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CASE REPORT

Choroidal osteoma with CNVM – Successful treatment with intravitreal Bevacizumab

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KEYWORDS

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Abstract Twenty-seven years old healthy woman presented with complaints of sudden painless blurred vision in right eye for 1 week. On examination, visual acuity was 20/30 in the right eye and 20/20 in left eye. Fundus examination OS was normal; OD demonstrated a flat, opaque, yellowish parapapillary choroidal lesion with grayish membrane associated with minimal subretinal fluid suggestive of a CNVM in the center. B-scan ultrasonography revealed findings consistent with a choroidal osteoma. Fundus fluorescein angiography of the right eye revealed a relatively well-defined area of hyperfluorescence that increased in size and intensity in the later phases suggestive of active extrafoveal CNVM. Optical coherence tomography confirmed the extrafoveal CNVM with subfoveal fluid. She was treated with intravitreal Bevacizumab OD. At the 2 weeks visit, vision OD improved to 20/20. The FFA and OCT revealed a resolved CNVM. Intravitreal Bevacizumab may be an effective alternative in the management of CNVM secondary to choroidal osteoma.

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1. Introduction

The term choroidal osteoma was coined by Gass in 1978 when he described four healthy young women with characteristic ophthalmoscopic findings of slightly elevated, yellowish, juxta-papillary, choroidal tumour with sharp geographic borders (Gass et al., 1978). These tumours demonstrate evidence of bone formation in the choroid and are believed to be choristomatous in origin (Aylward et al., 1998). The majority of patients with choroidal osteoma maintain good vision. In a follow-up study of 36 patients, the probability of loss of visual acuity (20/200 or worse) was more than 50% by 10 years (Shields et al., 1988). Choroidal neovascularization is the most

frequent cause of visual loss in choroidal osteoma with more than half of the patients expected to develop choroidal neovascularization (Aylward et al., 1998; Kadrmaz and Weiter, 1997).

2. Case history

Twenty-seven years old female came with the chief complaint of blurred vision in right eye for 1 week. Her past ocular, medical and family histories were non-contributory. On examination her best corrected visual acuity was 20/30 N₆ in right eye and 20/20 N₆ in left eye. Her intraocular pressure was 11 mm Hg in right eye and 13 mm Hg in left eye. Her ante-

rior segment examination in both eyes and fundus examination of left eye were unremarkable. Ophthalmoscopic examination in right eye showed a yellowish lesion on posterior pole of about 5 mm × 5 mm in size (Fig. 1). It was smooth on the surface with slight elevation. In the center of the lesion, subretinal hemorrhage of a fine dot size was noted. On fundus fluorescein angiography, it showed early patchy hyperfluorescence with late staining of the lesion. In the center of the lesion and about 1 disc diameter nasal to FAZ early lacy hyperfluorescence (Fig. 2) which was leaking in the late phase, was noted indicative of classic choroidal neovascular membrane while left eye showed an angiogram within normal limits. There was also

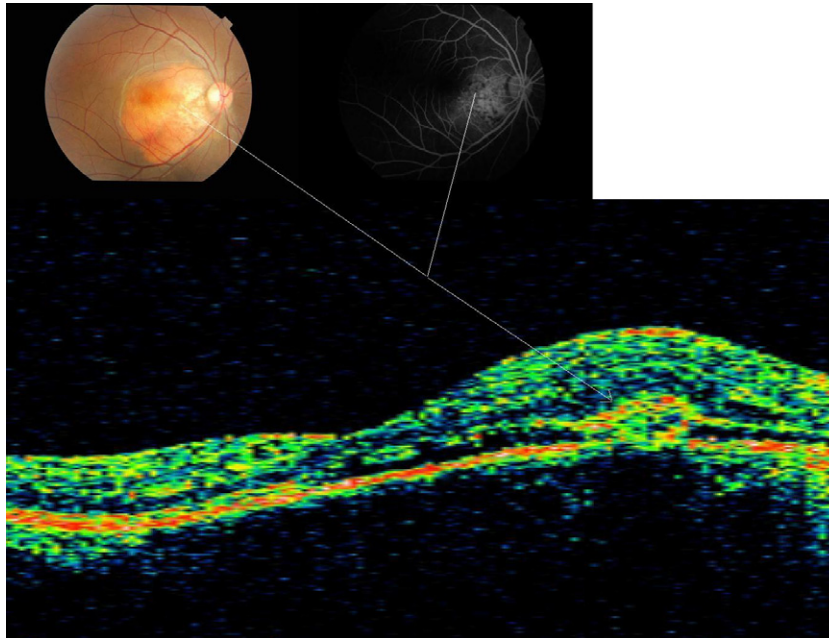


Figure 1 FFA and OCT showing corresponding location of CNVM associated with osteoma in right eye.

