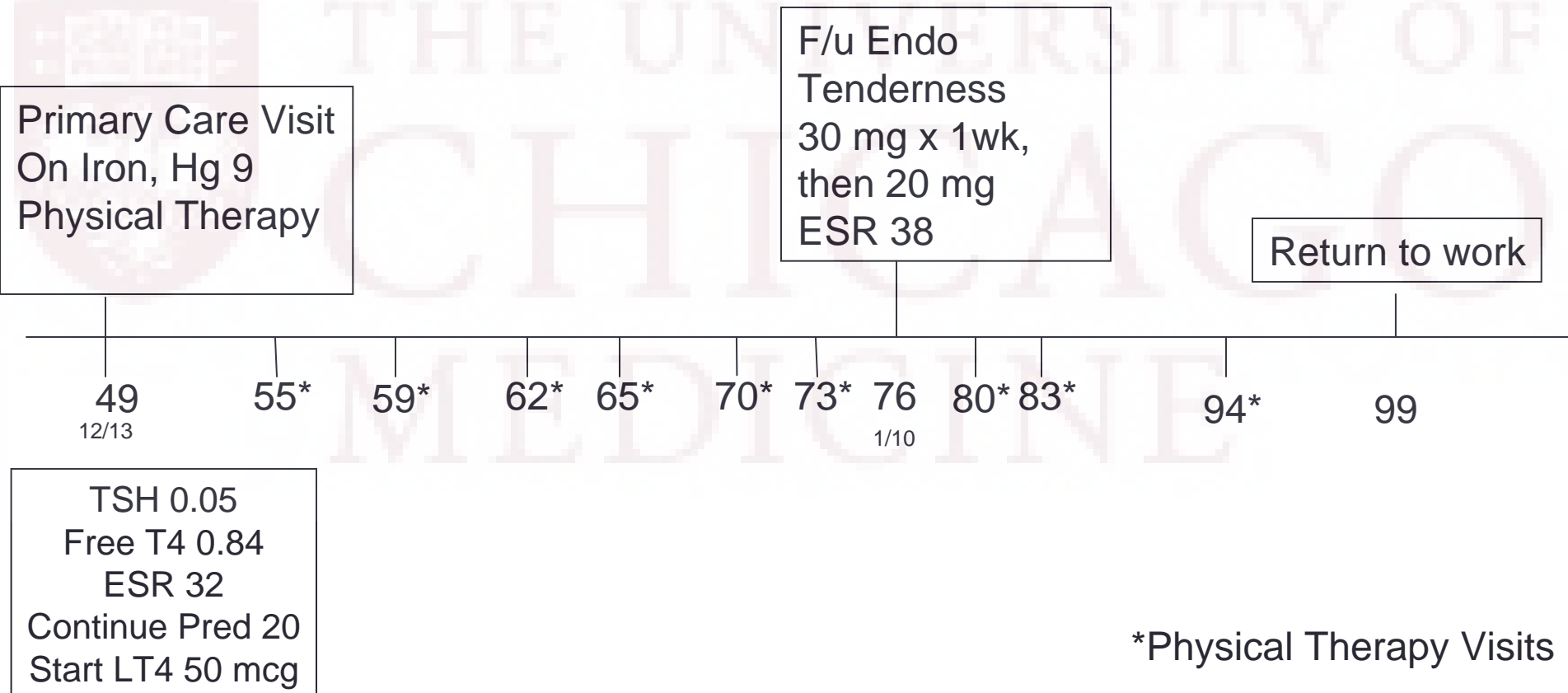
Thyroxine, Free	2.79 ng/dL
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Triiodothyronine	229 ng/dL
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# Course



# Course



Off work since day 7, lost 14 pounds since symptoms began





# Course

F/u Endo on 5 mg prednisone,  
painful, gland larger  
20 mg x 3 weeks, then 10 mg  
ESR 31

