Case report

Bilateral Choroidal Osteoma in a black Asian Man

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Abstract

Purpose: To report a rare case of bilateral choroidal osteoma with choroidal neovascularization (CNV) in an oriental black young man.

Design and methods: A 29 year-old Iraqi man who presented with a gradual decrease in vision in his right eye for 3 months duration. ophthalmoscopic examination showed bilateral juxtapapillary yellow orange slightly elevated mass about 2 disc diameter around the disc with clear margins. Invasion of right macula from inferionasal side were observed. Optical coherence tomography (OCT), Fluorescein angiography (FFA), ocular ultrasound, and computed tomography (CT) confirm the diagnosis of bilateral choroidal osteoma with right eye choroidal neovascularization (CNV).

Keywords: choroidal osteoma, bilateral, choroidal neovascularization.

Introduction

Choroidal osteoma is a rare and benign intraocular tumor [(1)], it is often found in healthy young females with a 6:1 female to male ratio and is bilateral in about 20% of cases [(2)]. Intraocular ossification occurs following ocular or orbital trauma, chronic retinal detachment, sever inflammation and phthiasis bulbi. The occurance of choroidal osteoma in healthy young patient without previous ocular dieseae suggest it's developmental origin. The preferred site of the tumour is juxtapapillary region but it could start intially at macular area [(3)]. Choroidal osteomata usually grow very slowly, but in some cases acute rapid drop of vision can happen. The main cause of vision drop is choroidal neovascularization which occur in more than 50% of cases by 10 years [(4)]. About 40% of cases showed evidence of growth during the followup peroid. Decalcification of the tumor can occur spontaneously [(2, 4, 5)].

Case report

A 29 year-old male presented with a gradual decrease in vision in his right eye for 3 months duration. He had no other ocular or systemic complaints and no history of ocular trauma or symptoms suggestive of any past intraocular inflammation.

On ocular examination, the best corrected visual acuity was counting finger 5 meters in the right eye and 6/6 left eye .intraocular pressure by applanation tonometer was 16mmHg in right eye and 14mmHg in left eye. Slit-lamp examination of anterior segment was normal for both eyes, there is no inflammatory reaction. Dilated fundus examination for right eye showed clear media with a large yellow orange mass at juxtapapillary area extending from inferonasal to temporal area above the horizon invading the macula from its inferior and nasal sides, the largest diameter about 3 disc area. There is obvious elevation of the mass above the disc plane. The margins is clear and the overlying retinal vessels were undisturbed. There is a whitish paller at the center of the leasion while the periphery is orange in color with hyperpigmented areas and motling at the macular region.

The left fundus photography (TRC 50 EX Fundus Camera) showed large juxtapapillary mass extending from inferonasal to temporal area, the largest diameter was 3 disc areas with yellow orange color with no invasion of the macula.

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Optical coherence tomography (TOPCON 2000 OCT system) of the right eye showed subretinal fluid with areas of retinal pigment epithelium atrophy and hypertrophy. No remarkable changes seen in the left eye.

Fluorescein angiography (TRC 50 EX Fundus Camera) demonstrated patchy areas of hyperfluorescence in the early phases with diffuse intense hyperfluorescence in the late phases. A lacy pattern of hyperfluorescence indicative of subretinal neovascular membrane was evident in the early phases on fluorescein angiography.

B-Scan ultrasonography showed a focal, slightly elevated, highly echo-reflective lesion at the posterior pole. Also there is a distinct acoustic shadowing of the retro-ocular structures posterior to the mass due to absorbsion of ultrasonic energy by the bony tissue.

Computed tomography (CT) showed a characteristic, well defined homogeneously radio-opaque plaque of bone density corresponding to the lesion in the posterior pole of both eyes.

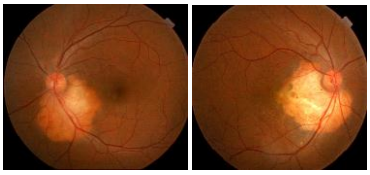

Figure 1. Fundus photography showed bilateral choroidal osteoma.

