Turkish Journal of Endocrinology and Metabolism, (2002) 4 : 155-157 **CASE REPORT**

Follicular Thyroid Carcinoma With Late Choroidal Metastases

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To report a case of thyroid follicular carcinoma with bilateral choroidal metastases. Follicular thyroid carcinoma is the second most common thyroid carcinoma. Distant metastases are not rare, but both globe and orbit metastasis secondary to follicular or other thyroid carcinomas are very rare.

A 54-years old woman was opearated for multinodular goitre however thyroid follicular carcinoma was confirmed with histologic examination. Although repeated radioiodine therapies, distant metastases progressed. Patient complained of sudden sight loss in the right eye and examination revealed metastatic tumors in both orbits.

The choroidal masses had the typical appearences of a metastatic lesion. Chemotherapy, ex ternal-beam radiotherapy to left eye and an urgent enucleation operation to right eye were planned

Thyroid follicular carcinoma can metastasize to choroid and it is, thus, suggestable that ophtalmologic controls be included in routine preoperative and postoperative clinical examinations of thyroid carcinoma patients.

Key words: Thyroid f ollicular carcinoma, bilateral, choroid, metastasis

Introduction

The most common types of thyroid carcinoma are papillary (76%), follicular (16%), medullary (5%), and anaplastic (3%). Nonspesific systemic signs of malignancy are more common with follicular (FTC) than papillary thyroid carcinoma, because between 5 to 20% of patients may have distant metastases at presentation (1). The most common sites for distant metastases in FTC are bones and lung (2). Uveal metastasis secondary to thyroid carcinoma is rare. To our knowledge, only seven cases of uveal metastasis of thyroid carcinomahave previously been reported; six cases were secondary to follicular or medullary, one case was secondary to papillary carcinoma, and in all cases metastases were unilateral (3-5). We report a case of bilateral uveal metastases secondary to follicular thyroid carcinoma.

Case

A 54-year-old woman was operated for multinodular goiter in Cerrahpasa Medical Faculty of Istanbul University, in 1993. Previous fine needle aspiration biopsies were reported to be benign, however pathologic examination of the frozen specimens revealed malignant carcinoma, and operation was turned to total thyroidectomy in the same session. Follicular carcinoma was reported in post-operative pathologic examinations and complete clinical surveys

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revealed multiple metastases in lungs. She received one course of 200 mCi radioactive iodine-131. Until 1997, she was followed by Endocrinology Division of Cerrahpasa Medical Faculty and later in different clinics. Medical records from Cerrahpasa Medical Faculty and other clinics were obtained. One year after the operation, a lump developed over the sternum and biopsy evaluation confirmed a primary metastasis of atypical follicular epithelial cells showing nuclear pleomorphism. There were also multiple lung and liver metastases. As radioactive iodine uptake was high in the metastatic areas, she received a second course of 200 mCi radioactive iodine 131. From 1997 to October 2000, she received three additional radioactive iodine courses due to persisting metastases and high thyroglobulin levels. Six months after the last RAI course, she reported sudden loss of visual acuity and was examined in a private Ophtalmology clinic. Ocular ultrasound studies demonstrated bilateral choroidal masses. She was referred to Endocrinology Division of Medical Faculty of Ege University and was seen in May 2001. Complete clinical survey presented multiple metastases in lungs, liver, sternum, cranium, vertebrae and left femur. Biopsy from the mass, palpable beneath the scalp, at the vertex of the cranium, revealed malignant follicular epithelial cells, confirming thyroid follicular carcinoma metastasis. In ophtalmologic examination, visual acuity in left eye was 16/20 and 0/20 in the right eye. The patient correctly interpreted 11 of 11 Ishihara color plates with the left eye. Examination of the ocular adnexa manifested no abnormalities and extra-ocular motility was normal. No field defect was found in the left eye in the Confrontation visual fields. Pupillary afferent reflex was normal in left eye, totally absent in the right eye. Slit-lamp examinations were normal. Applanation tonometry measurements were normal in the left eye, but high in the right eye with a value of 25 mmHg. Fundus examination revealed metastatic masses in choroidal membranes of both eyes; the right one almost filling the half of the globe and surrounding the optic nerve, left one being relatively smaller than the right one, positioned to the center of retina. Ocular sonogram presented choroidal masses in both eyes (Figure 1). Since previous radioiodine treatments were of no observable benefit, systemic chemotherapy and external-beam radiotherapy to both eyes were planned. However the patient did not accept chemotherapy, hence was referred to Radiation Oncology Department for external-beam radiotherapy for right eye and for bone metastases. She also was prescribed latanoprost. After discharge from Radiation Oncology Department, she was unable to keep her scheduled appointments with the Ophthalmology and Endocrinology clinics probably due to her other systemic medical problems.

