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Unusual Case of Secondary Glaucoma: Uveal Metastasis from Breast Cancer

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Abstract **Case Report**

***Introduction*:** Uveal metastasis is the most common form of intraocular malignancy. Most uveal metastais occur in the posterior uvea, and iris metastasis are relatively rare. They may present as stromal nodules or ill-defined iris thickening, or they may be associated with atypical features such as pain or iridocyclitis. ***Objective and Methodes*:** We report the case of a 54-year-old patient whose ophthalmological examination revealed a relapse of her neoplastic disease. We emphasize the importance of a detailed medical history and a systematic general examination to establish an accurate diagnosis in the presence of any suspicious iris lesion that could be life-threatening. ***Results*:** A 54-year-old female presented with pain and blurred vision in her left eye. She had breast cancer, which was treated 4 years earlier with mastectomy, lymphadenectomy, and systemic chemotherapy. Ocular examination revealed a best corrected vision of 20/40 in the right eye and 20/20 in the left eye. Full extraocular motion was observed. The right pupil was slowly responsive to light, with 5 × 3-mm pinkish-white mass from 8 to 11 o'clock with intrinsic friable vessels. There was an intense anterior chamber inflammation with 3+/4+ cells associated with increased IOP. Fundus examination revealed large choroidal mass occupying the temporal quadrant. The magnetic resonance imaging (MRI) revealed thickness on iris of the right eye associated with choroidal metastasis and multiple brain metastasis. The patient was referred to oncology for reassessment, a general extension workup revealed also secondary pulmonary metastasis. Chemotherapy was initiated, but unfortunatlly the patient passed away 4 months later. ***Conclusion*:** This is a rare case of iris metastases associated with chroidal metastais from breast carcinoma. The rapid presentation should alert the clinician to suspect metastases in any unusual anterior segment lesion.

Keywords: Breast Neoplasms, Choroidal Neoplasms, Iris Neoplasms, Uveal Neoplasms.

INTRODUCTION

Uveal metastasis of systemic carcinoma to the eye is estimated to occur in 8% of cases [1], this rate varies according to the primary tumor site and the degree of systemic control. In 2014, Shields *et al*., [2], reported their 40-year experience of 104 cases of iris metastases arising from systemic cancer, demonstrating the breast, lung, and skin as the most common primary sites for such lesions. Uveal metastases occur far more frequently in the choroid than in the iris, possibly due to the substantial blood supply to the posterior choroid by the posterior ciliary arteries [3]. Metastatic tumors to the iris are relatively uncommon; they may present as stromal nodules or ill-defined iris thickening, or they may be associated with atypical features such as pain and iridocyclitis, which was the case of our patient.

CASE REPORT

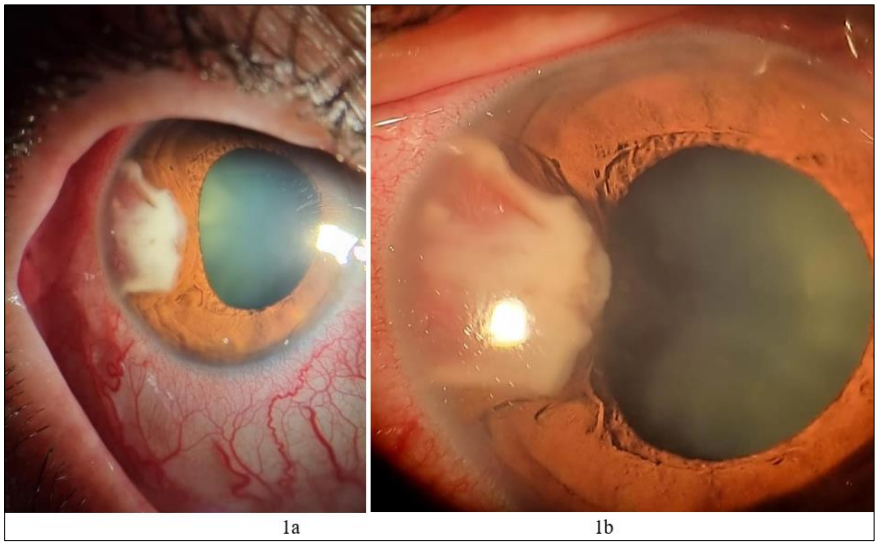
A 54-year-old female presented with acute pain and blurred vision in her left eye. She had breast cancer, which was treated 4 years earlier with mastectomy, lymphadenectomy, and systemic chemotherapy. Ocular examination revealed a best corrected vision of 20/40 in the right eye and 20/20 in the left eye. Full extraocular motion was observed. The right pupil was slowly responsive to light, with 5 × 3-mm pinkish-white mass from 8 to 11 o'clock with intrinsic friable vessels **(Figure 1).** We noted an intense anterior chamber inflammation with 3+/4+ cells associated with high IOP. Gonioscopic examination revealed no tumor extension into the angle of the right eye but with heavier pigment than in the fellow eye. Fundus examination revealed large choroidal mass occupying the temporal quadrant