104  
2/07

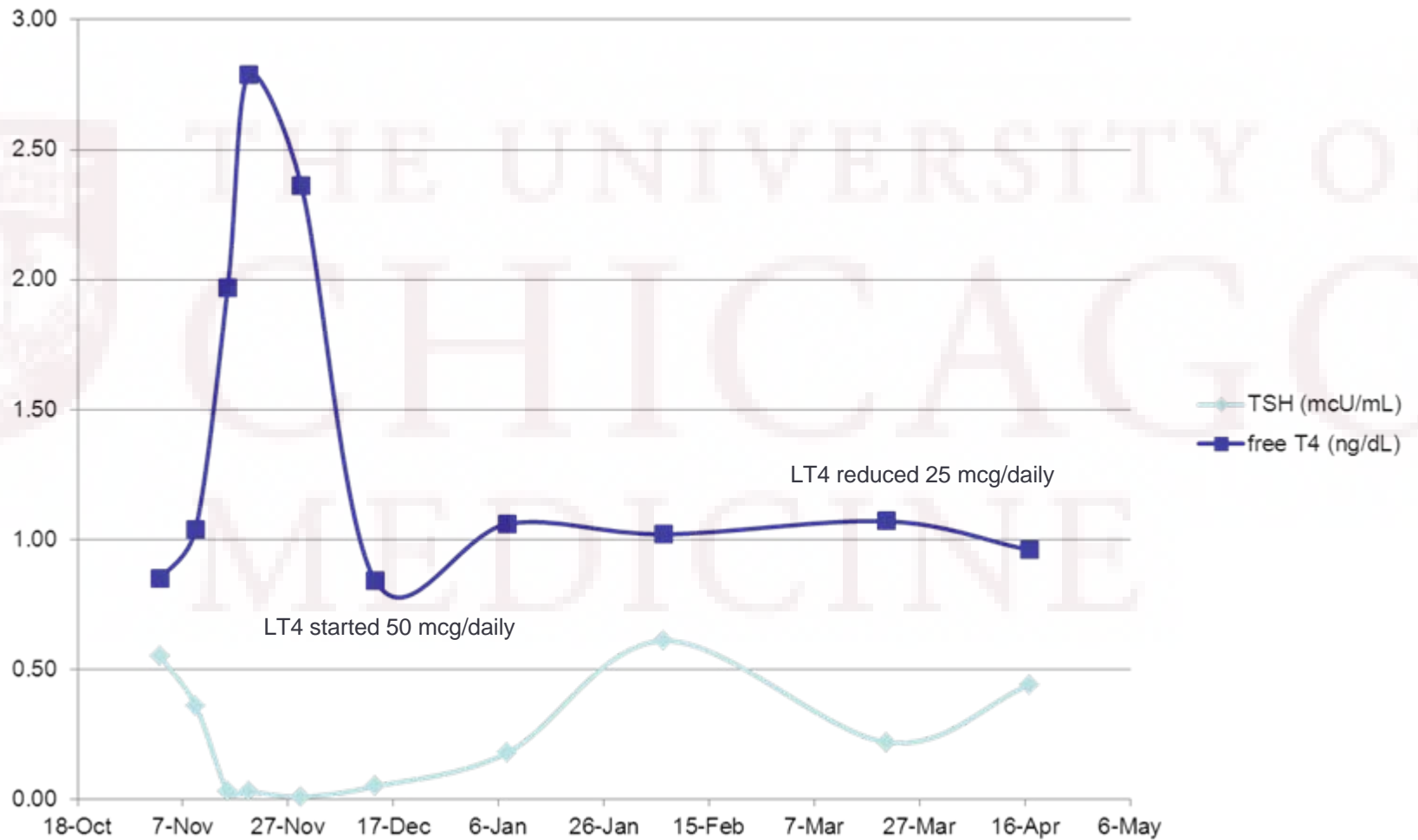
F/u Endo, Improved  
10 mg x 3wk, then 5 mg  
ESR 17

