International Journal of Healthcare Sciences ISSN 2348-5728 (Online)
Vol. 7, Issue 1, pp: (293-296), Month: April 2019 - September 2019, Available at: www.researchpublish.com

A suprachoroidal hemorrhagic lesion of medium-sized melanoma presenting with features of polypoidal choroidal vasculopathy

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***Abstract*: A 68-year-old man was referred to our tertiary eye hospital with a suspicion of choroidal melanoma in the left eye. Clinical examination showed a choroidal lesion with extensive subretinal hemorrhages. Next follow up visit showed a rapid decrease in the size of the lesion. The lesion was considered vascular in nature based on extensive hemorrhages and rapid variability in size. Later on, the lesion showed a slow grow up over time together with additional b scan findings that led to the final diagnosis of choroidal melanoma.**

***Keywords*: choroidal melanoma, choroidal hemorrhagic lesion, Polypoidal choroidal vasculopathy, masquerading melanoma.**

I. INTRODUCTION

Choroidal melanoma is the most common primary malignancy of the eye [1]. Patients may present with symptoms like decreased vision or visual field defect, or the lesion may be discovered accidently during routine eye examination. Clinically the lesion is seen as dome-shaped choroidal elevation with or without subretinal fluid. Classification include small melanomas (<10 mm in diameter and <3 mm in height), medium-sized melanomas (10 to 15 mm in diameter and 3 to 5 mm in height), and large melanomas (>15 mm in diameter and >5 mm in height) [2],[3].

Choroidal melanoma may present initially mimicking other conditions like scleritis [4], central serous chorioretinopathy [5], cystoid macular edema [6], and pan-uveitis [7]. In the other hand, some conditions may masquerade as choroidal melanoma at presentation, and choroidal hemorrhage represent 2% of these conditions [8]. The reported causes of choroidal hemorrhage simulating melanoma include idiopathic thrombocytopenic purpura [9], coughing-induced [10], peripheral exudative hemorrhagic chorioretinopathy [11], [12], and spontaneous hemorrhage [13]. In this case we report a choroidal hemorrhagic lesion that presented with clinical features of polypoidal choroidal vasculopathy and was followed for 14 months before concluding the final diagnosis of choroidal melanoma.

II. CASE REPORT

A 68-year-old man was referred to our tertiary eye care hospital [14] in June, 2018 with suspicion of choroidal melanoma in the left eye. The patient gave a history of gradual decreased vision in the left eye over the past year with no associated symptoms like pain, redness, or photophopia. He denied any history of trauma, ocular surgery, or inflammation. Systemic review revealed a history of diabetes and hypertension for 10 years and controlled on medications. Visual acuity assessment showed a 20/30 corrected vision in both eyes and intra ocular pressure was normal bilaterally. Anterior segment examination showed a clear cornea, quiet anterior chamber, and early nuclear sclerosis in both eyes. Dilated fundus examination of the right eye showed asteroid hyalosis in the vitreous, flat retina with normal vasculature and no detectable lesion. Left fundus showed clear vitreous with an elevated sub retinal lesion superior to the disc at the near periphery zone measuring around 8-disc diameter with associated sub retinal hemorrhage and inferior exudative retinal detachment (Fig. 1). Fundus fluorescein angiography demonstrated hypo-fluorescence at that area corresponding to blockage of background choroidal fluorescence by subretinal hemorrhage (Fig. 2). B scan ultrasound detected a choroidal

dome-shaped lesion measuring 4.01 mm in elevation and 5.99 mm in base (Fig. 3). The patient underwent systemic work up of a suspected melanoma including MRI orbit and brain, chest and abdominal CT and all came with no additional abnormal findings. Upon the next follow up 2 months later, fundoscopy showed decreased sub-retinal hemorrhages and ultrasound measurements were smaller than initial test (2.87 mm in elevation and 6.06 mm in base) (Fig. 4). Indocyanine green (ICG) angiography showed focal hyperfluorescent dots within the lesion (Fig. 5). These findings led to the impression of PCV lesion and the patient was planned for observation with periodic follow up and evaluation. Subsequent follow up visits showed a gradual increase in the size of the lesion with resolving most of the subretinal hemorrhages and fluid. Upon the last follow up visit on august 2019, the lesion measurements in b scan were 4.67mm in elevation and 7.64 mm in base (Fig. 6). The lesion was diagnosed to be medium-sized melanoma, the patient was sent again for systemic work up to rule out metastasis, and treatment options were explained to the patient together with referral to oncology center for further management.

