

Choroidal Melanoma Camouflaged by Extensive Subretinal Hemorrhage

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PRESENTATION

A 61-year-old woman noted decreasing vision in her right eye over 5 months and was found to have a retinal detachment. The patient disclosed a history of hypertension and a heart murmur. Ocular history was unremarkable, and the patient denied ocular trauma or valsalva event. Medications included aspirin 81 mg daily.

EXAMINATION AND DIAGNOSIS

On examination, the visual acuity was hand motion in the right eye and 20/25 in the left eye. The intraocular pressures were normal. Fundus examination in the left eye was unremarkable. Fundus examination right eye revealed extensive subretinal hemorrhage underlying a non-rhegmatogenous detachment. Centrally, a circumscribed, multinodular yellow mass could be visualized, suggestive of choroidal tumor vs granuloma or dehemoglobinized blood (Figure 1A). By ultrasonography, the mass was solid, measuring 8.7 mm in thickness, and the overlying retinal detachment was confirmed (Figure 1B). By fluorescein angiography, the mass was hyperfluorescent with prominent intrinsic circulation ("double circulation") surrounded by hypofluorescence corresponding to the areas of subretinal hemorrhage (Figure 1C). Overall, it was estimated that the mass measured 12 mm in

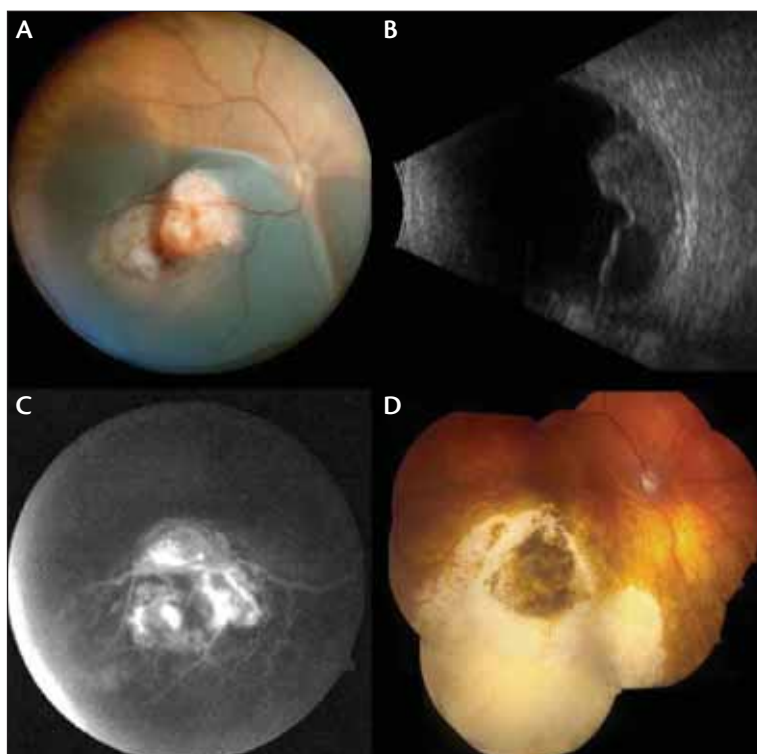


Figure 1. Extensive subretinal hemorrhage overlying an amelanotic mushroom-shaped choroidal melanoma. Fundus photos displaying dark hemorrhage with central melanoma protruding under the retina (A). B-scan ultrasonography confirming an 8.7 mm thick solid mass with overlying retinal detachment (B). Fluorescein angiography disclosing blockage by the subretinal hemorrhage, but the tumor shows hyperfluorescence with intrinsic circulation (C). Three years after plaque radiotherapy and thermotherapy, the tumor and hemorrhage have completely resolved to a flat scar (D).

diameter. These findings were most consistent with choroidal melanoma with extensive subretinal hemorrhage from a break in Bruch's membrane.

TREATMENT AND FOLLOW-UP

The choroidal melanoma was treated with I-125 plaque brachytherapy. At 4 months follow-up after radiotherapy, the subretinal hemorrhage had completely resolved. The tumor was further consolidated with transpupillary thermotherapy. At 3 years follow-up, the melanoma scar was completely regressed to a thickness of 1.9 mm (Figure 1D).

DISCUSSION

Uveal melanoma is the most common primary intraocular malignancy while affecting 6 per 1 million white adults in the United States.¹ Uveal melanoma can assume a variety of configurations. In an analysis of 8,033 cases, the tumor configuration included dome (75%), mushroom (19%), or flat (diffuse; 6%) shapes.² Uveal melanoma can appear pigmented (54%), nonpigmented (15%), or be of mixed pigmentation (30%).² Other features of melanoma include subretinal fluid (71%), Bruch's membrane rupture (21%), extraocular extension (3%), and vitreous or subretinal hemorrhage (10%).² In most instances, the rupture of Bruch's membrane leads to the mushroom configuration.

The ophthalmologist, and particularly the retina specialist, should be familiar with the various presentations of uveal melanoma.

In an eye with uveal melanoma, subretinal hemorrhage at presentation is usually due to Bruch's membrane rupture.¹ As the tumor enlarges in thickness, the elastic Bruch's membrane eventually splits and tumor egresses through the split into the subretinal space. This finding can be rarely witnessed during examination and scleral depression of an eye with uveal melanoma, so taking care to minimize globe indentation and pressure is advised. When rupture occurs, subretinal hemorrhage from the herniating tumor can be found.¹

Subretinal hemorrhage from uveal melanoma must be differentiated from more common conditions such as age-related macular degeneration (AMD) and ocular trauma. In a series on surgical management of submacular hemorrhages in 47 eyes, the underlying diagnoses included AMD in 39 (83%) eyes, ocular histoplasmosis in three (6%), angioid streaks in two (4%), retinal

arterial macroaneurysm in two (4%), and idiopathic in one (2%).³ Formation of choroidal neovascular membrane in AMD is the major predisposing factor for development of subretinal hemorrhage.⁴

With regard to uveal melanoma, subretinal or vitreous hemorrhage can signify increased risk for metastasis. In a multivariate analysis of 8,033 patients with uveal melanoma, subretinal or vitreous hemorrhage posed a borderline increased risk ($P=0.043$, relative risk 1.22) for metastatic disease.²

Treatment options for the case described above include enucleation or forms of radiotherapy.⁵ In this case, plaque radiotherapy to encompass the tumor base and thickness parameters as measured by ultrasoundography was performed. Within 4 months, the subretinal blood completely resolved, and the tumor showed complete regression to a flat scar by 54 months follow-up.

The ophthalmologist, and particularly the retina specialist, should be familiar with the various presentations of uveal melanoma. Patients with nontraumatic subretinal hemorrhage should be carefully evaluated for underlying malignancy. ■

Support provided by the Retina Research Foundation of the Retina Society in Capetown, South Africa (CLS); and the Eye Tumor Research Foundation, Philadelphia, PA (CLS). From the Ocular Oncology Service, Wills Eye Institute, Thomas Jefferson University, Philadelphia, PA.

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The authors have no financial interest in the devices or medications in this document.

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