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A rare and unusual manifestation of choroidal osteoma

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Abstract: We present a case of choroidal osteoma in a 63-year-old man. Fundus examination revealed two yellowish-white lesions in the posterior pole. Ultrasonic B-scan echography showed two highly reflective lesions. Computed tomography also disclosed bone density lesions. Optical coherence tomography images of these lesions revealed hypo reflective with intrinsic hyper reflective dots. Choroidal osteoma is commonly a solitary lesion; our findings may contribute to a better understanding of this rare condition.
Keywords: choroidal osteoma, sclerochoroidal calcification, optical coherence tomography.

INTRODUCTION

Choroidal osteoma is a unique tumor that comprises mature bone in the circumpapillary or macular region [1, 2]. Choroidal osteoma usually presents in young women as a solitary yellow-orange calcified plaque [1, 2]. Herein, we present a rare and unusual case of choroidal osteoma in a 63-year-old man.

CASE REPORT

A 63-year-old Japanese man was referred to our clinic for ophthalmological examination of newly detected fundus lesion in the left eye. He had a history of central serous chorio retinopathy in his right eye that occurred at the age of 33 years. He had been follow-up as age-related macular degeneration in the left eye 4 years previously. Best corrected visual acuities were 0.7 for the right eye and 1.2 for the left eye, and intraocular pressure was 10 mmHg in both eyes. Slit-lamp examination showed cortical opacities in both lenses. Examination of the fundus of the right eye demonstrated atrophic discoloration at the level of retinal pigment epithelium (Figure 1A), while the left eye demonstrated two one-disc diameter yellowish-white lesions (Figure 1B arrows). In addition, synchysis scintillans was detected in the left eye. According to the information from the referral hospital, the lesion at the temporal to the fovea had been existed previously, while the lesion at the papillo macular region was emerged during follow-up period.

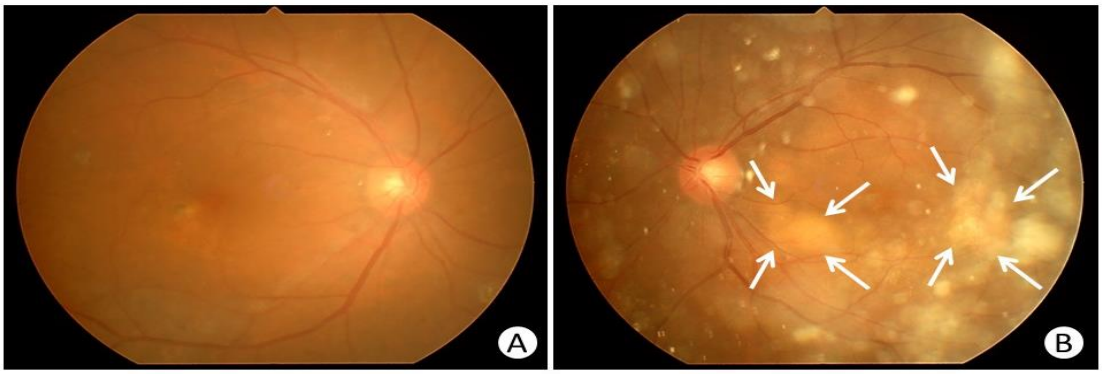

Fig. 1 Fundus photographs of the right (A) and left (B) eyes

Ultrasonic B-scan echography (UD-8000, TOMEY, Nagoya, Japan) showed two highly reflective lesions in the posterior pole (Figure 2).

Computed tomography (CT) also disclosed two bone density lesions in the left eye (Figure 3).

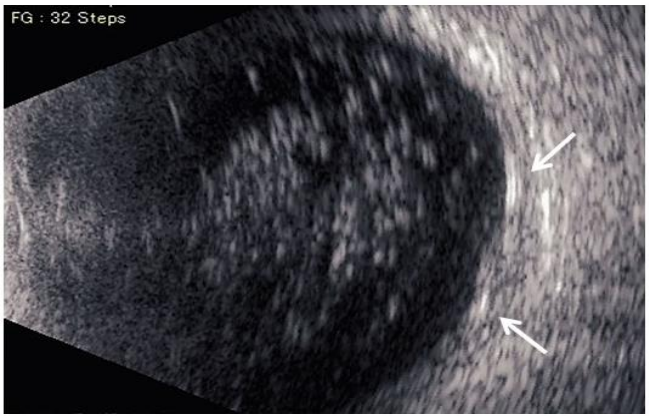

Fig. 2 Ultrasonic B-scan echography
Note two highly reflective lesions (arrows).

