Sclerochoroidal Calcification Resembling Choroidal Metastasis

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Sclerochoroidal calcification is an uncommon condition characterized by multiple placoid yellow-white subretinal lesions, typically located in the superotemporal mid-periphery of the fundus.[1] While most cases are idiopathic in nature, at times they can be attributed to underlying systemic disorders involving abnormal calcium-phosphorous metabolism, most notably hyperparathyroidism or renal tubular hypokalemic metabolic alkalosis syndromes.[1-3] We present a case of idiopathic sclerochoroidal calcification and provide recommendations for systemic evaluation.

CASE REPORT

A 68-year-old white man was referred for evaluation of an enlarging atypical lesion in his right eye, presumed to be an amelanotic choroidal melanoma. He had hyperlipidemia but denied having joint pains, skin or kidney diseases, Bartter or Gitelman syndrome, or ingesting calcium supplements. His diet consisted of moderate intake of yogurt and cheese. His serum calcium level at presentation was 9.9 mg/dL (normal 8.6-10.4), and potassium was 4.6 mmol/L (normal 3.5-5.5). Visual acuity was 20/25 in his right eye and 20/20 in the left eye. Slit-lamp examination of both eyes was unremarkable, and there was no evidence of Cogan scleral plaques in both eyes. Fundus examination of his left eye was unremarkable.

The fundus in his right eye displayed an amelanotic, yellow, lobular deep choroidal mass along the superotemporal vascular arcade, measuring 4 x 3 mm in basal diameter (Figure 1 A and B). Ultrasonography revealed a dome-shaped calcified lesion measuring 3.5 mm in thickness, with orbital shadowing on B-scan and high internal reflectivity on A-scan (Figure 1 C and D). Optical coherence tomography (OCT) showed an elevated choroidal lesion with no subretinal fluid (Figure 1 E). Amelanotic choroidal melanoma was in the differential diagnosis; however, absence of clinical symptoms, subretinal fluid, and the presence of an echodense, highly reflective lesion did not favor melanoma. The clinical features and the presence of ultrasonographic echodense calcium sug-

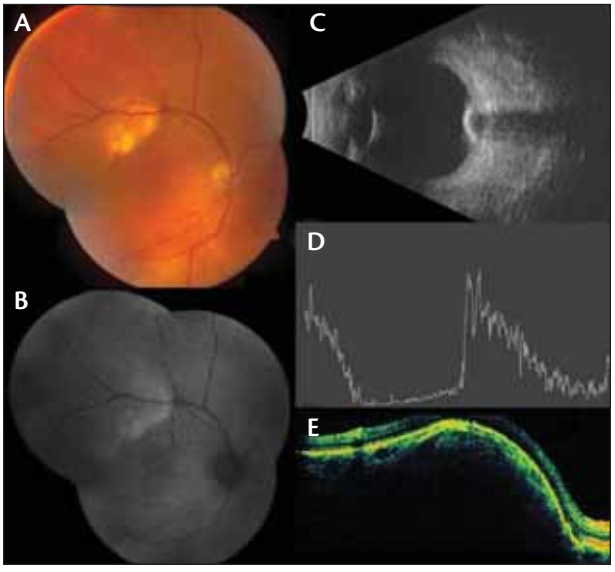

Figure 1. A 63-year-old white man with a yellow choroidal mass classified as sclerochoridal calcification (A) in the right eye with slight hyperautofluorescence (B), dense calcification and shadowing on B scan (C) and A scan ultrasonography (D), and dramatic elevation with no subretinal fluid on optical coherence tomography (E).

gested sclerochoroidal calcification. The patient was observed without treatment, and metabolic evaluation was advised.

Systemic metabolic evaluation included calcium 10.2 mg/dL (normal 8.6-10.4), phosphate 4.0 mg/dL (normal 2.1-4.3), potassium 4.9 mmol/L (normal 3.5-5.5), magnesium 2.0 mg/dL (normal 1.5-2.5), parathyroid hormone 32 pg/mL (normal 10-65), and calcitonin <2 pg/mL (normal <10), all of which were within the normal ranges.

DISCUSSION

Sclerochoroidal calcification is a benign intraocular lesion with presumed dystrophic calcium deposition within the sclera and ultimate effacement of the choroid, manifesting as a yellow choroidal mass.[4] It typically presents in older white patients (median age 70 years) and is characterized by multiple yellow-white lesions underlying the retina, superior to the superotemporal retinal vascular arcade of the mid-peripheral fundus.[1,5] There appears to be some debate in the literature regarding tumor laterality, as some studies report higher rates (59%) of unilateral presentation,[1] while others report higher occurrences (84%) of bilateral cases.[6] The calcification is believed to commence within the sclera and then secondarily involve and rarify the overlying choroid.[6] In reality, the calcific lesions are often only minimally elevated but can achieve tumorous proportions up to 6 mm.[6] The classic tumor location is between the superotemporal vascular arcade and equator; thus there is little to no effect on visual acuity or visual field, and patients are typically asymptomatic.[1] As in our patient, ISCC can be misdiagnosed as other choroidal lesions, including choroidal metastasis, melanoma, nevus, choroiditis, or osteoma.[1,5]

Although sclerochoroidal calcification generally requires no treatment, screening tests for calcium-phosphorous metabolism and primary renal tubular hypokalemic metabolic alkalosis syndromes are important. These tests are to rule out dystrophic or metastatic calcification due to pathologic conditions including hyperparathyroidism, hypomagnesemia, or inherited normotensive hypokalemic metabolic alkalosis, referred to as Bartter syndrome in children and Gitelman syndrome in adolescents and adults.[1-3] It is important to test patients with ISCC for these treatable systemic associations. The workup should include serum and urine levels of potassium, phosphorous, calcium, magnesium, parathyroid hormone, and calcitonin.[1,5] It is also important to investigate the use of diuretics, as these can lead to hypercalcemia and hypokalemia. It is unusual for patients to develop visual disturbances from ISCC, but twice-yearly follow-up is recommended, as related choroidal neovascular membrane and serous retinal detachment have been reported.[1,7]

In summary, we report a case of sclerochoroidal calcification with normal laboratory electrolytes, including serum calcium, phosphorus, potassium, and magnesium, and normal serum hormones, such as parathyroid hormone and calcitonin. We recommend screening tests for the aforementioned electrolytes and hormones in patients with this condition. ■

Supported in part by the Ocular Oncology Fund, Wills Eye Institute, Philadelphia, PA (CLS) and the Eye Tumor Research Foundation, Philadelphia, PA (CLS).

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

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