(Figure2). The anterior segment and fundus examination of the fellow eye was normal.

B-scan of the right eye showed a single plateau shaped temporal lesion highly reflective with approximatly 4mm thickness, associated with slight serous retinal detachment **(Figure3).**

CT scan showed a semi-lunar elevation of the temporal retina with irregular lumpy anterior surface with marked enhancement **(Figure 4).** The MRI revealed at the cerebral level the presence of two suspicious intra-parenchymal lesions in the left temporal region, which enhance in a ring-like pattern after contrast injection, and a third lesion of the pituitary stalk with the same characteristics as the previous two lesions. At the ocular level, there was a right temporal choroidal tissue infiltrate which shows homogeneous enhancement after contrast injection, extending 13 mm anteroposteriorly and measuring 3.5 mm in maximum thickness **(Figure 5**).

The diagnosis in the present case was made clinically with slitlamp biomicroscopy with the knowledge of the patient's medical history of malignancy, and aided by CT scan and MRI findings. Through several detailed discussions, the patient and ophthalmologist decided that an invasive biopsy would not necessarily add new information and would be unlikely to change management. The patient was referred to oncology for reassessment, a general extension workup revealed also secondary pulmonary metastases. Chemotherapy was initiated, but unfortunatlly the patient passed away 4 months later.



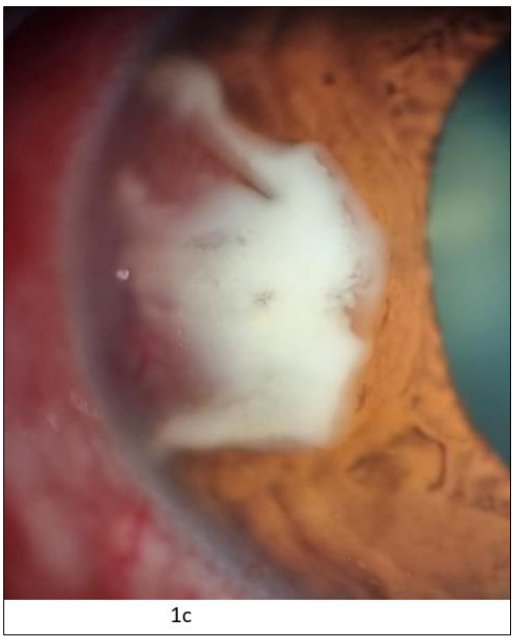


Figure 1 a,b,c : Photography demonstrating a 5 × 3-mm pinkish-white mass of the iris from 8 to 11 o'clock with intrinsic friable vessels in the right eye

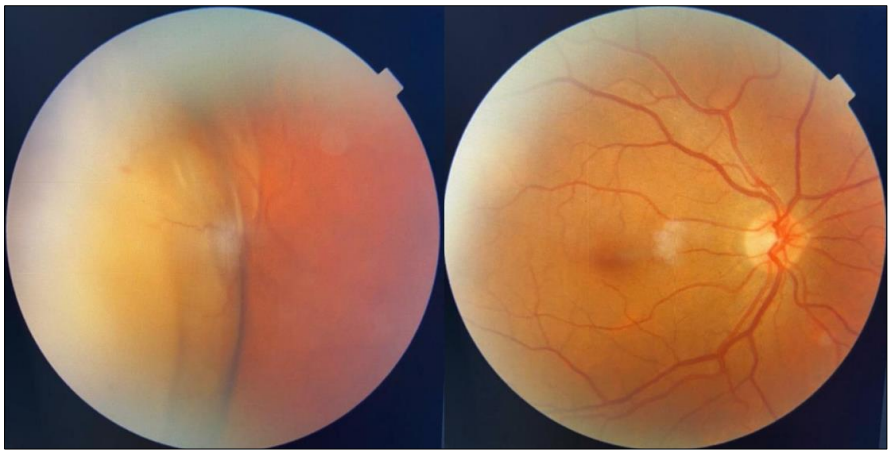


Figure 2: Fundus photography showing a normal posterior pole, but note the suspicious choroidal elevation in the temporal quadrant