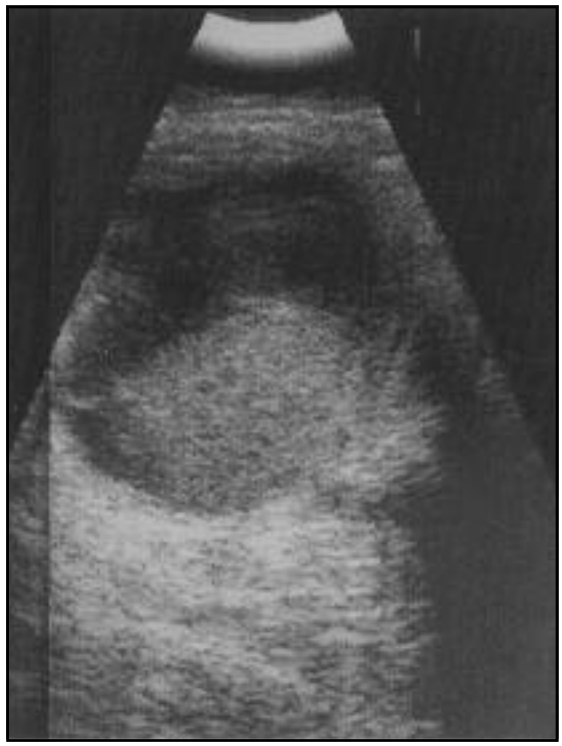

Figure 1. B-scan sonogram of the right eye, a mass of follicular carcinoma metastasis filling the globe.

Discussion

Papillary thyroid carcinoma is the most common thyroid malignancy and is thought to have an indolent course; lymphatic spread is the most common route of metastasis, although isolated cases of hematogenous spread have been reported (6). Eye metastasis is extremely rare with this malignancy with only one case in the literature (3). Follicular thyroid carcinoma is the second most common thyroid malignancy and hematogenic spread is the most common route of metastasis. It is well documented that distant metastases occur more frequently in follicular carcinoma, but eye metastasis is also very rare. Metastases from thyroid are more common to the

orbit than to the globe- a reverse of the pattern noted with tumors in general (7). In a survey of 420 patients (520 eyes) with uveal metastasis, thyroid cancer accounted only two cases (0.5%) (8). In literature search (PubMed), first reported patient of thyroid carcinoma with metastases to choroid membrane was a 9 year old girl (5). Diagnosis was made in search of an ocular mass of unknown origin and after enucleation operation. In another case (4), eye metastasis from follicular carcinoma was proven by fine needle aspiration biopsy. Patient was an old woman. She had no sight problems at presentation. Two courses of radioactive iodine was performed and local I^{125} plaque was applied. Patient's choroidal masses regressed although visual aquity did not improve. We did not intend to make a fine needle aspiration biopsy from uveal masses to confirm metastases of thyroid carcinoma as it was evident from the history and secondly due to incompliance of the patient. Similar approach was displayed by other authors (3). Although it is reported that eye metastases regress with RAI therapy (4), we did not give additional radioactive iodine as the patient did not benefit from the previous RAI courses. In the only one case of papillary carcinoma, chemotherapy with carboplatin and paclitaxel was tried with no clear benefit (3).

Data acquired from the previous reports and the present case, suggest that eye metastases of thyroid carcinoma are extremely rare and mostly develop extra-globally. Metastases may occur at any age and follow an insidious course. They are frequently encountered in the late course of the primary disease and at an advanced form. These metastases do not generally respond to either radioactive iodine or radiotherapy. Enucleation is another choice, but it is mostly preferred for advanced disease.

Given the fact that, about 6% of indiviuals in general population harbor microcarcinomas of the thyroid gland (9) and these carry a risk of metastasis, it is important to recognize that follicular thyroid carcinoma can metastasize to the uveal tract and it is thus suggestable that periodical eye examinations be included in routine post-operative clinical examinations, especially in cases with vast metastases. Likewise follicular carcinoma must be considered in the differential diagnosis of a uveal mass of unknown origin.

References

1. Grebe SKG, Hay ID. Follicular thyroid cancer. *Endocrinol Metab Clin North Am* **24:** 761-801, 1996.
2. Rosai J, Carganio ML, Delellis RA. Tumors of the Thyroid Gland. Washington DC: Armed Forces Institute Of Pathology. 1992, 1-343.
3. Ahmadi MA, Nicholes D, Esmaeli B. Late choroidal metastasis secondary to papillary thyroid carcinoma. *Am J Ophthalmol* **132:** 796-798, 2001.
4. Ritland JS, Eide N, Walaas L, Hoie J. Fine-needle aspiration biopsy diagnosis of a uveal metastasis from a follicular thyroid carcinoma. *Acta Ophthalmol Scand* **77:** 594-596, 1999.
5. Stangl R. Thyroid carcinoma metastases in choroid membrane of a 9 year old girl. *Ophthalmologica* **175:** 175-179, 1977.
6. Strate SM, Lee EL, Childers JH. Occult papillary carcinoma of the thyroid with distant metastases. *Cancer* **54:** 1093-1100, 1984.
7. Slamovits TL, Mondzelewski JP, Kennerdell JS. Thyroid carcinoma metastatic to the globe. *Br J Ophthalmol* **63:** 169-172, 1979.
8. Shields CL, Shields JA, Gross NE, Schwartz GP, Lally SE. Survey of 520 eyes with uveal metastases. *Ophthalmology* **104:** 1265-1276, 1997.
9. Fransilla K. Is the diferentiation between papillary and follicular thyroid carcinoma valid? *Cancer* **32:** 853-864, 1973