Choroidal metastasis as a rare feature of papillary thyroid carcinoma

A Sauer*, D Gaucher, T Bourcier, C Speeg-Schatz

Abstract

Introduction
Choroidal metastasis is a very rare clinical manifestation of thyroid cancer. The goal of our work is to report a case of late choroidal metastasis from papillary thyroid carcinoma.

Case report
A 59-year-old woman who had been treated for papillary thyroid carcinoma 3 years earlier presented for evaluation of vision loss in the right eye. A fundoscopic examination revealed a choroidal mass which had the typical characteristics of a metastatic lesion. After exclusion of any other neoplastic lesion, metastatic lesion from papillary thyroid carcinoma was diagnosed. The patient was treated with a combination of brachytherapy and chemotherapy. Despite this treatment, the patient complained about two other metastatic lesions (lung and hip) a few months later.

Conclusion
Papillary thyroid carcinoma can metastasise to the choroid many years after the initial diagnosis.

Introduction
It has been over a century since Perls described the first case of choroidal metastasis. For the next six decades only 230 cases were described in the literature. Uveal metastasis from carcinoma is the most common cause of ocular malignancy in adults and represents an increasing problem in the context of an ageing population and enhanced survival of stage IV cancer patients. The reported prevalence of clinically evident uveal metastases in carcinoma patients ranges from 2% to 9%, with breast and lung cancer together accounting for between 71% and 92% of cases. Choroidal metastasis is a very rare clinical manifestation of thyroid cancer. We report a case of uveal metastasis secondary to papillary thyroid carcinoma.

Case report
A 59-year-old Caucasian woman who had been treated for papillary thyroid carcinoma 2 years earlier was referred to the Department of Ophthalmology of Strasbourg University Hospital (France) in October 2008 for evaluation of visual loss in the right eye. The medical history of the patient was significant for the diagnosis of papillary thyroid carcinoma in May 2005. She had undergone a total thyroidectomy and left cervical node dissection and had received two courses of radioactive iodine 131 treatment after her thyroid surgery. She had no recurrence until 2005 assessed by normal iodine 131 scintigraphy. The ophthalmologic examination from the initial presentation (October 2008) was recorded. The visual acuity was Snellen 20/50 Parinaud 28 in the right eye (Snellen 20/20 Parinaud 2 in the left eye). A dilated fundus examination had revealed a large elevated mass in the right eye (Figure 1). The patient correctly interpreted 11 of 11 Ishihara colour plates with the right eye and 11 of 11 Ishihara colour plates with the left eye. Examination of the ocular adnexa revealed no abnormalities, and extraocular motility was normal. Confrontation
visual fields were full in the left eye, but a large central defect was found in the right eye. Findings on slit-lamp examination and applanation tonometry measurements were within the normal limits.

An ocular sonogram showed a choroidal mass with irregularly high internal reflectivity. Optical coherence tomography (Carl Zeiss Meditec Inc., Dublin, California, USA) examination revealed the presence of a slit of the neuroepithelium. A radioactive iodine uptake study showed significant uptake in the area of eye metastasis. Therefore, the decision was made to treat the patient with radioactive iodine. A few months later, a radioactive iodine uptake study showed two new metastasis (right lung and left hip). Two days later, secondary to a fall, the patient broke her left neck of femur. Days later, secondary to a fall, the patient broke her left neck of femur. Histopathological analysis of pathological bone confirmed the diagnosis of papillary carcinoma metastasis. At the time of this report, the patient is still alive and has several courses of iodotherapy planned. The findings in the both eyes remain unchanged.

Discussion

Ocular metastases secondary to thyroid cancer are extremely uncommon. Of 227 cases of uveal metastasis, Ferry and Font reported one case from the thyroid cancer, while Shields et al. found the thyroid a primary cancer site in two of 420 patients with uveal metastasis. A literature search (Medline) showed 14 reported thyroid cancers metastasising to the eye; primary papillary carcinoma has been reported only twice before. Uveal metastasis secondary to thyroid carcinoma is rare. The most common types of thyroid carcinoma are papillary (70%), follicular (15%), anaplastic (5%) and medullary (3%)2,4. Papillary carcinomas are prone to metastasise to the regional lymph nodes (about 40% of cases), while haematogenous spread occurs in only 15% of patients with papillary thyroid carcinoma. The follicular carcinomas usually metastasise via haematogenous routes. Medullary carcinomas are equally likely to spread to the regional lymph nodes or adjacent blood vessels. These features most likely explain the higher frequency of follicular and medullary thyroid carcinomas reported as the primary sites of uveal metastases compared to papillary carcinomas. To our knowledge, only a few cases of uveal metastasis caused by thyroid carcinoma have previously been reported, most of them were secondary to follicular or medullary carcinoma, and only a few secondary to papillary carcinoma2,4.

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 haematogenous spread have been reported. The characteristic orange-pink colour of choroidal metastases from thyroid (in contrast to the frequently described cream-coloured lesions), is due to macrophages laden with lipofuschin pigment released from damaged retinal pigment epithelial cells. We also observed an orange-pink mass in our patient. It initially misled us to consider the lesion clinically as a haemangioma or melanoma. The ultrasonography and the MRI helped us arrive at the final diagnosis.

Conclusion

Given the fact that 6%–63% of individuals in the general population harbour microcarcinomas of the thyroid gland, many of which are papillary carcinomas, it is important to recognise that papillary thyroid carcinoma can metastasise to the uveal tract. Papillary thyroid carcinoma should be considered in the differential diagnosis of a uveal mass of unknown origin.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

References