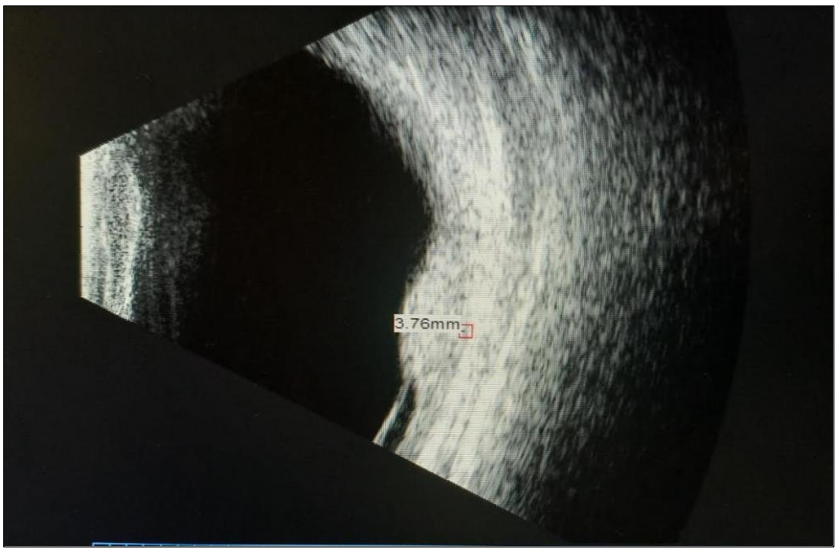


Figure 3: B-scan of the right eye showing a single plateau shaped temporal lesion highly reflective with approximatly 4mm thickness, associated with serous retinal detachment

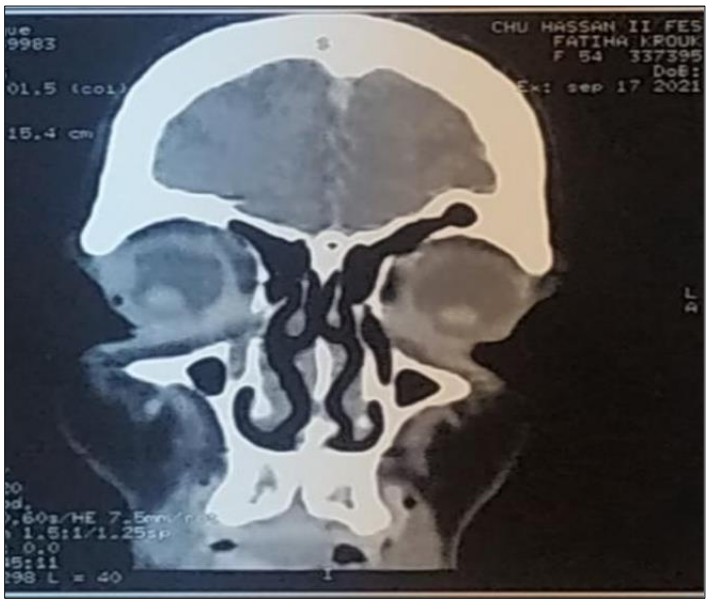


Figure 4: CT scan showed a semi-lunar elevation of the temporal retina of the right eye