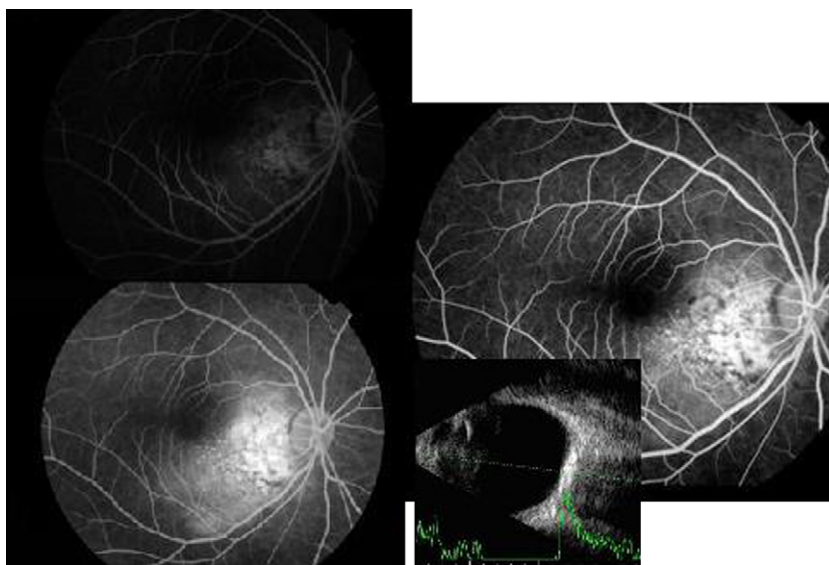


Figure 2 FFA of right eye showing early lacy hyperfluorescence of CNVM with later leakage and B scan showing corresponding shadowing due to osteoma.

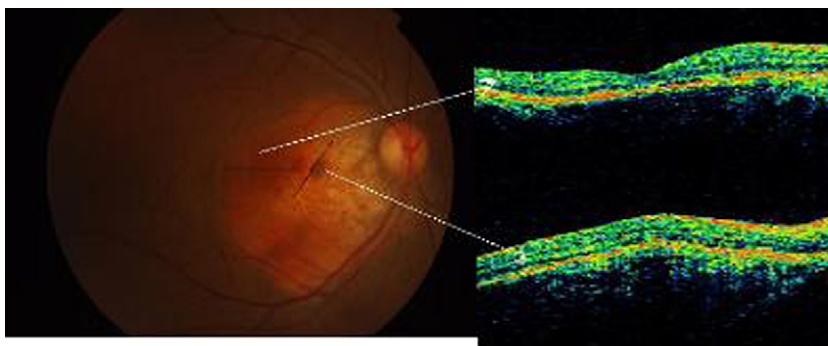


Figure 3 Absence of subfoveal fluid on OCT with regressed CNVM.

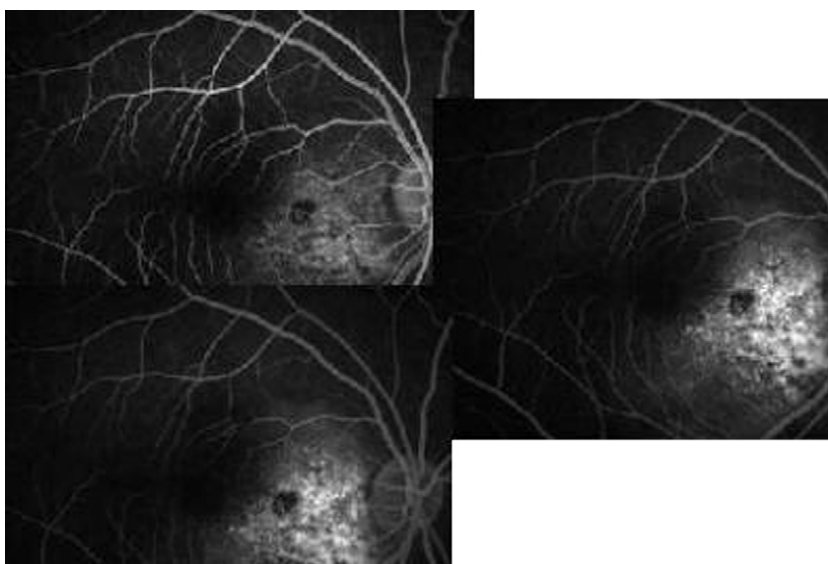


Figure 4 FFA showing regressed CNVM with no leakage (early, mid and late phase in clockwise).

an area of blocked fluorescence corresponding to the hemorrhage seen clinically. B scan showed very high reflectivity on surface with shadowing behind because of presence of calcium in the lesion (Fig. 2). Optical coherence tomography confirmed choroidal neovascular complex with subretinal fluid extending to fovea (Fig. 1). A diagnosis of osteoma with choroidal neovascular membrane was made. She underwent intravitreal Bevacizumab injection for the choroidal neovascular membrane. It showed regression at 1 week follow up with resolution of subretinal hemorrhage and no fluid on OCT (Fig. 3) and no leakage on fluorescein angiography (Fig. 4). The lesion remained stable at monthly follow up even at 6 months with final visual acuity of 20/20 N₆ at the last visit.

3. Discussion

Owing to lack of pigment in the tumour and atrophy of overlying retinal pigment epithelium, laser photocoagulation has limited efficacy (25%) in the treatment of choroidal neovascularization secondary to choroidal osteoma. Intravitreal Bevacizumab (IVB) is independent of the intrinsic pigmentation and has the advantage of sparing overlying retina. So despite having extrafoveal CNVM, we preferred IVB over laser.

Encouraged by the results of the AntiVEGFs for choroidal neovascular membranes in choroidal osteomas by [Ahmadiéh and Vafi \(2007\)](#) and [Narayanan and Shah \(2008\)](#) we performed intravitreal Bevacizumab and achieved complete regression of choroidal neovascularization. Since the visual acuity was 20/30 with minimal subfoveal fluid and there was concern regarding the possibility of extension of the choroidal neovascular membrane into the foveal region, we kept a close follow up during the regression period. There are case reports with treatment of CNVM associated with choroidal osteomas with photodynamic therapy and ranibizumab with good efficacy, but cost effectiveness is a constraint ([Shields et al., 2008](#); [Song and Roh, 2009](#)). Our case illustrates that choroidal neovascularization secondary to a choroidal osteoma can be successfully treated with IVB which is very cost effective as compared to other modalities of treatment.

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