

# Thyroid Lymphoma: A Rare Cause of Thyroid Malignancy

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## Background

- Primary lymphoma of the thyroid is rare constituting 2-5% of all thyroid malignancies and less than 2% of extranodal lymphomas.<sup>1</sup>
- Patients typically present with a rapidly enlarging thyroid gland with or without compressive symptoms.
- Current ATA guidelines recommend that diffuse FDG-PET uptake in the thyroid gland should be further investigated with thyroid ultrasound imaging and thyroid function assessment.<sup>3</sup>

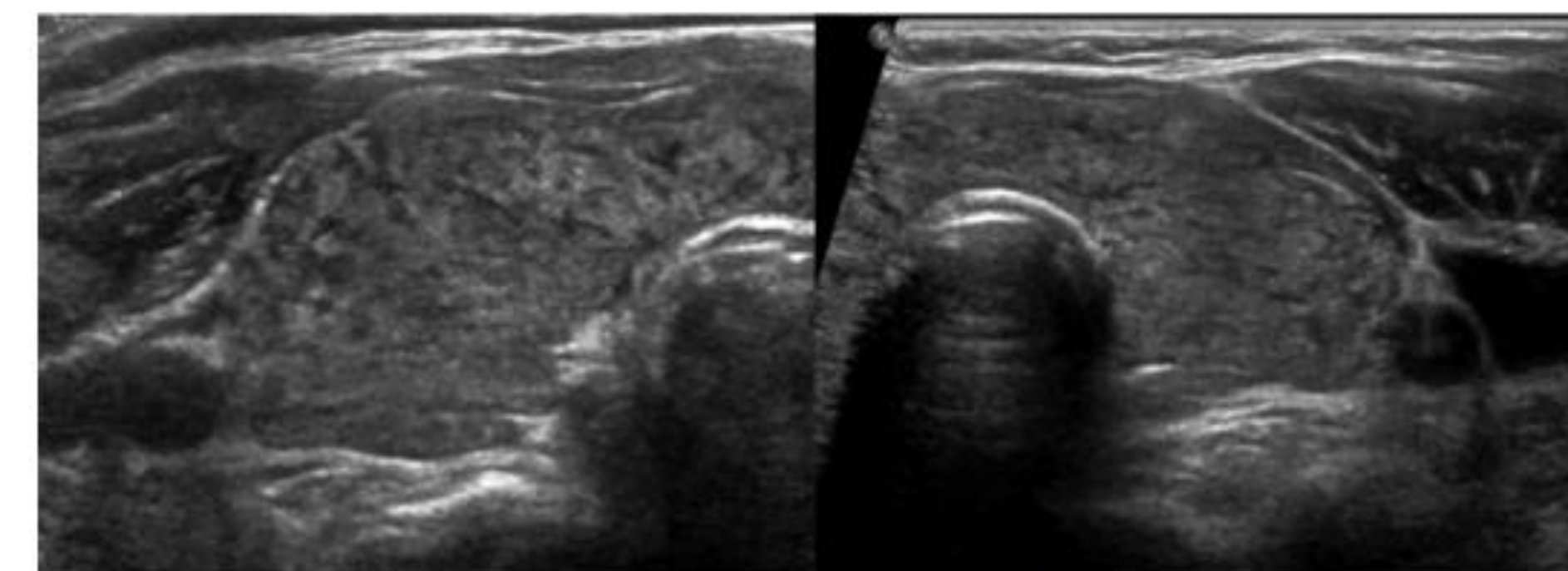
## Case Presentation

The patient is a 72-year-old female with hypertension, hyperlipidemia, coronary artery disease and hypothyroidism who presented for evaluation after diagnosis of extranodal follicular cell lymphoma discovered on breast biopsy.

In her evaluation for extent of disease an FDG-PET scan was performed that showed evidence of diffuse avidity within her thyroid gland.

