Follicular thyroid carcinoma in patient with Graves’s disease: A case report

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Case Report

Abstract

Thyroid carcinoma found in patient surgically treated for Graves’ disease is rare and it is almost always papillary cancer when it occurs. We report an extremely rare case of follicular thyroid carcinoma arising in a female patient with a diffuse toxic goiter. She presented with typical clinical and biochemical features of Graves’ disease. Tc-99m scintigraphy of the thyroid showed diffusely increased uptake with hypofunctioning (cold) nodule. Histopathologic examination of the resected thyroid proved the cold nodule to harbor follicular carcinoma. The TSH-stimulated serum Tg level measured by radioimmunoassay and thyroid stimulating antibodies (TSAbs) were increased. The incidence of thyroid carcinoma in Graves’ disease and the possible carcinogenic role of thyroid immunoglobulins is discussed.

Keywords: Graves’ Disease; Follicular Thyroid Carcinoma

Introduction

Thyroid carcinoma incidentally found in patient subjected to surgery for hyperthyroidism is not uncommon, and it is almost always papillary cancer when it occurs. Follicular cancer has a very low incidence in Graves’ disease when compared to papillary thyroid cancer. Some studies have not reported any follicular cancer in patients with Graves’ disease. We describe a rare occurrence of follicular cancer in a patient with Graves’ disease.

Case presentation

We report the case of a 45-year-old woman who presented to our institute with symptoms of thyrotoxicosis. She had no family history of thyroid cancer or of radiation exposure in the neck area. She presented with typical clinical and biochemical features of Graves’ disease. Tc-99m scintigraphy of the thyroid showed diffusely increased uptake with hypo-functioning (cold) nodule. She underwent uneventful surgery after achieving a euthyroid state with carbimazole. Intra-operative findings were: enlarged thyroid lobes, a solid nodule measuring 3.2 x 1.0 cm in the lower pole of the right lobe and an enlarged right lymph node. A total thyroidectomy was performed. The enlarged lymph node was resected. A follicular thyroid carcinoma was diagnosed on the cold nodule and the lymph node showed metastatic deposits of follicular carcinoma. Six weeks after surgery, the patient was given an ablative dose of Iodine-131 (131I). 131I scintigraphy revealed a significant residual thyroid remnant in the neck (Figure 1). The TSH-stimulated serum Tg level measured by radioimmunoassay was 17ng/ml. Also, thyroid stimulating antibodies (TSAbs) was increased. Being sensitive to iodine, patient has received 5 cures of 131I to get to complete remission.

FIG. 1: 131I whole body scintigraphy (a/ anterior, b/ posterior) shows an increased cervical uptake corresponding to residual thyroid remnant in the neck.
Discussion

The incidence of thyroid cancer in hyperthyroid patients has variability in different forms of hyperthyroidism, namely multi-nodular toxic goiter, solitary nodular toxic goiter and Graves’ disease. Thyroid cancer has been reported by Gabriele et al.3 and Chao et al.4 to be found in 2% - 7% of surgically treated hyperthyroid patients. The follicular variant has a very low incidence in Graves’ disease when compared to papillary thyroid cancer as mentioned by Chou.5 Some studies3 have not reported any follicular cancer in patients with Graves’ disease. Kasuga et al.6 and Kraimps et al.7 reported very low occurrence of follicular cancer despite the considerable incidence of papillary cancer in Graves’ disease patients. Radioactive iodine therapy, which has been known to be a risk factor for the development of differentiated thyroid carcinoma in Graves’ disease, has also been reported by Staffurthl et al.8 to lead to a very low incidence of follicular cancer. The pathogenic relationship of thyroid cancer with Graves’ disease is controversial. Some authors9-10 suggest that thyroid stimulating antibodies (TSAbs) might have a role in the carcinogenesis in Graves’ disease. It has also been suggested that TSBs are associated with more advanced stage and less favourable outcome of differentiated thyroid carcinoma in Graves’ disease patients.3 According to the study of Zdoúan et al.11, the influence of these immunoglobulins in genesis of thyroid malignancy remains speculative and further work is required to substantiate and delineate the role of these antibodies in thyroid carcinogenesis.

Conclusion

Our case emphasizes the importance of careful search for malignancy in nodules associated to Graves’ disease. Follicular thyroid cancer as well as papillary cancer should be kept in mind and total thyroidectomy after achieving a euthyroid state, should be the treatment of choice for Graves’ disease with nodules.

Conflict of interest

The authors declare that they have no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

References


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