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Choroidal Pseudomelanoma: Haemorrhagic Retinal Detachment Masquerading As Choroidal Melanoma

Dr Aatish Saraswat[a], Gp Capt (Dr) Deepti Mutreja[b], Maj (Dr) Ankita Singh[c], Dr Vrushali Raut[d]

[a] *Resident, Dept of Pathology, Armed Forces Medical College, Pune*
[b] *Professor, Dept of Pathology, Command Hospital Air Force, Bengaluru*
[c] *Asst Professor, Dept of Ophthalmology, Military Hospital, Bathinda*
[d] *Senior Resident, Dept of Pathology, Armed Forces Medical College, Pune*

ABSTRACT
Pseudomelanoma may refer to lesions that clinically simulate choroidal or ciliary body melanoma. These include certain benign and malignant conditions of retinal and choroidal origin like hamartomas of the sensory retina, hyperplasia of the retinal pigmentary epithelium (RPE), melanocytomas, hemorrhagic retinal detachment and melanocytic nevi, making the diagnosis of a choroidal melanoma a formidable task. If not taken care of, this diagnostic conundrum may lead to radical procedures such as enucleation. We report a case of a 70-year-old male who was clinically diagnosed with choroidal melanoma based on characteristic appearance with radiological evaluation and underwent an enucleation procedure. However, the subsequent histopathological examination of the enucleated eye revealed a hemorrhagic choroidal and retinal detachment with vitreous haemorrhage.

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I. INTRODUCTION

Choroidal melanoma, the most common ocular tumour, generally manifests features of an elevated, pigmented (85%), dome-shaped (75%), choroidal mass (90%) with subretinal fluid (71%). (1,2) Melanomas commonly occur during the sixth decade of life, with an increasing incidence as age progresses. (3,4) The differential diagnosis includes numerous conditions of retinal origin, retinal pigment epithelial origin, and choroidal origin. Atypical presentations of the tumour have been reported to occur. (5,6)

The rate of misdiagnosis of eyes enucleated for choroidal melanoma has significantly reduced over the last few decades due to diagnostic advancements and a low threshold for clinical suspicion [5,6]. In a study of 1,739 pseudomelanomas, the three most common conditions included choroidal nevus (49%), peripheral exudative hemorrhagic chorioretinopathy (8%), and congenital hypertrophy of the retinal pigment epithelium (6%). Choroidal haemorrhages represented only 2% of all pseudomelanomas in this series. Invasive studies with significant morbidity, like fine needle aspiration cytology (FNAC), may be considered if the diagnosis cannot be established by any other means. (7)

Due to specific benign and malignant clinical mimics like choroidal hematoma, haemorrhagic retinal detachment, hamartomas of the sensory retina, and hyperplasia of the retinal pigmentary epithelium (RPE), melanocytomas and nevi diagnosis of melanomas may become a herculean task(5).

We report a case of a 70-year-old male who was clinically diagnosed with a choroidal tumour based on characteristic appearance with radiological evaluation and further investigations raising the possibility of malignant melanoma and underwent an enucleation procedure. However, the subsequent histopathological examination of the enucleated eye revealed a hemorrhagic choroidal and retinal detachment with vitreous haemorrhage. This case highlights the importance of accurate diagnosis of benign intraocular tumours, which may lead to a more conservative treatment approach.

II. CASE REPORT

A 70-year-old male patient diagnosed case of Diabetes Mellitus Type 2 and Hypertension for the last ten years reported to the ophthalmology OPD of this tertiary care centre with complaints of sudden onset diminution of vision in the right eye for the past two weeks, preceded by a history of photopsia for one week. Patient gave history of cataract surgery both eyes 10 years back which was uneventful. There was no history of pain, redness, swelling in or around the eye, or headache. The patient gave no history of trauma.

Ocular examination revealed a visual acuity of hand movement close to face (HMCF) in the right eye and best corrected visual acuity (BCVA) 0f 6/9 in the left eye. Intra-ocular pressures were 12 mm Hg in the right eye and 14 mm Hg in the left eye. The anterior segment evaluation using slit lamp biomicroscopy of the right eye showed a sluggishly reacting pupil and pseudophakia with no evidence of rubeosis iridis. In contrast, the left eye did not reveal any abnormality. Dilated fundus examination of the right eye revealed a haemorrhage diffusely spread throughout the vitreous cavity. The posterior segment details could not be visualised due to the vitreous hemorrhage and media clarity grade 4. Fundus examination of the left eye was essentially within the standard limit. Combined A-mode and B-mode ultrasonography of the right eye revealed closed funnel retinal detachment and a dome-shaped subretinal mass with choroidal excavation having a thickness of 3 mm, a diameter of 7 mm and medium-to-low internal reflectivity (Figure 1). Contrast enhanced Magnetic resonance imaging (CEMRI) brain and orbit showed 5 X 3mm moderately low signal mass lesion lateral to optic nerve head with associated exudative retinal detachment as relatively high signal on T1 scan in the right eye with no evidence of extra scleral or orbital spread corroborating with the clinical diagnosis of localised intra- ocular choroidal melanoma. A computerised tomography scan (CT-scan) of the brain, Positron emission tomography (PET) scan, chest X-ray and liver ultrasound did not reveal any suggestive signs of metastasis. The complete blood count, erythrocyte sedimentation rate, and hepatic and renal functions were also within normal limits. Subsequently, the patient was counselled for enucleation, considering his age and underlying co-morbidities where in brachytherapy would not have been a suitable option; for which he consented. Enucleation of the right eyeball was performed given equivocal clinical and radiological findings suggestive of choroidal melanoma.

