

# Primary biliary cirrhosis with new-onset hyperthyroidism and elevated INR



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## Introduction

- Primary biliary cirrhosis (PBC) has been associated with thyroid dysfunction, especially with autoimmune thyroid disease.
- Hyperthyroidism is known to increase catabolism of vitamin-K-dependent clotting factors (II, VII, IX, X) and increase the response of vitamin K antagonists, usually warfarin.

## Clinical Presentation

A 64-year-old female with PBC and antiphospholipid antibody syndrome on warfarin presenting with hemorrhagic epiglottitis.

### HPI:

- Emergently intubated in the ED for airway protection
- Her PBC was diagnosed as stage II on biopsy 23 years ago and has remained clinically stable on ursodiol therapy.

### Vitals:

- Tachycardic, tachypneic with O<sub>2</sub> saturations <90% on HFNC prior to intubation.

### Physical Exam:

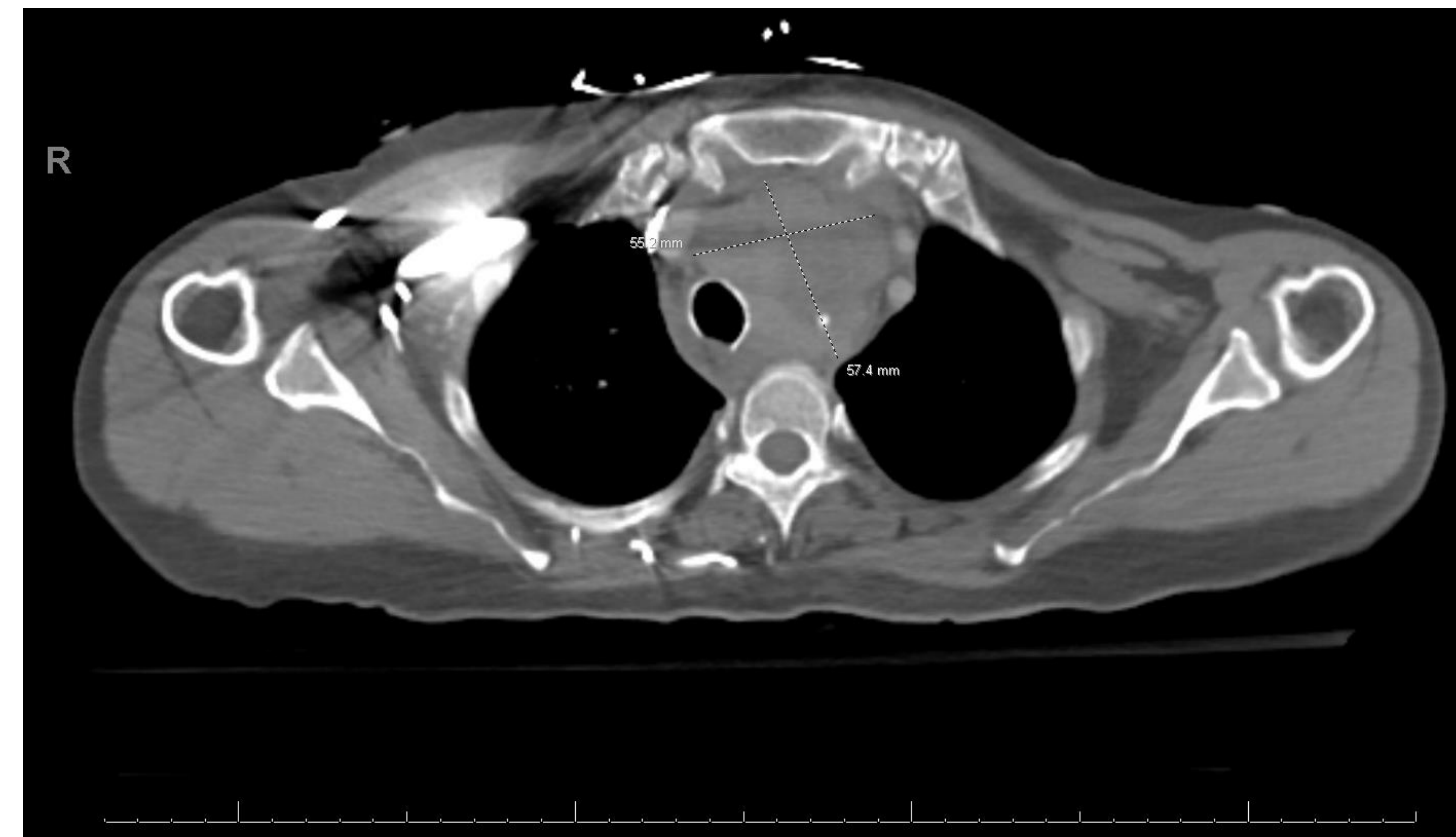
- Large goiter with diffuse upper airway swelling.
- Intubated at time of exam with no other pertinent exam findings.

### Labs/Studies:

- COVID-19 PCR positive.
- INR >16.0, PT >200.0
- WBC of 22.8 x 10<sup>9</sup> cells/L
- Lactate of 2.5
- TSH of <0.0017 (normal a year prior), Free T4 of 3.4, Free T3 of 5.3
- Normal TSH receptor antibody and thyroid stimulating IG levels
- LETs WNL aside from albumin 2.0
- CTA Chest with findings of 5.7cm heterogenous, partially calcified superior mediastinal mass consistent with multinodular thyroid goiter.

## Hospital Course and Treatment

- Patient was initially given prothrombin complex concentrate and vitamin K with correction of INR over the following few days.
- She was subsequently extubated and started on methimazole.
- During the hospital course, she was found to have coffee ground emesis for which an EGD was done with findings of non-bleeding gastric ulcer (Forrest Class IIc) and LA Grade D esophagitis with adherent clot and bleeding for which hemostatic spray was applied.
- Patient was discharged a few days later following resumption of warfarin and on pantoprazole and methimazole.



**Figure 1.**

Image of CT Chest angiogram with findings of 5.7cm heterogenous, partially calcified superior mediastinal mass contiguous with the thyroid consistent with multinodular thyroid goiter with rightward mass effect and deviation of trachea.

## Discussion

- This patient with PBC presents with new-onset hyperthyroidism with multinodular thyroid goiter and significantly elevated INR in the setting of warfarin use with hospital course complicated by GI bleed.
- Patients with PBC are at higher risk of autoimmune conditions including thyroid dysfunction, most commonly hypothyroidism from Hashimoto's thyroiditis.
- COVID-19 infection also independently can exacerbate underlying autoimmune disease.

## Learning Points

- PBC is associated with thyroid dysfunction – hyperthyroidism, hypothyroidism, and thyroid cancer.
- Hyperthyroidism is less commonly associated with PBC compared to other thyroid dysfunction but should be considered especially with the finding of elevated INR.

## References

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