151  
3/26

174  
4/18

F/u Endo on 10 mg, doing well  
Continue 10 mg x 2 weeks, then 5mg  
ESR 10

# TFTs



January 2011, TSH: 0.43, Thyroxine 6.7 mcg/dL, Triiodothyronine 107 ng/dL

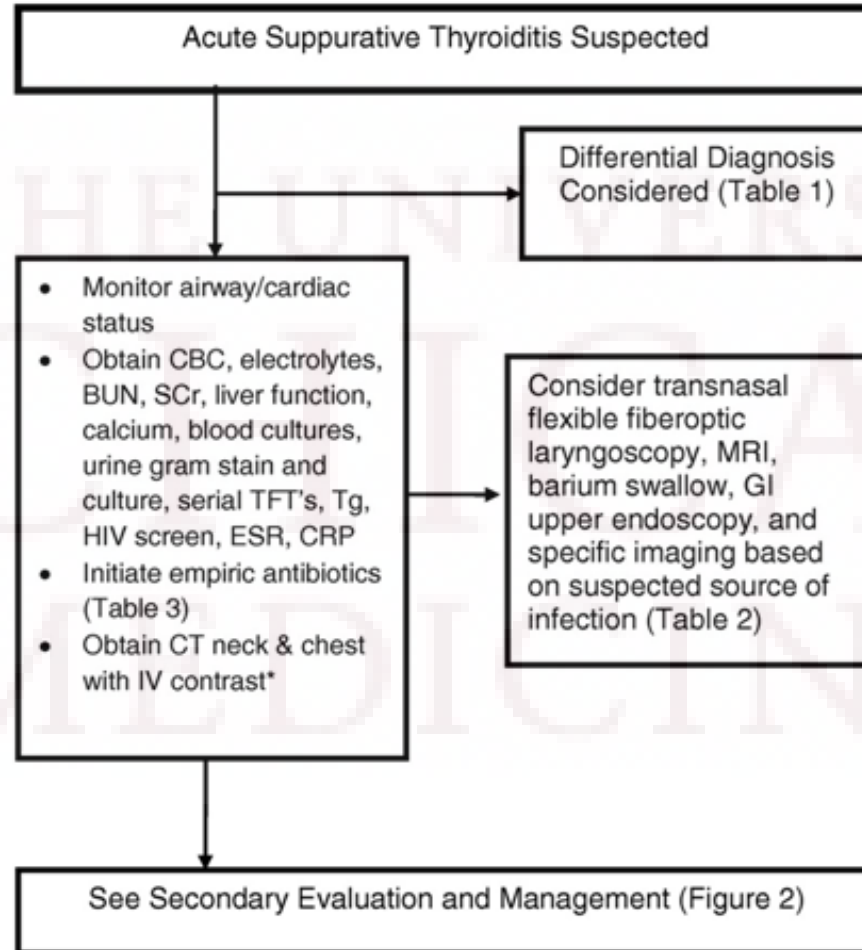
# Questions from this case

- When to image for acute suppurative thyroiditis?
- When to stop steroids, clinical improvement, iodine uptake?



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## ACUTE EVALUATION and MANAGEMENT of ACUTE BACTERIAL SUPPURATIVE THYROIDITIS



# Subacute Thyroiditis



Fritz de Quervain (1868–1940)

- Giant cells and granulomatous changes in the thyroid of affected individuals are the unique pathological finding.

Synonyms: subacute thyroiditis, subacute granulomatous thyroiditis, painful subacute thyroiditis, subacute nonsuppurative thyroiditis, giant cell thyroiditis, pseudogranulomatous thyroiditis, pseudotuberculous thyroiditis, and struma granulomatosa

**Table 2. Characteristics of Thyroiditis Syndromes.\***

Characteristic	Hashimoto's Thyroiditis	Painless Postpartum Thyroiditis	Painless Sporadic Thyroiditis	Painful Subacute Thyroiditis	Suppurative Thyroiditis	Riedel's Thyroiditis
Age at onset (yr)	All ages, peak 30–50	Childbearing age	All ages, peak 30–40	20–60	Children, 20–40	30–60
Sex ratio (F:M)	8–9:1	—	2:1	5:1	1:1	3–4:1
Cause	Autoimmune	Autoimmune	Autoimmune	Unknown	Infectious	Unknown
Pathological findings	Lymphocytic infiltration, germinal centers, fibrosis	Lymphocytic infiltration	Lymphocytic infiltration	Giant cells, granulomas	Abscess formation	Dense fibrosis
Thyroid function	Hypothyroidism	Thyrotoxicosis, hypothyroidism, or both	Thyrotoxicosis, hypothyroidism, or both	Thyrotoxicosis, hypothyroidism, or both	Usually euthyroidism	Usually euthyroidism
TPO antibodies	High titer, persistent	High titer, persistent	High titer, persistent	Low titer, or absent, transient	Absent	Usually present
ESR	Normal	Normal	Normal	High	High	Normal
24-Hour <sup>123</sup> I uptake	Variable	<5%	<5%	<5%	Normal	Low or normal

\* Information is from Farwell and Braverman.<sup>1</sup> TPO denotes thyroid peroxidase, ESR erythrocyte sedimentation rate, and <sup>123</sup>I iodine-123.

# Epidemiology

- most common cause of painful thyroid disease in adults
- data on prevalence in children are lacking
- Olmsted County, Minnesota study
  - 94 patients from 1970 to 1997
  - aged 14–87 years → was reported at 4.9 cases per 100,000/year
  - Peak incidence in the fourth and fifth decades
  - Female to male ratio of 4–7:1

Fatourechi V, Aniszewski JP, Fatourechi GZ et al (2003) Clinical features and outcome of subacute thyroiditis in an incidence cohort: Olmsted County, Minnesota, study. J Clin Endocrinol Metab 88:2100–2105

Benbassat CA, Olchovsky D, Tsvetov G, Shimon I (2007) Subacute thyroiditis: clinical characteristics and treatment outcome in fifty-six consecutive patients diagnosed between 1999 and 2005. J Endocrinol Investig 30:631–635

