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Choroidal metastasis- First sign of breast carcinoma recurrence

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Abstract: Intraocular metastases are the most common malignancy of the eye but yet it is rarely seen. We report a case of choroidal metastases from treated invasive ductal carcinoma of the breast, course of the disease and current modalities of treatment. A 65-year-old female was diagnosed with left invasive ductal carcinoma of the breast in mid 2012. She underwent left radical mastectomy and chemotherapy. Patient was symptoms free for 2 years till she presented with sudden onset of painless blurring of vision on the right eye. On ocular examination, her right visual acuity was counting fingers with presence of relative afferent pupillary defect. Funduscopy examination revealed multiple white choroidal lesions temporal to fovea. Systemic examination showed that she had lung and liver metastases. Unfortunately, prior to commencement of chemotherapy patient succumbed to the disease.
Keywords: choroidal metastases, breast carcinoma, recurrence

INTRODUCTION

Choroidal metastases are the most common intra ocular malignancy in adult but yet it is rarely encountered in clinical practice. Apart from the lung, breast carcinoma commonly metastasize to the uvea and accounts for 39-49% of uveal metastases [1]. In view of rapid progression after diagnosis, survival period ranges from 10 to 23 months [2]. However, the course of the disease and the treatment modalities varies between patients. We present one patient who presented with choroidal metastases as the first sign of recurrence of breast carcinoma after the disease was treated and the patient was symptoms free for two years.

CASE REPORT

A 65-year-old female was diagnosed with left breast human epidermal growth factor receptor 2 (HER-2) positive invasive ductal carcinoma in mid 2012. She underwent a left radical mastectomy followed by radio-chemotherapy and had completed the treatment in December 2012. She was symptoms free for 2 years till she presented with sudden onset of painless blurring of vision on the right eye. Her right vision was counting fingers with presence of relative afferent pupillary defect whereas the left vision was 6/9. Anterior segment examination was normal in both eyes. Right funduscopy examination revealed multiple white choroidal lesions occupying a circumference of 2.5 disc diameter located 1.5 disc diameters temporal to fovea (Figure 1). B-scan showed an elevated irregular surface choroidal lesion about 3 mm elevation with medium internal reflectivity at the temporal region (Figure 2). Similar findings were seen within the right orbit on Magnetic Resonance Imaging (MRI) which showed hypo-intense choroidal lesion on T2 weighted image with absence of brain metastases (Figure 3). There was no similar lesion seen in the left eye.

Systemic examination showed there was no recurrence at the previous operative site and examination of other systems revealed normal findings. Patient was diagnosed to have right eye choroidal metastasis from treated invasive ductal carcinoma of the breast. She was arranged for fully work-up to rule out metastasis from other systems. Chest X ray showed multiple nodular lesions on the lung parenchymal. Abdominal ultrasound revealed liver metastases. Two weeks after the diagnosis of choroidal metastasis, she developed shortness of breath due to the presence of pleural effusion. Patient deteriorated drastically after the diagnosis of systemic metastasis and within a month she had succumbed to the disease prior to commencement of chemotherapy or any mode of treatment.

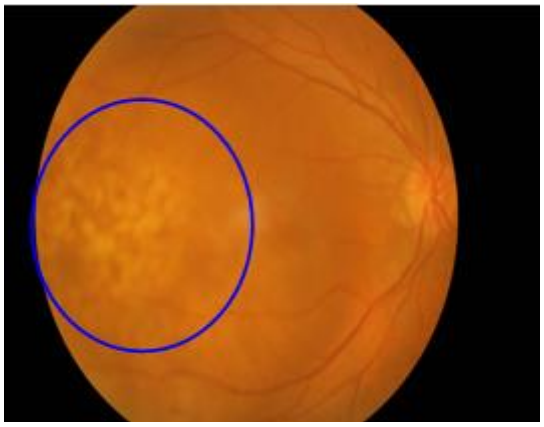

Fig- 1: Fundus photography of right eye showing multiple white choroidal lesions temporal to fovea.