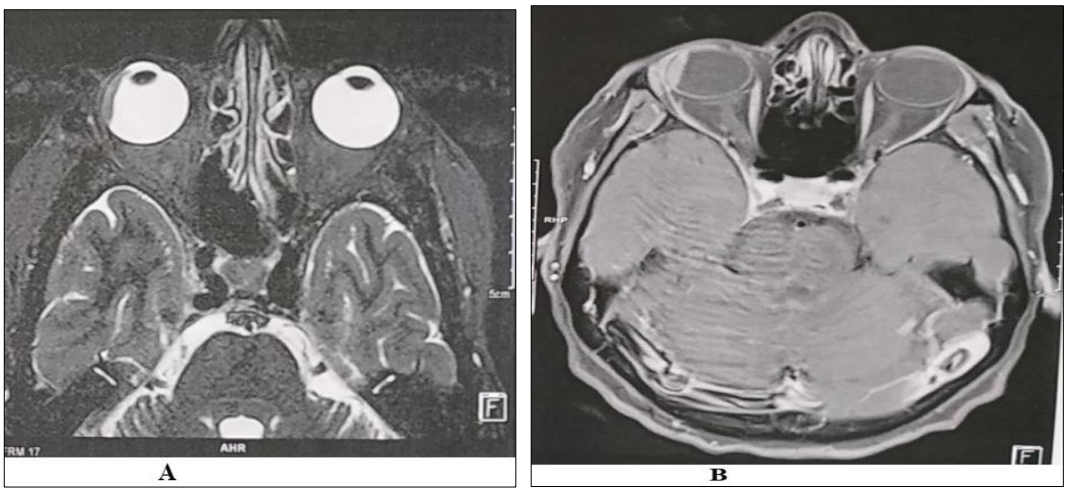


Figure 5 a,b: MRI showing a **right temporal choroidal tissue infiltrate which homogeneous enhancement after contrast injection**

DISCUSSION

With the population ageing, the overall incidence of cancer continues to rise and, as the treatment options are improving, the mortality rates from cancer are declining. Therefore, it is likely that patients with uveal metastases will be increasingly encountered. The first case of choroidal metastasis (CM) was documented by Perls in 1872 [4]. Although CM have long been considered a rare entity, they are now known to be the most common intraocular malignancy and up to 10% of patients with metastatic cancer have intraocular involvement [5]. The choroid is the most common site of the uveal tract involved by metastases because the hematogenous dissemination of tumor emboli from remote sites often leads to choroidal vasculature [6]. Most choroidal metastases (CM) originate from breast cancer in women and lung cancer in men.

Blurred vision occurs in 55–70% of eyes and is often related to macular or juxtapapillary retinal involvement or due to foveal exudative retinal detachment .In our case, the blurred vision was related to the anterior chamber tyndall, and the pain was explained with iridocyclitis and the high IOP.

Iris metastasis can show a spectrum of clinical variations, but its features are generally distinctive enough to differentiate it from other intraocular neoplasms and inflammations. The characteristic features of an iris metastasis can be summarized as a solitary, friable, yellow-white or fleshy mass that frequently liberates tumor cells into the anterior chamber, which can simulate an inflammatory process and lead to secondary glaucoma, which fit typically the description of the iris lesion of patient.

As for choroidal metastasis, they generally appear as creamy white or pale yellow masses associated with subretinal fluid (SRF). Their appearance can be either flat or plateau shaped, but there are rare descriptions of CM that are mushroom shaped as result of Bruch's membrane rupture.

The diagnostic tests include Ultrasonography (US), a useful tool required to evaluate tumor size, shape, and location and to estimate reflectivity, internal structure and degree of vascularization.

Few published works have specifically explored the topic of Ultrasonography (US) in choroidal metastasis, mainly focusing on metastases in general and their differences with choroidal melanoma, without deepening the specific US appearance in relation to the primary cancer site. Identifying US biomarkers correlating with the primary cancer site appears to be of particular interest, especially because ultrasound is a non-invasive technique.

On B-scan US, choroidal metastasis appear mainly plateau-shaped, less frequently dome-shaped, and rarely mushroom-shaped; on A-scan US, choroidal metastasis generally reveal high or medium reflectivity, with an internal V-shaped pattern for thicker metastases, internal vascularization is usually minimal or absent and serous retinal detachment is often detected [7].

Shields *et al*., [8], reported that choroidal metastasis from the breast are plateau-shaped in 80% of cases, whereas choroidal metastasis from lung cancer are plateau-shaped in 56% of cases and dome-shaped in the remaining 44%.

In our case, the choroidal metastasis was plateau shaped consisting with the literrature ‘s findings. MRI is more sensitive and specific than CT in the detection of intraocular tumors : CT typically demonstrates a soft tissue lesion with marked enhancement, while in MRI, the typical presentation of CM is semilunar choroidal lesion that appears isointense on T1-weighted images and hypo- or hyperintense on T2-weighted images. CM can be well-defined or

diffusely infiltrating in appearance. It usually shows homogeneous enhancement after contrast administration.