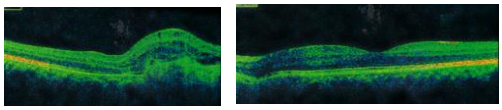

Figure 2. Optical coherence tomography of both eyes showing subretinal fluid in the right eye.

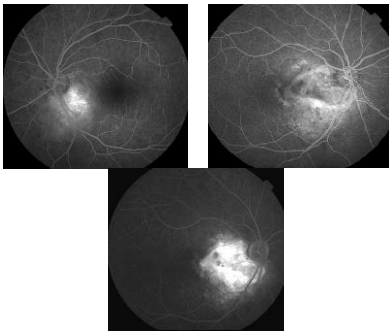

Figure 3. Flourecein angiography showed irregular hyperfluorecence in early phase and dense hyperfluorecence in late phase of right eye, midphase flourecein angiography of left eye.

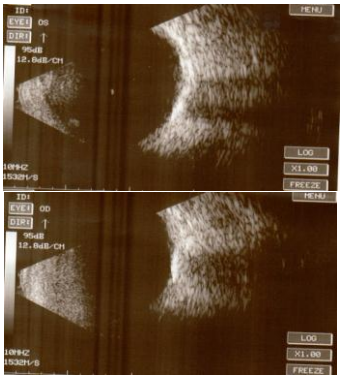

Figure 4. High reflection of the bony plaque with the projection of the acoustic wave in the orbital adipose tissue.

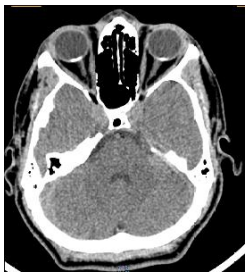

Figure 5. Computed tomography of the skull showing a bone density choroidal lesion at the attachment of the disc to the globe more in the right eye.

Depending on these findings the patient was diagnosed with bilateral choroidal osteoma and secondary choroidal neovascular membrane in the right eye. The patient given 1.25 mg/0.05 mL injection of intravitreal Bevacizumab (Avastine; Roche, switzland) after discussion with the patient the types of treatments and expectations post treatment.

Discussion

Choroidal osteomas are yellow white or orange lesions mostly at the peripapillary region but it can occur at macular area [(3)]. These tumors demonstrate evidence of bone formation in the choroid and are believed to be an osseous chorestoma [(2)]. It is located between choroicapillaris and outer choridal tissues, pathologically the choroid was replaced by mature bone. The bone marrow spaces are filled with vessels, forming spongy bone structure [(6)]. The mean age of presentation is 21 years, about 90% of cases were white, 3% were black,6% were Hispanic and 3% were asian[(7)].

In adition to the charactarstic fundus features, The presence of bone density reflection in ultrasound and CT scan is diagnostic for Choroidal osteoma [1,8]. choroidal neovascularization is the main cause of drop of vision and it is the presenting feature in most of the patients ,but some cases are discovered accidentally during routine eye examination [1]. Other causes of drop in vision in choroidal osteoma includes choroidal melanoma, choroidal metastasis, intraocular lymphoma, choroidal hemangioma and retinoblastoma in young patients.[4,5] delay of diagnosis could happen because of the rarity of the disease and misdiagnosis was observed in about 91% of patients[8].

There are many treatment modalities for the neovascular membrane including focal macular laser, photodynamic therapy, and intravitreal injection of anti-VEGF [9].

The prognosis of vision varies according to tumor location, retinal pigment epithelial and sensory retinal degeneration, subretinal fluid and hemorrhage, and development of a subretinal neovascular membrane [10]. unfavorable prognosis in about 58% of patients who have visual acuity of 6/60 or worse within 10 years after diagnosis of the disease[4]. Spontanous involution of the tumor is believed to be due to predominance of osteoclastic activity.[5]

Conclusion

Choroidal osteoma is a rare, benign, osseous choristoma of the choroid. It is typically found in young healthy females in the second or third decades of life. Most of cases of choroidal osteoma are unilateral, it is reported mainly in white people, and very few cases are reported in oriental descent. In this paper we report a rare case of bilateral choroidal osteoma in black Asian man.

References

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