

Blindsided: A Rare Case of Symptomatic Choroidal Metastasis in Breast Cancer

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Introduction

Choroidal metastases (CM) are the second most common intraocular malignancy in the adult population and are associated with systemic disease and poor prognosis. Breast cancer is the most common primary source of CM. We report a rare case of symptomatic CM in a patient 6 years after initial diagnosis and remission of breast cancer.

Case summary

Clinical presentation:

A 62-year-old woman presented with sudden onset, painless right eye visual impairment for 3 days. She described seeing a dark spot at the center of her visual field. This was associated with blurring of vision and intermittent frontal headache.

Past medical history:

Triple-negative left breast infiltrating ductal carcinoma 5 years ago
Underwent surgery and chemoradiotherapy
Completed 5 years of oral Tamoxifen
Follow-up surveillance showed no evidence of disease relapse

Slit-lamp examination revealed right eye choroidal elevation with basillary layer detachment.

Magnetic resonance imaging (MRI) of the brain and orbit demonstrated right posterior globe focal thickening, favouring choroidal metastasis.

Computed tomography thorax-abdomen-pelvis (CT TAP) confirmed the presence of metastases to the lungs, bone, and mediastinal lymph nodes.

Radiotherapy, palliative chemotherapy and immunotherapy was initiated.

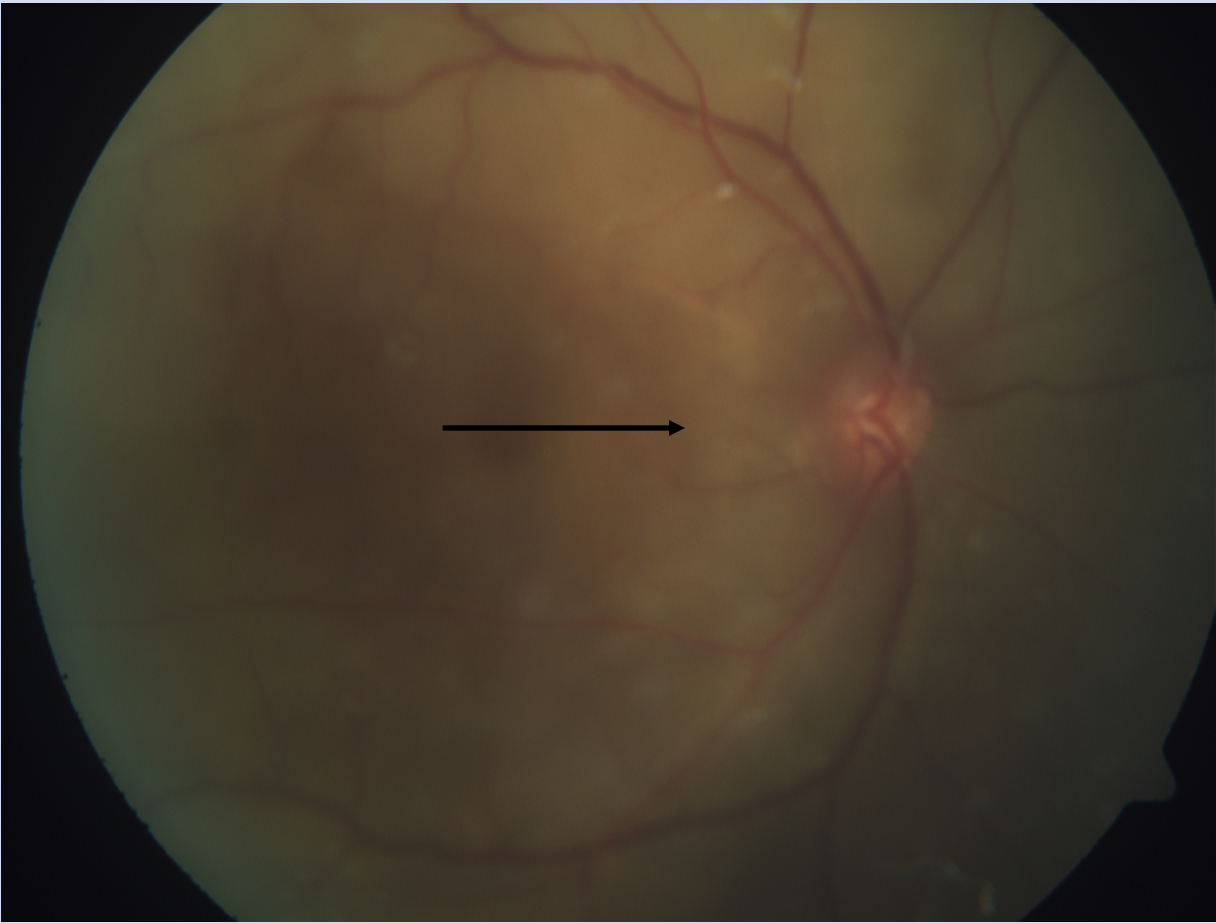


Fig 1. Slit lamp examination showed yellowish deep subretinal lesions involving the posterior pole, extending to the arcades (**arrow**)