The enucleated eye was sent for histopathological examination (Figure 2), which reported hemorrhagic vitreous, retinal detachment, and a brownish area noted on the eyeball's temporal aspect. Sections revealed standard corneal and choroidal linings of the eyeball. No atypical or malignant cells were reported (Figure 3). This appearance was consistent with a choroidal hematoma due to localised hemorrhagic choroidal detachment and not a choroidal melanoma which was suspected on clinical examination, USG B-scan, and MRI-scan findings.

III. DISCUSSION

Various benign and malignant lesions mimic the clinical features of choroidal melanoma. (6,8) The existing data shows that nearly 20% of enucleated eyes with clinically diagnosed choroidal melanoma revealed features of benign lesions on histological examination. Recent studies, based on newer investigative modalities, have reported a diagnostic precision of up to 95% to 100%. (9) The Collaborative Ocular Melanoma Study Group (COMS) found only two false-positive cases in their study of 413 cases. (10)

In our case, USG B scan and MRI findings were consistent with small to medium choroidal melanoma. However, no extra scleral or orbital spread was noted on Magnetic resonance imaging (MRI), and Positron Emission Tomography (PET) scans. In the given clinical scenario, the possibility of localised choroidal hematoma outweighed the diagnosis of uveal melanoma, which was confirmed on histopathological examination. However, the salient features of malignant tumours, such as lipofuscin pigment and subretinal fluid, were absent. However, some recent reports suggest that these findings are non-specific and could be present in benign and malignant tumours. (11) Thus, enucleation was performed based on the concerted evaluation.

IV. CONCLUSION

This patient showed clinical features of choroidal melanoma. However, histopathological examination following an enucleation revealed its benign nature. Thus, choroidal hematoma due to choroidal detachment should be considered in the differential diagnosis of uveal tract tumours. A conservative approach can have a sight-saving effect and allow a stable quality of life for the patient.

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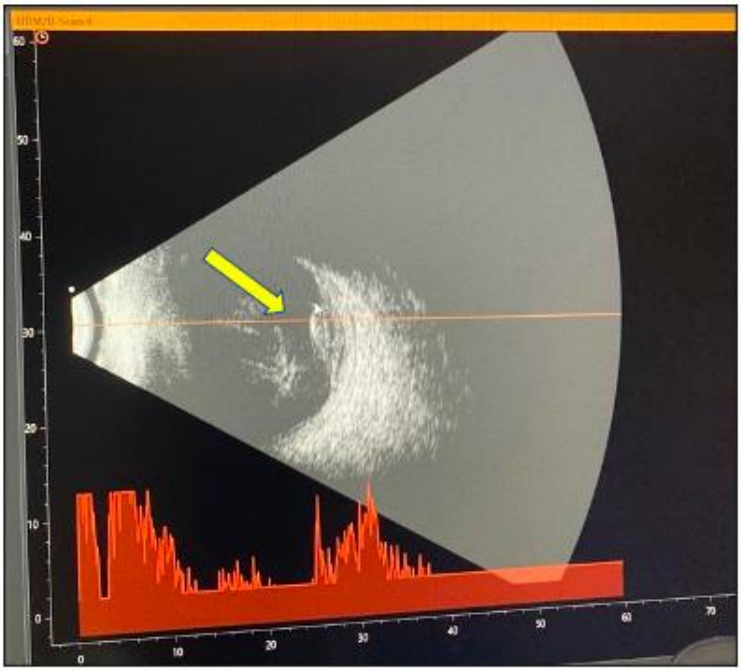

Figure 1. USG A & B Scan - Retinal detachment and a dome-shaped sub retinal mass with low internal reflectivity

Figure 2. Gross specimen of the enucleated eye showing hemorrhagic vitreous with Retinal detachment. No mass lesion visualized.

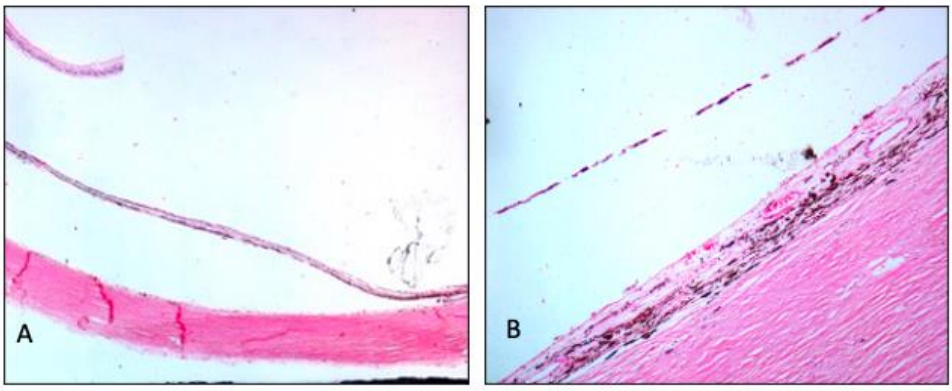

Figure 3. Microscopic sections of eyeball showing retinal detachment (Hematoxylin & Eosin stain – 100x , 400x)