

Thyroid Ablation after Thyroid Cancer Recurrence in a Hostile Neck

Hanna K. Thompson, Vishal R. Somnay MD, Bryan J. Glaenzer MD
Department of Radiology, University of Louisville, Louisville, KY



Purpose

We describe the technically successful radiofrequency ablation (RFA) of recurrent thyroid cancer in a patient who was deferred by surgery.

Case

A 65-year-old female presented with recurrent papillary thyroid carcinoma (PTC). She had previously undergone total thyroidectomy, central and lateral neck dissection, and post-operative radioactive iodine ablation. Increasing serum thyroglobulin prompted evaluation for disease recurrence. Increased uptake was noted on PET/CT in the lateral right thyroid lobe bed corresponding to nodal metastasis. Due to the malignancy's proximity to the right common carotid artery, the patient was considered an unsuitable candidate for surgery and elected to pursue RFA.

Under ultrasound guidance, a mixture of saline and 1% lidocaine were infused into the R neck to separate the lesion from adjacent common carotid artery. Ablation proceeded with the moving shot technique (Fig 1). Doppler US immediately following ablation demonstrated no flow disturbances (Fig 2).

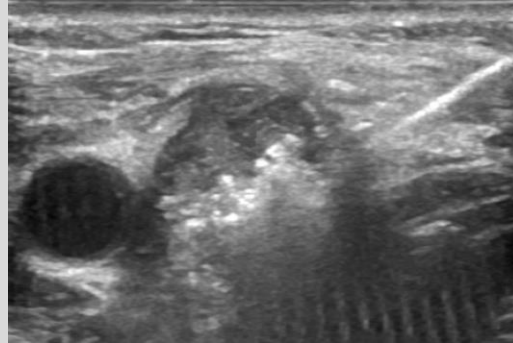


Figure 1 – Following hydrodissection, the malignancy was targeted with an RFA probe.

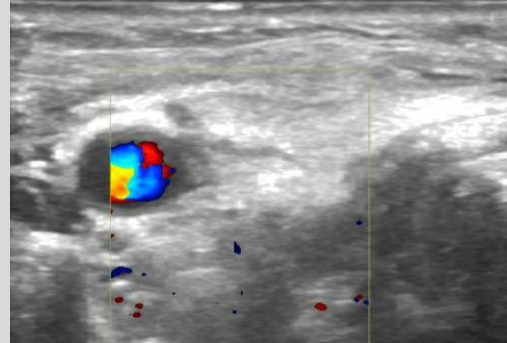


Figure 2 – Post-RFA Doppler US demonstrated protection of the R common carotid by preprocedural hydrodissection.

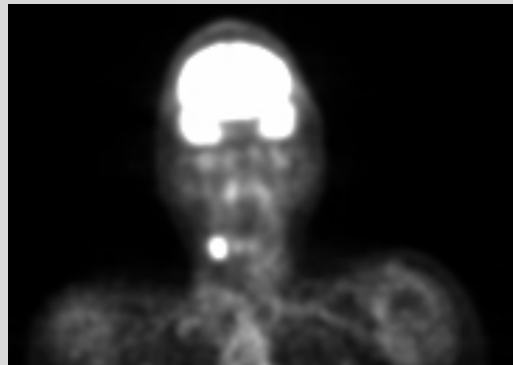


Figure 3 – Hypermetabolic station 3B nodal metastasis in the right neck demonstrates maximum SUV of 8.31.

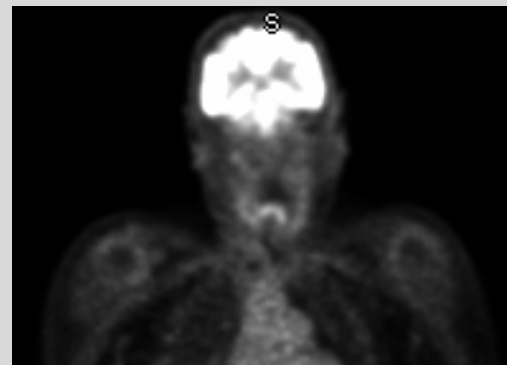


Figure 4 – Post-procedural PET imaging demonstrates resolution of FDG uptake in the right neck nodal metastasis.

Repeat PET/CT 5 weeks post-procedure demonstrated no abnormal uptake in the thyroid beds, indicating successful RFA of the target lesion (Fig 3 & 4). No additional findings concerning for definitive metastasis were observed.

Discussion

- First-line treatment for PTC and recurrent TC of any type often includes surgical resection.¹
- Surgery results in scarring of the thyroid bed, increasing the risk of injury to the parathyroid glands, recurrent laryngeal nerve, and vasculature with repeat intervention.²
- RFA is a viable treatment option for PTC, particularly in cases where risk of injury to associated structures is high.
- Hydrodissection serves as a valuable technique to isolate the ablation target and protect surrounding structures.

References

- [1] Haugen BR, 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*. 2016 Jan;26(1):1-133.
- [2] Pace-Asciak P, et al. The Treatment of Thyroid Cancer With Radiofrequency Ablation. *Tech Vasc Interv Radiol*. 2022 Jun;25(2):100825.