Fig 2. MRI of the brain and orbit demonstrating right posterior globe thickening favouring choroidal metastasis (**arrow**)

Discussion

Metastatic carcinoma is the second most common malignant lesion in the eye with breast cancer being the most common malignancy to metastasize to the eye.

According to Shields et al, the most common primary tumour site was the breast (47%) with the choroid involved in 88% of cases (**1**). It is hypothesized that the rich vascularization of the choroid provides an avenue for haematogenous dissemination and an environment conducive for growth (**2**).

The reported incidence of ocular metastases from primary breast cancer varies widely among different studies, ranging from 5-27% in series (**3-5**).

The most common presentations are (**2**):

- Blurred vision or decreased visual acuity.
- Flashes and floaters
- Visual field defects
- Photophobia and pain

CM generally appear as a ‘creamy yellow subretinal mass often with a secondary subretinal detachment’ on slip lamp ophthalmoscopy (**1**). This clinical appearance is pathognomonic and often the first sign of metastatic disease (**6**). In a study by Kreusel et al., CM was the first sign of metastatic disease in 32% of patients (**7**).

Treatment depends on the patient’s systemic status, and the multifocality and laterality of lesions; and options include:

- Chemotherapy
- Immunotherapy
- Hormone therapy

External beam radiation therapy (ERBT) is commonly used for solitary lesions and has been shown to promote regression of lesions, improve vision, and prevent secondary glaucoma and pain (**9**).

In our patient, ERBT was introduced early to preserve vision. Hormonal therapy and immunotherapy were initiated with the intention of delaying the progression of systemic disease.

Conclusion

Breast cancer patients can develop ocular metastases although it is rare and unexpected.

It is often the initial sign of metastasis and an indicator of poor prognosis, signaling the need for systemic surveillance.

It should be an index of suspicion in breast cancer patients who present with progressive visual symptoms.

References

1. Shields CL, Shields JA, Gross NE, Schwartz GP, Lally SE. Survey of 520 Eyes with Uveal Metastases. Ophthalmology. 1997;104(8):1265-76.
2. Arepalli S, Kaliki S, Shields CL. Choroidal metastases: Origin, features, and therapy. Indian Journal of Ophthalmology. 2015;63(2):122-7.
3. Bloch RS, Gartner S. The Incidence of Ocular Metastatic Carcinoma. Archives of Ophthalmology. 1971;85(6):673-5.
4. Mewis L, Young SE. Breast Carcinoma Metastatic to the Choroid: Analysis of G7 Patients. Ophthalmology. 1982;89(2):147-51.
5. Wiegel T, Kreusel KM, Bornfeld N, Bottke D, Stange M, Foerster MH, et al. Frequency of asymptomatic choroidal metastasis in patients with disseminated breast cancer: results of a prospective screening programme. British Journal of Ophthalmology. 1998;82(10):1159.
6. Jang RW, Doherty M, Hopkins JJ, Warner E. A case of prolonged disease-free survival in a patient with choroidal metastasis from breast cancer. Nature Clinical Practice Oncology. 2009;6(2):118-21.
7. Kreusel K-M, Bechrakis NE, Krause L, Wiegel T, Foerster MH. Incidence and clinical characteristics of symptomatic choroidal metastasis from breast cancer. Acta Ophthalmologica Scandinavica. 2007;85(3):298-302.
8. Cortes J, Rugo Hope S, Cescon David W, Im S-A, Yusof Mastura M, Gallardo C, et al. Pembrolizumab plus Chemotherapy in Advanced Triple-Negative Breast Cancer. New England Journal of Medicine. 2022;387(3):217-26.
9. Demirci H, Shields CL, Chao A-N, Shields JA. Uveal metastasis from breast cancer in 264 patients. American Journal of Ophthalmology. 2003;136(2):264-71.