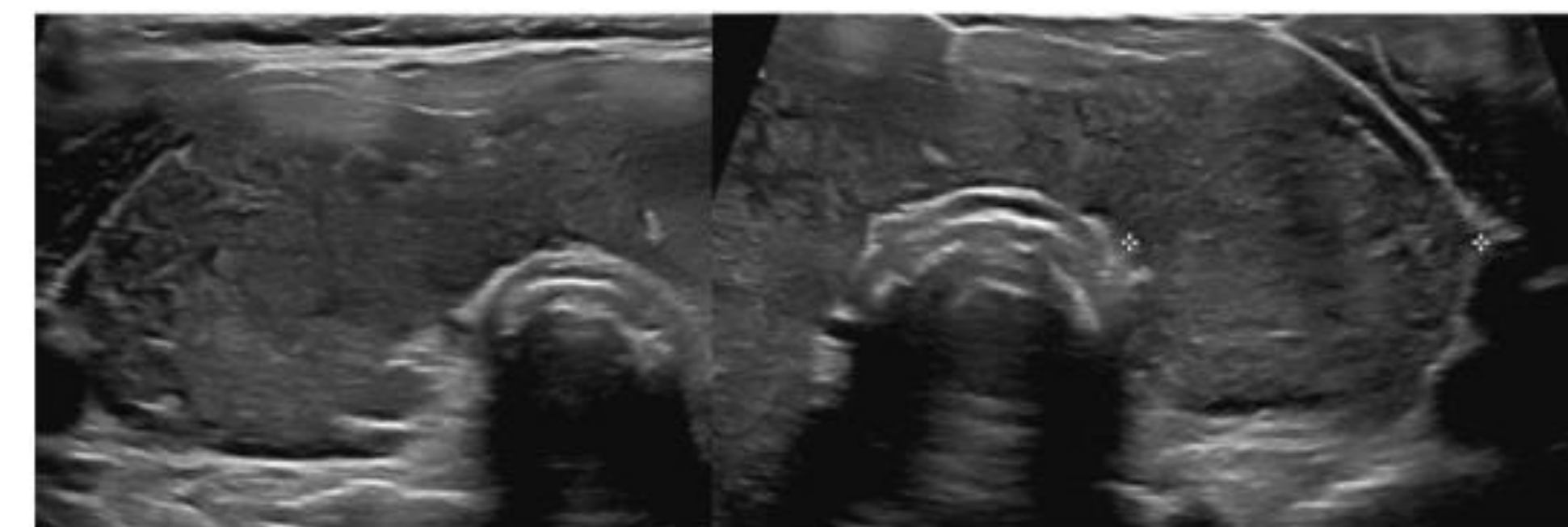
The patient was clinically hypothyroid with symptoms of fatigue, cold intolerance and constipation. She denied any overt compressive symptoms related to her thyroid, but examination found evidence of an enlarging thyroid gland. Thyroid gland changes appreciated on physical examination were confirmed on dedicated thyroid imaging.

## Investigations and Interventions



Right Lobe 6.9x2.2x2.2 cm Volume 13.6ml  
Left Lobe 6.2x1.9x1.9 cm Volume 11.7ml  
Figure 1: Ultrasound imaging of thyroid gland 4 years prior to lymphoma diagnosis

The patient's diffusely heterogeneous thyroid gland had increased in size; more than doubling in the right thyroid lobe.



Right Lobe 7.7x2.7x2.8cm Volume 30.7ml  
Left Lobe 7.2x2.5x2cm Volume 18.7ml  
Figure 2: Ultrasound imaging of thyroid gland 2 months prior to lymphoma diagnosis

Thyroid FNA biopsy was performed with, importantly, flow cytometry, that showed evidence of follicular cell lymphoma within the thyroid gland.

The patient was started on solitary Rituxan chemotherapy per oncology discernment in setting of age and relatively indolent disease.

After initiation of treatment repeat imaging showed reduction in thyroid gland size, nearly back to its original size years before.