The treatment of choroidal metastasis depends on the systemic status, number of choroidal tumors, location, and laterality. Observation is preferred in patients with poor systemic status; systemic chemotherapy, immunotherapy, hormone therapy, or whole eye radiotherapy if the metastases are multifocal and bilateral; plaque radiotherapy, transpupillary radiotherapy, or photodynamic therapy (PDT) for solitary metastasis; and enucleation for blind painful eyes [9].

Patients with metastatic breast cancer have a poor prognosis. In a review of 1,581 patients with metastatic breast cancer under combination chemotherapy, 5-year relapse-free survival and survival rates were found to be 7% and 5%, respectively [10]. In those cases with ocular metastasis, the overall prognosis has been reported to be poor. In a review of 217 patients with metastatic tumors to eye and orbit, Ferry and Font [11], found that 89% of patients died at a mean follow-up of 7 months. In a more recent study, Merrill and associates [12], reported that the average survival time after the diagnosis of ocular metastasis was 32 months. In our case, uveal metastasis was associates with other systemic metastasis such as cerebral and pulmonary metastatsis which made the prognosis even worse and unfortunatlly, our patient passed away 4 months later.

CONCLUSION

Metastatic tumors to the uvea are an indisputably rare finding, but the judicious ophthalmologist should maintain a high index of suspicion for metastases when a new uveal lesion is discovered. The systemic prognosis for patients with iris metastasis is generally poor. Although there are isolated cases of long survival, it appears that most patients with iris metastasis die within two years because of widespread cancer. Since patients with various cancers live longer today, more cases of iris metastasis will probably be detected in the future, and ophthalmologists should be able to recognize this condition and refer the patient for appropri' ate diagnostic steps and treatment.

[1] Bloch RS, Gartner S. The incidence of ocular metastatic carcinoma. Arch Ophthalmol. 1971;85(6):673-5.
[2] Shields CL, Shields JA, Gross NE, Schwartz GP, Lally SE. Survey of 520 eyes with uveal metastases. Ophthalmology. 1997;104(8):1265-76.
[3] Shields CL, Kaliki S, Crabtree GS, Peshatani A, Morton S, Anand RA, et al. Iris metastasis from systemic cancer in 104 patients: The 2014 Jerry A. shields Lecture. Cornea. 2015; 34(1):42-8
[4] M. Perls. Beitrage zur geschwulstlehere .Virschows Arch, 1 (1872), pp. 437-467
[5] Bloch RS, Gartner S. The incidence of ocular metastatic carcinoma. *Arch Ophthalmol*. 1971;85: 673–675. 10.1001/archopht.1971.00990050675005
[6] Ferry AP, Font RL. Carcinoma metastatic to the eye and orbit. I. A clinicopathologic study of 227 cases. *Arch Ophthalmol*. 1974;92: 276–86. 10.1001/archopht.1974.01010010286003
[7] Ossoinig KC, Harrie RP. Diagnosis of intraocular tumors with standardized echography. Lommatzsh PK & Blodi FC (eds) *Intraocular tumors*. 1983;154–175
[8] Shields CL, Shields JA, Gross NE, Schwartz GP, Lally SE. Survey of 520 eyes with uveal metastases. *Ophthalmology*. 1997;104: 1265–76. 10.1016/s0161-6420(97)30148-1
[9] Kosmas C, Malamos NA, Antonopoulos M. Complete regression of choroidal metastases from breast cancer after docetaxel-based systemic chemotherapy. *Med Pediatr Oncol*. 2000;34:229–30.
[10] Greenberg PA, Hortobagyi GN, Smith TL, et al. Long-term follow-up of patients with complete remission following combination chemotherapy for metastatic breast cancer. J Clin Oncol 1996;14:2197–2205.
[11] Ferry AP, Font RL. Carcinoma metastatic to the eye and orbit. I. A clinicopathologic study of 227 cases. Arch Ophthalmol 1974;92:276–286
[12] Merrill CF, Kaufman DI, Dimitrov NV. Breast cancer metastatic to the eye is a common entity. Cancer 1991;68:623– 627.