

Bilateral choroidal metastases as the initial presentation of breast carcinoma

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Abstract

A 64 year old female presented with a right eye visual impairment. On examination, the visual acuity was decreased on the right side. Slit lamp examination showed bilateral non-pigmented choroidal lesions. Physical examination was unremarkable; bilateral mammogram, however, showed a mass in the left breast, the biopsy from which confirmed the lesion as infiltrative carcinoma. Other tests were normal apart from the isotope bone scan which showed evidence of metastatic disease. She received a short course of radiotherapy to both eyes as well as a 6-month course of chemotherapy. At 6 months follow-up, the choroidal lesions were no longer present and the visual acuity had stabilized. Choroidal metastasis as the initial presentation of breast carcinoma is unusual. Any patient with an ocular tumour should undergo a systemic check-up to rule out an underlying malignancy

Introduction

A 64 year old female patient attended the ophthalmologist with a right eye visual impairment of 2 weeks duration, associated with photopsia (bright lights in the field of vision). Her past medical history included myopia, hypertension, depression and excision of a benign breast cyst 25 years earlier. On examination, the visual acuity was 6/18 (right eye) and 6/6 (left eye). Of note, there was a night visual field scotoma. On slit lamp examination, there was a right-sided non-pigmented, elevated mass inferior to the right macula measuring 12.1 mm length by 2.7 mm width and a smaller non-pigmented mass superior to the left fundus. She was referred to the medical team to check for primary malignancy elsewhere. Physical examination was unremarkable. Bilateral mammogram, however, showed a spiculated mass in the upper outer quadrant of the left breast. Computed tomography (CT) of the abdomen showed two small lesions in the right lobe of the liver, CT guided percutaneous biopsies confirmed the lesions as benign liver adenomas. CT brain was normal. Colonoscopy and oesophago-gastroduodenoscopy (OGD) were normal. Isotope bone scan showed increased uptake in the left fourth and fifth ribs anterolaterally, left sacro-iliac joint, in 1 mid-thoracic vertebra, third lumbar vertebra and on the right side of the vault; features consistent with metastatic disease. Tumour markers (CA15.3, TPS, CA19.9, CEA) were normal. Chest x-ray was normal apart from some unfolding of the thoracic aorta.

The patient underwent mammographically guided needle localization and excisional biopsy of the breast mass; histology revealed a 1.5 cm diameter infiltrating carcinoma of mixed ductal and lobular features, oestrogen and progesterone receptors were strongly positive. Subsequently, she underwent left mastectomy and axillary clearance. Five out of 17 lymph nodes were replaced by metastatic adenocarcinoma.

She was given a short course of radiotherapy to both eyes: 20 Gray in 5 fractions. She also received a 6-month course of CMF (cyclophosphamide, methotrexate, 5-fluorouracil) chemotherapy.

At 6 months follow-up, the lesions were no longer visible but radiation scars were noted. Visual acuity had stabilized at 6/9 (right eye) and 6/9 (left eye) and no choroidal recurrences were seen. She complained of early morning peri-orbital puffiness, probably secondary to radiation damage to the lymphatic system.

Discussion

The incidence of breast carcinoma metastases to the choroids is about 26-37%, whereas the incidence for metastases of all systemic malignancies is about 10%¹. Over 90% of breast cancer patients with choroids metastases have already received treatment for their primary tumour by the time of diagnosis of choroidal disease². It has been estimated that the mean interval between the presentations of the two pathologies is three years¹. Five per cent of patients with breast cancer metastatic to one organ have been found to have asymptomatic choroidal metastases; when two organs are involved, the incidence of asymptomatic choroidal metastases increases to 11%³. In analysis of 227 cases of metastatic carcinoma to the eye and orbit, the breast was the most common primary cancer (90 cases); in 8 cases, however, the diagnosis of the primary cancer was delayed for a period between 1 month and 30 months after the appearance of the metastatic disease⁴. The report does not state whether any of the primary breast cancers was palpable or not at the time of late diagnosis. One case report in the literature does describe choroidal metastases as the initial presenting complaint of a primary breast carcinoma⁵. In that particular case, however, examination showed a palpable breast lump. In our case, there was no evidence on clinical examination of the breast tumour. To our knowledge, this is the first reported case of an impalpable breast carcinoma presenting as choroidal metastases.

Most ocular tumours metastasize from systemic origin, breast carcinoma in females and bronchial carcinoma in males being the commonest primary sites⁵, although malignant melanoma is a major differential diagnosis which tends to be brown or black while carcinoma metastases are white in colour⁶. Other primary sites include gastrointestinal tract, maxillary sinus and malignant lymphoma⁷.

Breast carcinoma differs from other malignancies in its propensity to develop multiple metastatic eye deposits⁸. Comparison of single versus multiple deposits, however, showed no survival difference. Bilateral choroidal metastasis occurs in 40% of cases, and the remainder is equally divided among right and left eyes¹.

The presentation of our patient tends to be typical of choroidal metastases: decreased visual acuity over a short period of time, visual field scotomas and photopsia. Decreased vision and pain are the most common presenting complaints (80% and 20% respectively)⁴. Patients with choroidal metastases in whom the visual acuity is not affected can be maintained on medical treatment¹. Otherwise, external beam radiation therapy is an efficient palliative treatment as it helps to preserve the vision⁹ and improves the patients quality of life¹⁰. Other indications for irradiation of the eye include choroidal metastases that are rapidly enlarging despite systemic therapy or choroidal metastases that are associated with retinal detachment¹. Potential complications include cataracts, retinopathy and glaucoma¹¹. Enucleation is generally reserved for patients with persistent pain. The mean survival rate of patients with ocular metastasis from systemic malignancies is poor (5 months) despite external radiation and chemotherapy¹².

Although choroidal metastasis from breast carcinoma as an initial presentation is quite rare, a patient who presents with an ocular tumour should undergo a thorough systemic check-up and be evaluated diligently. In the management of such cases, the possibility of an underlying malignancy should be considered. Metastatic breast disease is ultimately beyond cure; the use of chemotherapy and radiotherapy can ameliorate distressing eye symptoms, and possibly avoid enucleation of the affected eyes.

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