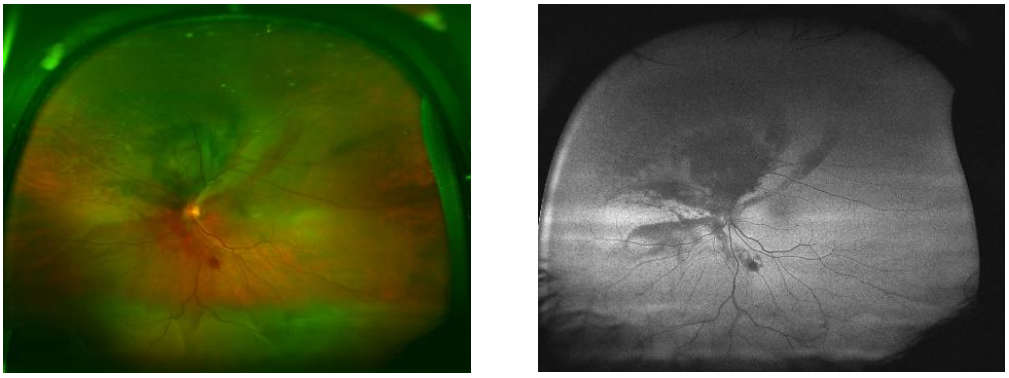

Fig. 1. Colored fundus photo (left) and fundus autofluorescence (right) showing the location of the lesion, the extension of subretinal hemorrhages, and the inferior exudative detachment.

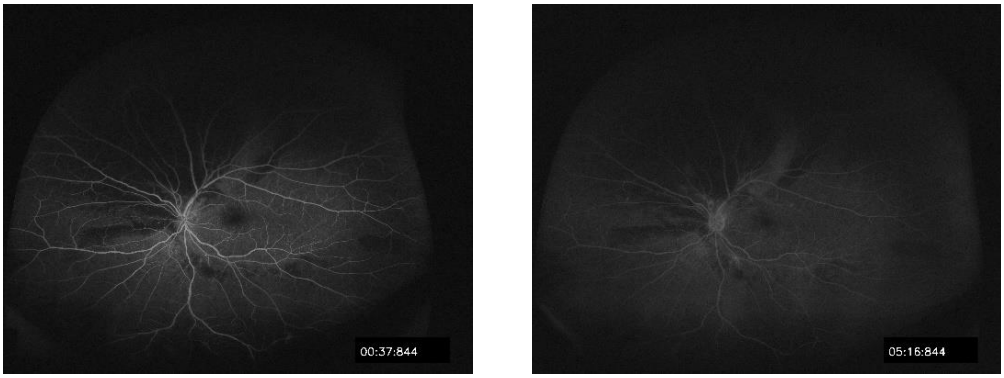

Fig. 2. Fluorescein angiographic frames at early/venous phase (left) and late phase (right) showing hypo-fluorescence at the area of the lesion corresponding to the blocked background fluorescence by hemorrhage.

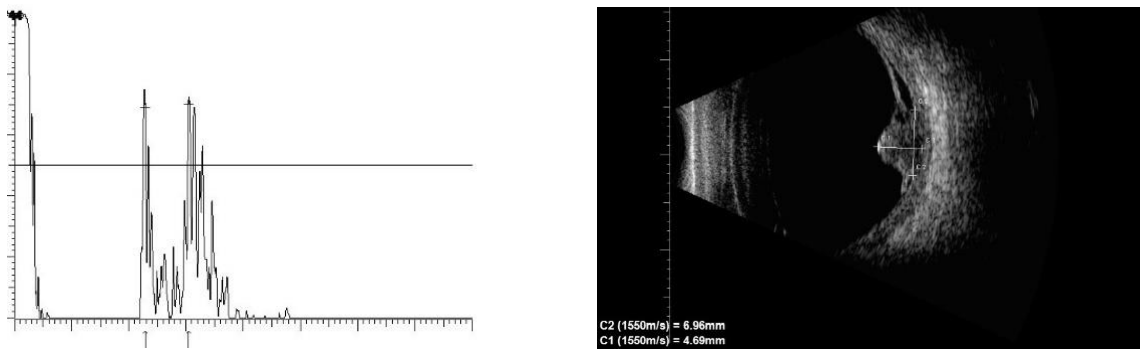

Fig. 3. A-scan (left) showing low internal reflectivity corresponding to the lesion. B-scan (right) showing the dimensions of the lesion.

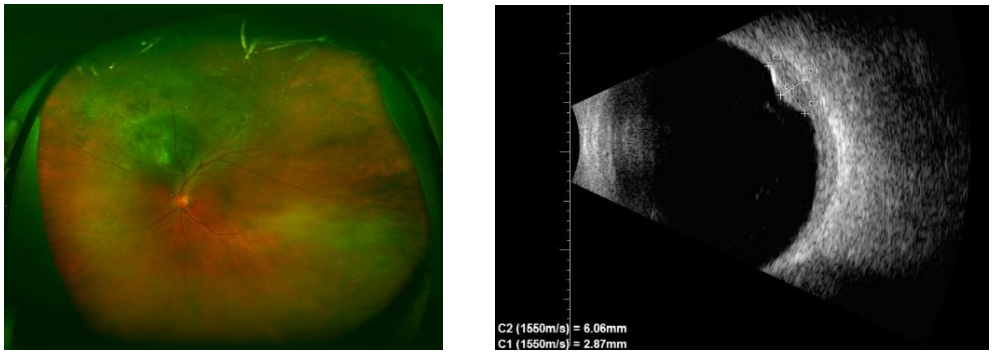

Fig. 4. Colored fundus photo (left) and b-scan (right) at follow up visit showing resolved subretinal hemorrhages and decreased lesion size.

