MANAGEMENT OF PAPILLARY THYROID MICROCARCINOMA

Durante C, Attard M, Torlontano M, Ronga G, Monzani F, Costante G, Ferdeghini M, Tumino S, Meringolo D, Bruno R, De Toma G, Crocetti U, Montesano T, Dardano Angela, Lamartina L, Maniglia A, Giacomelli L, Filetti S, on behalf of the Papillary Thyroid Cancer Study Group. Identification and optimal postsurgical follow-up of patients with very low-risk papillary thyroid microcarcinomas. J Clin Endocrinol 2010;95:4882-8.

SUMMARY

BACKGROUND

Small papillary thyroid cancers (PTC) are being found with increasing prevalence. The appropriate follow-up for papillary thyroid microcarcinoma (PTMC) is unclear. In addition, there is still some controversy with regard to how aggressively these patients should be treated. The purpose of this retrospective study by an Italian consortium was to test the hypothesis that clinical criteria could be used to identify patients with very low recurrence rates and to define the best method for follow-up.

METHODS

From nine centers in Italy, a group of 312 patients (89% female) with PTMC were identified who had the following seven characteristics: no family history of thyroid cancer, no previous head and neck irradiation, tumor staging T1 (1 cm or less), N0M0, no extracapsular extension, unifocal, no aggressive variants of the papillary cancer, and not locally invasive tumor. Each patient had undergone complete or nearly complete thyroidectomy. The patients were followed yearly for at least 5 years. The decision to ablate remnants with radioactive iodine was left to individual management at each institution. Patients were usually treated with suppressive doses of levothyroxine. Annual follow-up included physical examination, serum thyrotropin (TSH), thyroglobulin, antithyroglobulin, and cervical ultrasonography with special attention to lymph nodes.

RESULTS

Three fourths of the patients had PTMC found incidentally at surgery for multinodular goiter. One fourth were diagnosed preoperatively by fine-needle aspiration biopsy. Eighty-eight percent were female. Follow-up ranged from 5 to 23 years (median, 6.7). The median tumor size was 5 to 6 mm (range, 0.5 to 10). Radioactive iodine (RAI) remnant ablation was performed in 44% and not in 56%; it was performed mainly in those diagnosed preoperatively who tended to have larger tumors. The follow-up serum thyroglobulin was <1 ng/ml in 97% of the patients. Both the first and the last follow-up cervical ultrasounds were negative in all patients. A negative ultrasound at 1 year gave a negative predictive value of 100% for recurrence. No patient had persistence or recurrence of thyroid cancer.

CONCLUSION

By appropriate risk stratification, a limited follow-up can be used in patients with PTMC who had no significant risk factors for recurrence. Neck ultrasonography is the key element in this follow-up.

COMMENTARY

This retrospective study found that PTC <1 cm without risk factors indicative of more aggressive disease that are treated by thyroidectomy did not recur, regardless of whether radioiodine ablation had been used. The authors recommend that postoperative surveillance of these patients can be based exclusively on ultrasonography and that this can be discontinued after 5 years. It is interesting that they did not use recombinant TSH as a basis for prognosis. They do not recommend RAI ablation for these patients, and this is consistent with the recent ATA guideline for low-risk PTMC. It should be emphasized that the conditions to be included in the study, as noted above, excluded all of the factors that might contribute to more aggressive disease.

In contrast with these conclusions and the data from this study, there are reports of patients with PTMC

who have recurrent disease. Arora et al. at New York Presbyterian Hospital compared 66 patients with PTMC and 136 patients with larger PTC (1). Recurrence was found in 17% of the patients with PTMC patients and in 21% with larger PTC; this was not a significant difference. PTMC recurred in 11 patients. Eleven of those with PTMC had recurrence, but 8 had multifocal tumors, 6 had lymph-node metastases, 3 had angiolymphatic invasion, and 2 had distant metastases. Patients with these features would have been excluded from the Italian study. Tzettov et al. in Israel reported a series of 225 patients with differentiated thyroid carcinomas <1 cm (98% PTMC) (2); the median size was 7 mm. Multifocal disease was found in 50%, bilateral disease in 32%, extrathyroidal extension in 16%, lymph-node metastases in 26%, and distant metastases in 2.4%; 96% were treated by total thyroidectomy. Not surprisingly, 11% had recurrent disease, as compared with 32% of 543 patients with macroscopic differentiated thyroid cancer at the same institutions.

Putting this together, I conclude that the follow-up recommended by Durante and colleagues is appropriate for patients with PTMC who have no features of aggressive disease but that more extensive follow-up is necessary for patients with PTMC who have findings indicative of more aggressive disease. The patients with aggressive PTMC require aggressive therapy and careful monitoring for recurrence.

All PTMC cannot be put into the same basket. It is necessary to individualize therapy in patients with these small tumors based on the findings at initial clinical evaluation, pathology, and routine follow-up in the first year.

— Jerome M. Hershman, MD

References

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2. Tzvetov G, Hirsch D, Shraga-Slutzky I, et al. Well-differentiated thyroid carcinoma: comparison of microscopic and macroscopic disease. Thyroid 2009;19:487-94.