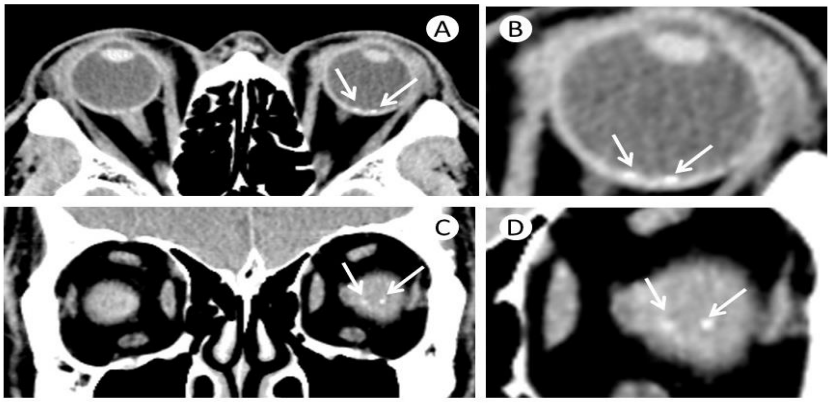

Fig. 3 Axial (A and B) and coronal (C and D) CT images
Note two bone density lesions in the left eye.

On the basis of these findings, the patient was diagnosed with choroidal osteoma. Optical coherence tomography (OCT, DRI OCT-1 Atlantis; TOPCON, Japan) images of these lesions revealed hypo reflective with intrinsic hyper reflective dots (Figure 4A and B).

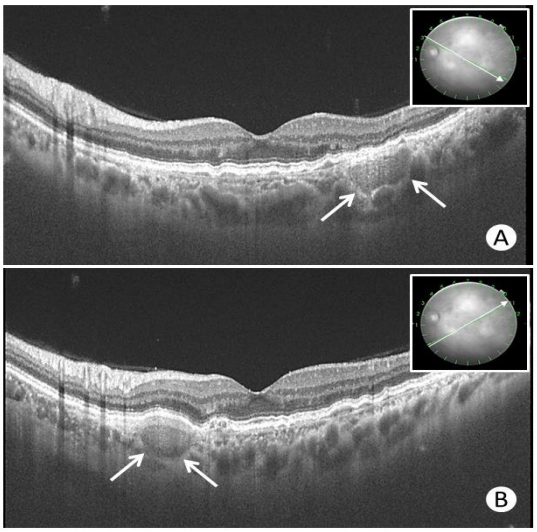

Fig. 4 OCT images
Arrows indicate two hypo reflective lesions corresponding choroidal osteoma.

The reported findings did not change at any point during the 1-year follow-up period.

DISCUSSION

To the best of our knowledge, this is the first reported case of choroidal osteoma that newly emerged during the follow-up period. The differential diagnosis of the fundus lesions in this patient may include multiple choroidal osteomas and sclerochoroidal calcifications. Choroidal osteoma is usually a solitary lesion in the juxt a papillary or macular region [1, 2], multiple lesions are extremely rare [3]. Therefore, we initially suspected the disease as sclerochoroidal calcifications. Sclerochoroidal calcification is a condition found in elderly patients with calcium pyrophosphate deposition in the sclera and/or choroid, appearing as a yellow choroidal calcified mass [2, 4-7]. However, these geographic lesions are often bilateral and located along the super temporal or infero temporal vascular arcades [2, 4-7].

Recently, several reports have described the use of OCT to examine cases of choroidal osteoma [2, 8-11]. Navajas *et al.;* [9] described a latticework reflective pattern in the OCT images. The images of osteomas were characterized as multiple hyper reflective dots surrounding hypo reflective cavernous spaces in the calcified regions. Pellegrini et al. [10] also described a similar sponge-like pattern in the calcified regions. This sponge-like pattern is consistent with a previous histopathologic study that revealed spongy bone consisting of dense bony trabeculae surrounding marrow spaces with loose connective tissue and vessel. In our case, OCT showed similar findings. On the other hand, OCT shows sclerochoroidal calcification arising within the sclera and displaying a rocky or rolling undulating anterior surface with extreme thinning of the overlying choroid [2, 7].

Although our findings were based on a single case of choroidal osteoma, they may contribute to a better understanding of this rare condition. Choroidal osteoma can lead to poor visual acuity, most often related to choroidal neo vascularization, sub retinal fluid, or photoreceptor atrophy [1, 2, 12]. Therefore, long-term follow-up and additional cases are necessary.

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