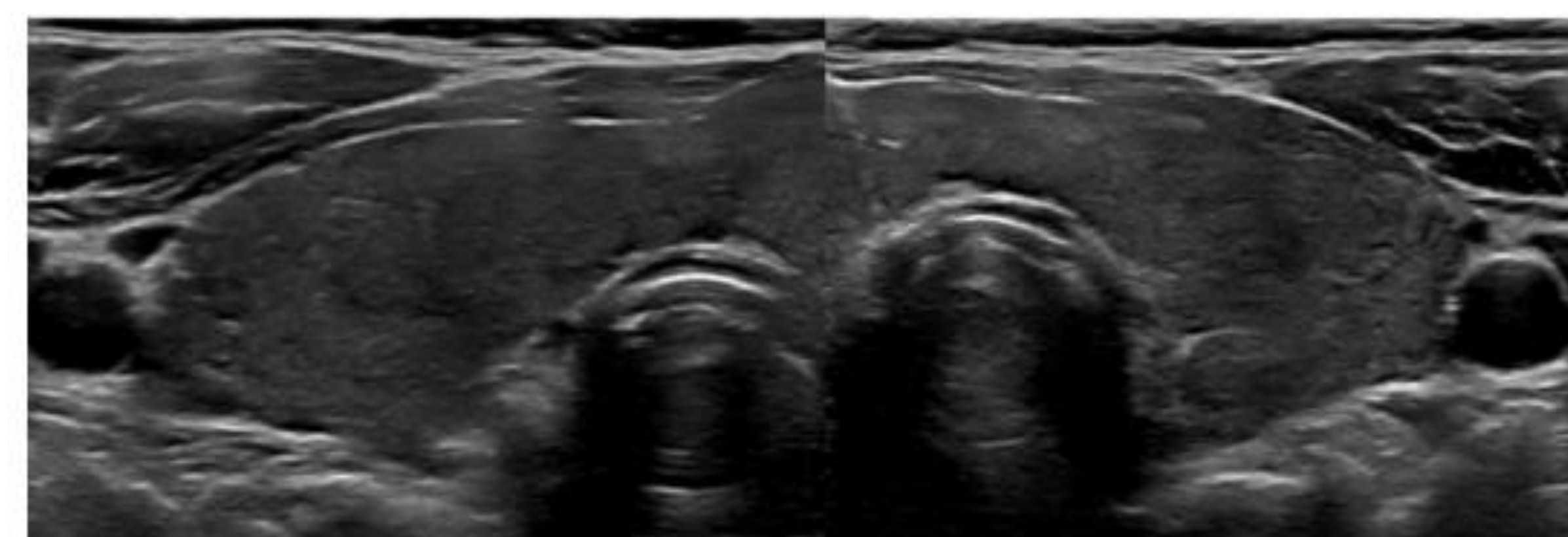


Figure 3: Ultrasound imaging of thyroid gland after 2 doses of Rituxan

Right Lobe 7.2x2.5x1.8 cm Volume 16.5ml  
Left Lobe 6.7x2.4x1.6 cm Volume 13.6ml

## Investigations and Interventions

Repeat FDG-PET showed persistent but reducing avidity within the thyroid gland with SUV max decreasing from 12.4 to 7.9.