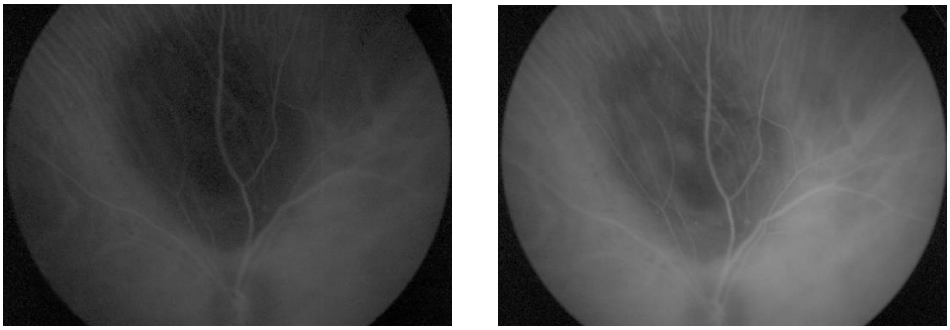

Fig. 5. ICG angiography at early phase (left) and late phase (right) showing focal hyperfluorescent spots within the lesion.

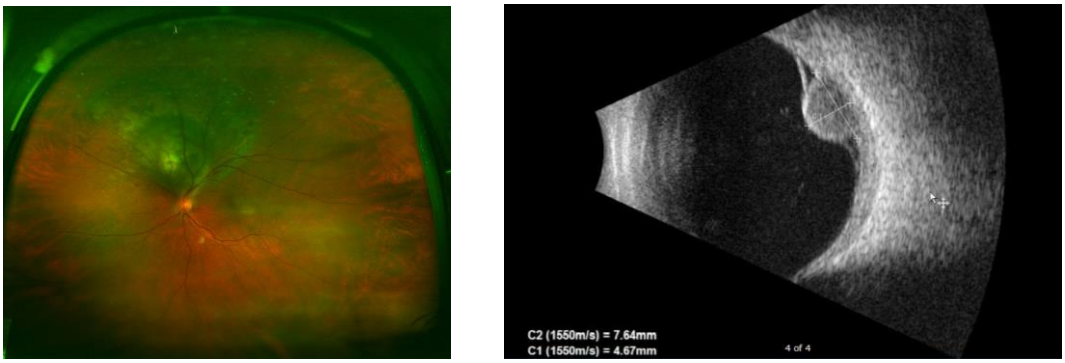

Fig. 6. Colored fundus photo (left) and b-scan measurements (right) at last follow up visit.

III. DISCUSSION

Polypoidal choroidal vasculopathy (PCV) is a primary abnormality of inner choroidal vessels characterized by multiple recurrent serosanguineous retinal pigment epithelial detachments secondary to the leaking thin-walled, dilated, polyp-like vascular lesions [15]. These polypoidal protrusions are manifested by minimal number of pericytes and thinning of the endothelial cells, while the specific cause of these manifestations remains a controversy [15]. Several local and systemic risk factors have been associated with PCV like choroidal thickening, Central serous chorioretinopathy, systemic hypertension, raised plasma viscosity, thrombocytopenia, obstructive sleep apnea, and cigarette smoking [15]. Demographic data have shown a fourfold increased prevalence among pigmented races comparing to white people, to be more commonly unilateral, and more prevalent in males with mean age at presentation 61.06 years [15]. Clinically, PCV is seen as an orange bulging lesions in the macula, peripapillary area, or mid periphery [15]. These lesions are not easily visible unless large enough, with flat overlying retina and with no media opacity like pre-retinal or sub-retinal hemorrhage.

At the first follow up of this patient, the choroidal lesion decreased in size rapidly together with the ICG findings of a focal hyperfluorescent dots that gave the impression of a benign lesion of PCV. Periodic monitoring of the lesion showed

a significant increase in the elevation of this choroidal lesion from 5.32 mm on June 2018 to 7.64 mm on August 2019, together with the finding of acoustic hollowness (an acoustic quiet zone at the base of the lesion) in the last tests as the lesion grew up. In 2009, Shields et al [16] modified their useful mnemonic for clinical features of choroidal melanoma to become "to find small ocular melanoma using helpful hints daily" which stands for thickness more than 2 mm (T), subretinal fluid (F), symptoms (S), presence of orange pigments (O), margin within 3 mm of the disc (M), ultrasound hollowness (H), absent halo (H), and absent drusen (D). 7 out of these 8 features were present in this case which made the diagnosis.

IV. CONCLUSION

Choroidal melanoma may present with atypical features that would delay the proper diagnosis and management. Carful inspection and monitoring of apparently benign hemorrhagic choroidal lesion would save the eye and even the life of such patients with underlying neoplastic nature.

ACKNOWLEDGMENT

Special thanks to dr. Yahya Alzahrani (consultant ophthalmology/ocular oncology at king Khalid eye specialist hospital, Riyadh, Saudi Arabia) for his assistance in managing this case and writing this case report.

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