

Percutaneous Laser Ablation Is Effective Therapy for Cervical Nodal Recurrence of Papillary Thyroid Cancer

Jerome M. Hershman

Mauri G, Cova L, Tondolo T, Ierace T, Baroli A, Di Mauro E, Pacella CM, Goldberg SN, Solbiati L. Percutaneous laser ablation of metastatic lymph nodes in the neck from papillary thyroid carcinoma: preliminary results. *J Clin Endocrinol Metab.* May 10, 2013 [Epub ahead of print].

SUMMARY ●●●●●●●●●●●●●●●●

Background

Papillary thyroid carcinoma (PTC) frequently metastasizes to cervical lymph nodes. The recurrence can be identified by ultrasonography and FNA of the abnormal nodes. At present, the therapy for this recurrence is either ^{131}I or surgical resection. This study describes percutaneous laser ablation (PLA) of metastatic cervical nodes, a new therapy.

Methods

Fifteen patients were included in the study, and all had at least 6 months of follow-up after PLA. The procedure was applied to 24 newly identified lymph-node recurrences in patients who had undergone thyroidectomy and radioiodine ablation. At the time of recurrence, the patients had uptake of FDG in the node on PET/CT but had a negative radioiodine scan.

Each lymph node was identified by ultrasound and by contrast-enhanced ultrasound (CEUS). The ablation procedure was performed using a commercially available ultrasound system with an integrated laser source under local anesthesia. Introducer needles were placed in the lymph node, an optic fiber was advanced to the needle tip, and laser power was administered to cover several millimeters more than the volume of the nodule. At the end of the

procedure, the effect of the treatment was confirmed by showing a lack of enhancement by CEUS, indicating destruction of the node. Patients were followed by ultrasonography, serum thyroglobulin (Tg), and PET/CT at 6 and 12 months after the procedure.

Results

The procedure was technically successful in all patients. In 2 patients, CEUS showed residual enhancement of the treated lymph node after the first ablation, so a second PLA was performed in the same session. The 6-month follow-up showed that local control was achieved in 11 of the 15 patients. Imaging showed that 20 of 24 nodes were negative on PET and CEUS. There were no immediate or late major complications.

One patient had extensive progression of lung and lymph-node recurrence and was excluded from further follow-up. At the 12-month follow-up, 16 of 20 treated nodes were negative on imaging. Local control was achieved in 10 of the 14 patients, but lung metastasis developed in 1. In 3 other patients with apparent local control, Tg was elevated.

Conclusions

Percutaneous laser ablation is a feasible, safe, and effective treatment for cervical nodal recurrence of PTC.

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ANALYSIS AND COMMENTARY ● ● ● ● ●

This small series shows the potential efficacy of this new procedure. It is technically demanding and requires that the interventionist possess skills in ultrasonography and laser therapy. The results of this study were similar to another recent series that included only five patients (1).

In patients with aggressive PTC, the usual first-line therapy for cervical recurrence is extensive neck dissection, but this is successful in only about three-fourths of patients. For patients with radioiodine uptake in nodes, ¹³¹I may eradicate the recurrence, but it is certainly not uniformly successful; appar-

ently, none of the patients in this series had radioiodine uptake in their nodes. Fortunately, the armamentarium for treatment of cervical recurrences is rapidly increasing and now includes alcohol injection, radiofrequency, microwaves, and cryoablation in addition to PLA (2,3). Each technique requires special expertise. As experience accrues with PLA and these other methods, it will be worthwhile to compare the results of these methods to each other and to those achieved with surgical therapy.

I hope to hear from our readership with regard to your use of these new techniques for treatment of recurrent cervical nodes.

References

1. Papini E, Bizzarri G, Bianchini A, et al. Percutaneous ultrasound-guided laser ablation is effective for treating selected nodal metastases in papillary thyroid cancer. *J Clin Endocrinol Metab* 2013;98:E92-7. Epub November 12, 2012.
2. Hay ID, Charboneau JW. The coming of age of ultrasound-guided percutaneous ethanol ablation of selected neck nodal metastases in well-differentiated thyroid carcinoma. *J Clin Endocrinol Metab* 2011;96:2717-20.
3. Dupuy DE, Monchik JM, Decrea C, Pisharodi L. Radiofrequency ablation of regional recurrence from well-differentiated thyroid malignancy. *Surgery* 2001;130:971-7.