# Hypothyroidism

- Transient hypothyroidism was reported in 20–56% of adult patients, regardless of disease severity or treatment modalities
- Permanent hypothyroidism is less common, occurring only 5–15% and could occur many years after the diagnosis

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# Retrospective Study

- **Objective:** To identify predictive factors of clinical outcome of subacute thyroiditis
- **Design:** Retrospective case series of 56 consecutive patients treated in 3 outpatient clinics between 1999 and 2005
- **Main Outcome:** Mean age was  $48.6 \pm 12$  yr; 70% were females. Twenty-five percent had antithyroid antibodies and 9% had recurrent disease.
  - Differences in occurrence by season were not significant ( $p=0.28$ ).
  - Ultrasound, performed in 35 patients, revealed thyroid nodules in 25 (median size, 17 mm).

# Retrospective Study

- **Treatment**

- Ten patients received no treatment
- 25 received non-steroidal anti-inflammatory drugs
- 18 received glucocorticoids

- **Course**

- Median disease duration was 77 days
- hypothyroid phase was documented in 31 patients, and remained permanent in 6
- Patients given glucocorticoids had a shorter overall disease duration ( $p=0.03$ )

- **Conclusion:** Subacute thyroiditis follows an unpredictable clinical course

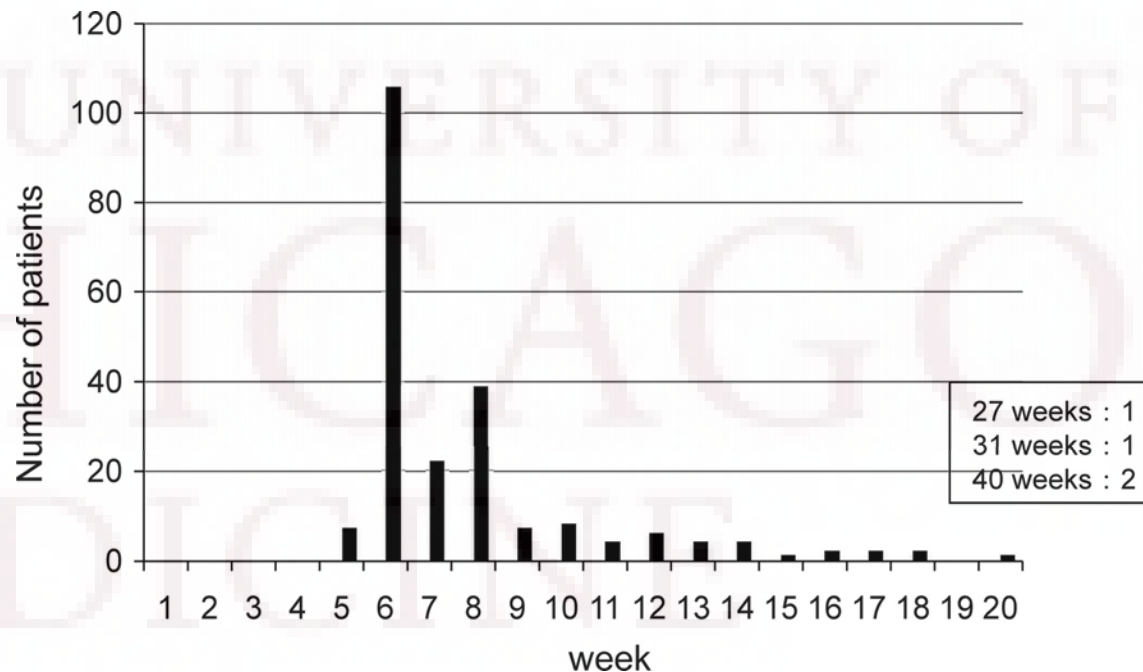
# Prospective Study

- Methods:

- 219 consecutive and untreated patients
- 15 mg prednisolone daily as initial dose tapering by 5 mg every two weeks
- When patients complained of pain in their neck or C-reactive protein (CRP) was still high, physicians were able to extend the tapering of the dose or increase it at 2-week intervals

# Prospective Study Results

- 113 (51.6%) patients recovered in 6 weeks without recurrence
- 61 (27.9%) improved within 7 to 8 weeks and did not have a recurrence



# Take home points

- Glucocorticoids provide almost immediate relief of symptoms but should not be stopped abruptly
  - slow taper with monitoring of clinical status and inflammatory markers (ESR/CRP) is advised
- Suppurative thyroiditis is most likely to occur in patients with:
  - preexisting thyroid disease (thyroid cancer, chronic lymphocytic thyroiditis, or multinodular goiter)
  - congenital anomalies such as a pyriform sinus fistula (the most common source of infection in children)
  - Immunosuppressed, elderly, or debilitated