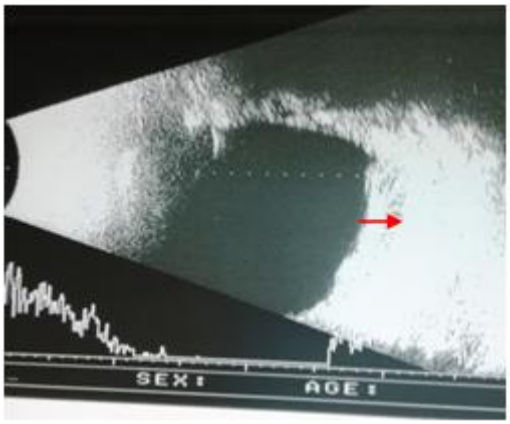

Fig-2: B-scan of right eye showing elevated choroidal lesion (3 mm elevation).

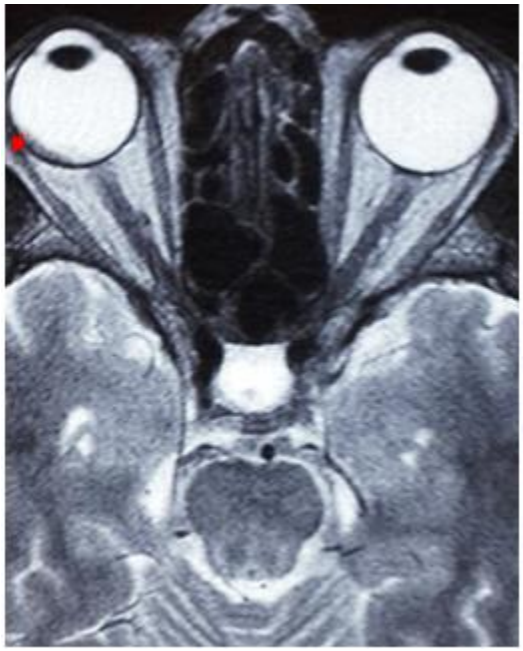

Fig-3: T2 weighted MRI showing right hypo intense choroidal lesion

DISCUSSION

Breast carcinoma with choroidal metastases is a rare but very aggressive condition. Studies have shown that lung and breasts are the most common primary site of choroidal metastases [3, 4, 5]. The incidence of choroidal metastases from breast carcinoma is 0-9.7% in clinical trials [3, 4] and up to 30% in histo-pathological analysis [5]. The metastases occur more frequently than it is clinically recognized because these ocular lesions are usually small and patients are quite often asymptomatic till very late stages in the disease. However, choroidal metastases as the first clinical presentation of breast carcinoma recurrence are indeed very rare. Up to date, there's only few such reported case and the incidence of asymptomatic choroidal metastases recurrence is 0-5% [4, 6].

The clinical presentation of choroidal metastases is usually blurring of vision or metamorphopsia or some patients remain asymptomatic. In this patient she presented with painless blurring of vision. Choroidal metastases are yellow in colour, plateau shaped and often associated with sub-retinal fluid. In this patient, there was no sub-retinal fluid and the lesions appear to be multiple in a cluster. Ultrasonography shows medium to high internal reflectivity with irregular internal structures as seen in this patient.

Based on literature, fundus angiography finding on choroidal metastases usually shows initial choroidal blockage and late phases reveals combination of diffuse leaks and pin point leaks [6]. Other investigations such as optical coherence tomography (OCT) may shows surface overlying choroidal metastases as undulating with thickening of the retinal pigment epithelium along with overlying sub-retinal fluid [7]. MRI shows well-demarcated choroidal mass that appears iso-intense on T1 weighted images and hypo intense on T2 weighted images as seen in this patient [8].

Currently, there are various methods of treatment for choroidal metastases which include radiotherapy, chemotherapy, laser photocoagulation, photodynamic therapy, and transpupillary thermotherapy. Lately, the use of anti-vascular endothelial growth factor (VEGF) has shown promising effects. Several studies done showed successful treatment of choroidal metastases with intravitreal anti-VEGF therapy [8, 9, 10]. The use of monoclonal antibody therapy for HER 2 positive cancers has also shown effective results [11]. However, the choice of treatment should be tailored according to the type of primary tumour, extend of choroidal metastases, laterality of the tumor, clinical condition of patient and prognosis. However, in this patient, the disease progression was too rapid for her to receive any treatment.

CONCLUSION

Ophthalmologists and health care physicians need to be aware of the potential for a choroidal metastasis when diagnosing a patient with a past history of treated breast carcinoma, as asymptomatic choroidal metastases can still occur years after treatment of primary carcinoma.

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