ARE LOBECTOMY AND THYROIDECTOMY WITHOUT RADIOACTIVE IODINE REMNANT ABLATION A SAFE PROCEDURE IN SELECTED THYROID CANCER PATIENTS?

Vaisman F, Shaha A, Fish S, Tuttle R. **Initial therapy with either thyroid lobectomy or total thyroidectomy without radioactive iodine remnant ablation is associated with very low rates of structural disease recurrence in properly selected patients with differentiated thyroid cancer.** Clin Endocrinol (Oxf). February 8, 2011 [Epub ahead of print]. doi: 10.1111/j.1365-2265.2011.04002.x.

BACKGROUND

In the past 20 years there has been a marked evolution in the treatment of well-differentiated intrathyroidal papillary and follicular carcinomas. Treatment has become less aggressive and, particularly, the indications for complementary treatment with radioactive iodine (radioactive iodine remnant ablation [RAA]) have been restricted. The general attitude is described in the guidelines published by the American and European Thyroid Associations (1, 2). Because of the slow progression of most of these cancers, it is difficult to foresee their natural course and to appreciate the true beneficial value of any of the proposed therapeutic approaches. Many of the recommendations are based on expert opinion rather than on facts. The therapeutic approaches for intermediate-risk thyroid cancers, defined as those having a diameter of <4 cm and the absence of microscopic extrathyroidal or intrathyroidal invasion and cervical lymph-node metastases, are particularly subject to personal opinion and experience. The authors of this article have adopted, during the past 40 years, a particularly conservative approach, consisting, in appropriate cases, of thyroidectomy alone or even lobectomy (more precisely, lobectomy and isthectomy) not followed by RAA.

METHODS AND RESULTS

Lobectomy was performed for tumors of <4 cm with no lymph-node involvement and with a normal contralateral thyroid lobe. Total thyroidectomy without RAA was performed in selected tumors of <4 cm with minimal or no clinically apparent lymph nodes and/or microscopic intrathyroidal or extrathyroidal extension and with thyroglobulin serum levels of <10 mg/L. The presence of lymph nodes was evaluated preoperatively by ultrasound. During the operation no systematic central-neck dissection was performed. Follow-up examinations were performed after 6 months and yearly thereafter. Evidence for recurrent disease was evaluated by ultrasound and in cases of a suspicious finding on cytologic study of lymph nodes, by radioactive scans and 18fluorodeoxyglucose– positron-emission tomographic (FDG-PET) scans.

Clinical

THYROIDOLOGY

Of 289 consecutive patients, 217 (75%) had total thyroidectomy and 72 (25%) had lobectomy. In 55% of cases, the primary tumor was >1 cm in diameter; microscopic extrathyroidal extension was found in 10% and microscopic intrathyroidal extension in 6%. For both groups of interventions, the status of the lymph nodes was 68% N0, 7% N1a, and 2% N1b. In 23 cases, the lymph-node status could not be identified (Nx).

As expected, thyroglobulin levels were low after thyroidectomy and not interpretable after lobectomy.

With regard to tumor size, only 13.5% of the cases were stage T3; the rest were smaller. Nevertheless, 26% of all cases were considered intermediate-risk cases, of which 79% underwent total thyroidectomy and 21% lobectomy.

In 2.3% of thyroidectomized patients, recurrence of the disease was found during the relatively short follow-up period of 4 to 6 years. After lobectomy, reintervention was performed more frequently (9%), but recurrence was confirmed in only 4.1%. Recurrent disease was treated by operation and RAA.

CONCLUSIONS

This article adds interesting information concerning patients with intermediate-risk thyroid cancers. According to the guidelines, in 55% of the patients *continued on next page*

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who had a thyroidectomy, RAA would have been considered by most thyroidologists. With only 2.1% of thyroidectomized patients having recurrence or persistence of the disease, the results can be considered excellent. After lobectomy, the reinterventions were relatively high (9%) but tumor was found in only 4.1%. The intermediate-risk group of both thyroidectomized and lobectomized patients represented 53% of all patients, many of whom would have been treated elsewhere with RAA after the primary intervention. In both surgical groups, only one patient was not cured after the secondary intervention and there was no mortality.

The results for low-risk patients are in accordance with the current opinion on this subject. More interesting are the results in the intermediate-risk patients, for whom the guidelines leave treatment to the discretion of the physician, with agreement by the patient. It is likely that intermediate-risk patients with tumors >2 cm in diameter and perhaps microscopic intrathyroidal or even extrathyroidal extension would have been treated with RAA in other centers because this facilitates the follow-up through the use of ultrasound evaluation and thyroglobulin levels. Also a 9% reoperation rate in patients with lobectomy cannot be disregarded, even though tumor was found in only 4%. There is no way to know if the two patients who were not cured after the second intervention would have benefited from an initial more aggressive attitude.

The patients with successful lobectomy will, however, be grateful since they avoided not only RAA but also lifelong treatment with thyroid hormone substitution. In addition, some publications suggest that in patients treated with radioactive iodine there is an increased incidence of secondary tumors, particularly of the lymphatic and colorectal systems (3, 4). These observations were obtained with much higher doses of radioactive iodine than are currently used. Doubt persists, however. The physician must therefore balance the potential benefit of treating such patients with completely resected thyroid plus RAA versus lobectomy or thyroidectomy without RAA. The decision is an individual one, and the patient needs to be fully informed.

— Albert G Burger, MD

References

- 1. Cooper DS, Doherty GM, Haugen BR, Kloos RT, Lee SL, Mandel SJ, Mazzaferri EL, McIver B, Pacini F, Schlumberger M, et al. Revised American Thyroid Association management guidelines for patients with thyroid nodules and differentiated thyroid cancer. Thyroid 2009;19:1167-214.
- Pacini F, Schlumberger M, Dralle H, Elisei R, Smit JW, Wiersinga W. European consensus for the management of patients with differentiated thyroid carcinoma of the follicular epithelium. Eur J Endocrinol 2006;154:787-803.
- 3. de Vathaire F, Schlumberger M, Delisle MJ, Francese C, Challeton C, de la Genardiere E, Meunier F, Parmentier C, Hill C, Sancho-Garnier H. Leukaemias and cancers following iodine-131 administration for thyroid cancer. Br J Cancer 1997;75:734-9.
- 4. Rubino C, Adjadj E, Doyon F, Shamsaldin A, Abbas TM, Caillou B, Colonna M, Cecarreli C, Schvartz C, Bardet S, et al. Radiation exposure and familial aggregation of cancers as risk factors for colorectal cancer after radioiodine treatment for thyroid carcinoma. Int J Radiat Oncol Biol Phys 2005;62:1084-9.