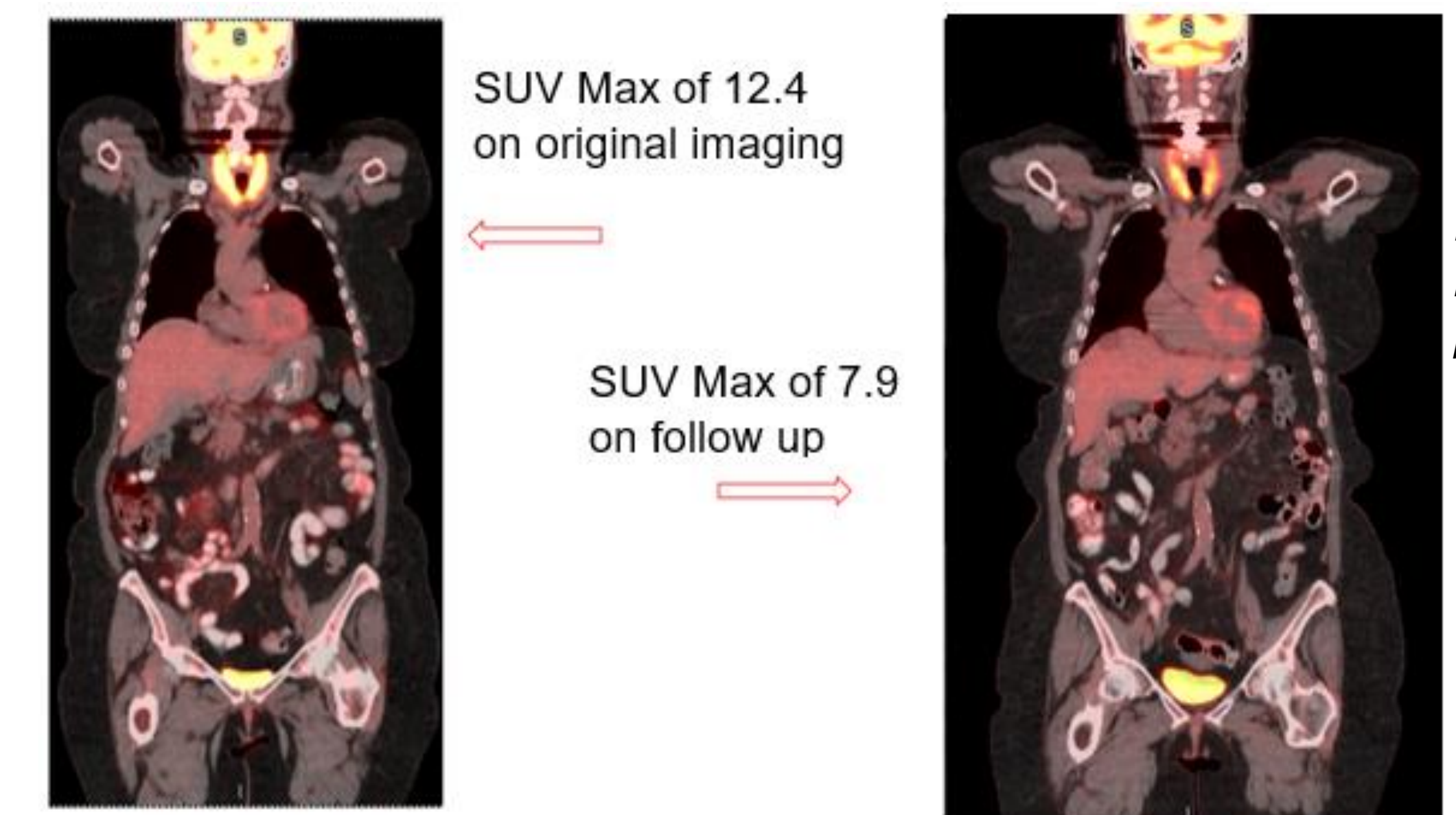


Figure 4: FDG-PET imaging prior to and post treatment

## Discussion

- Thyroid lymphoma should always be considered when approaching a patient with a rapid, diffusely enlarging thyroid gland.
- Etiologies to consider when approached with diffuse FDG-PET avidity in the thyroid gland includes graves disease, chronic lymphocytic thyroiditis as well as malignancy.<sup>2</sup>
- Based on current ATA guidelines, increased thyroid gland FDG-PET avidity and ultrasound findings suggestive of chronic lymphocytic thyroiditis typically would not warrant further action.<sup>3</sup> However, we propose the evaluation for thyroid lymphoma should be explored if the clinical picture is suspicious, as was this case.

## References

1. Stein, Stephanie Aleskow, and Leonard Wartofsky. "Primary Thyroid Lymphoma: A Clinical Review." *The Journal of Clinical Endocrinology & Metabolism*, vol. 98, no. 8, 2013, pp. 3131-3138., doi:10.1210/jc.2013-1428.
2. Karantanis, D., et al. "Clinical Significance of Diffusely Increased 18F-FDG Uptake in the Thyroid Gland." *Journal of Nuclear Medicine*, vol. 48, no. 6, 2007, pp. 896-901., doi:10.2967/jnumed.106.039024.
3. Haugen, Bryan R., et al. "2015 American Thyroid Association Management Guidelines for Adult Patients with Thyroid Nodules and Differentiated Thyroid Cancer: The American Thyroid Association Guidelines Task Force on Thyroid Nodules and Differentiated Thyroid Cancer." *Thyroid*, vol. 26, no. 1, 2016, pp. 1-133., doi:10.1089/thy.2015.0020.