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Dome Shaped Macula

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Abstract

Dome shaped macula is characterized by a convex anterior protrusion and shown to occur in 10.7% to 12% of highly myopic eyes in hospital-based patients. DSM is associated with high myopia, and its presence is positively correlated with the severity of myopic maculopathy.

Introduction

Dome Shaped Macula (DSM) is a convex protrusion of the macula within a posterior pole staphyloma [1] that is often unnoticed by endoscopic examination. We report here two cases of two patients with high myopia and a domed macula.

Case Presentation

The first patient is a 53-year-old male with high myopia who consulted for a progressive worsening of his visual decline. The patient had in the right eye a visual acuity limited to the counts of the fingers at 5 meters, eye pressure at 19 mmHg, and moderately dense posterior precapsular cataract. In the left eye the visual acuity was at 1/10, the eye pressure at 20 mmHg, and a posterior precapsular cataract. Endoscopy (Figure1) showed bilateral tilted optic disc, significant chorioretinal atrophy and posterior pole staphyloma. The macular Optic Coherence Tomography (OCT) showed a bilateral dome-shaped appearance to the macula (Figure 2).

The second patient is a 57-year-old male with a history of bilateral high myopia, open-angle glaucoma, trabeculectomy for both eyes, and bilateral cataract surgery. In the Right Eye (RE) the visual acuity was 2/10, the eye pressure was 18 mmHg, IOL implant was in place. The fundus examination (Figure 3) showed chorioretinal atrophy, a posterior pole staphyloma, and a macular Fuchs spot. In the Left Eye (LE), the visual acuity was at 6/10, the eye pressure at 22 mmHg, and the fundus examination revealed diffuse chorioretinal atrophy as well as a posterior pole staphyloma. Macular OCT (Figure 4).

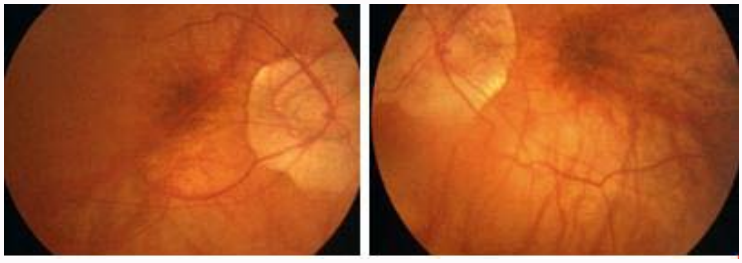

Figure 1: Fundoscopy showing bilateral chorioretinal atrophy and posterior pole staphyloma with macular hyperpigmentation.

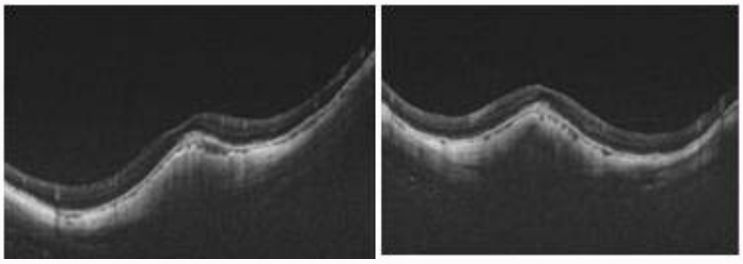

Figure 2: Macular OCT showing (OCT) bilateral dome-shaped macula with thin retina and choroid.

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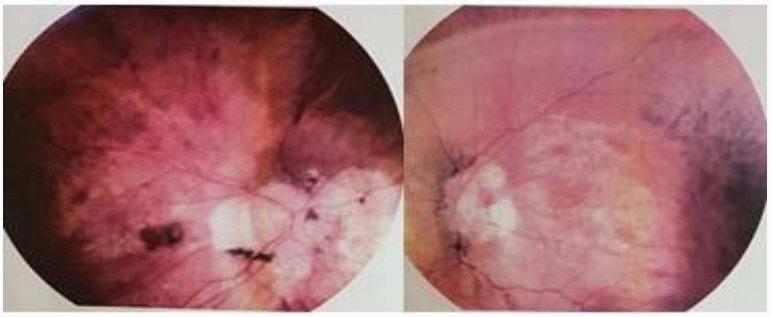

Figure 3: Fundoscopy showing chorioretinal atrophy, a posterior pole staphyloma, and a macular Fuchs spot in the RE that can be associated with CNV.

Figure 4: Macular OCT showing bilateral DSM with increasing of reflectivity in the RE suggesting CNV.

Discussion

The DSM is a complication of high myopia [2]. It is due to various mechanisms, mainly scleral deformation [1]. The thickening of the central choroid, vitreoretinal traction associated with low intraocular pressure and deformation of the sclera [3] are other presented hypotheses amongst others, but the exact explanation to this phenomenon is not fully elucidated.

There is three dome-shaped macula that have been described [4]: round dome, vertical oval-shaped dome and horizontal oval-shaped dome which is the most common.

It can be asymptomatic. Its diagnosis is mainly based on macular OCT. It is often stable, but complications are possible essentially the serous retinal macular detachment which is associated with decreased visual acuity loss and is more frequent when the macular bulge height is more elevated. The development of serous retinal macular detachment is linked to choroidal circulation changes and compressive factors [1].

DSM however, can remain stable over time [5].

Conclusion

The DSM is to be sought after in the face of any aggravation of a seemingly stable high myopia. Its diagnosis and the control of complications is based on macular OCT.

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