



A 52-Year-Old Myopic Female with Progressive Painless Vision

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Introduction:

A 52-year-old myopic female presents with progressive painless vision for several years. She was referred by an outside provider for evaluation of myopic degeneration and choroidal neovascularization in both eyes. The patient denies any sudden vision change, flashes of light or new floaters.

Exam:

Visual acuity 20/100 in both eyes. No relative afferent pupillary defect was noted. Confrontation to visual field and extraocular motility was intact. The patient had mild nuclear sclerosis, otherwise anterior segment examination was unremarkable.

Dilated fundus examination revealed synergetic vitreous, tilted discs and pigmentary changes in the macula with a blunted foveal light reflexes. The periphery was attached without breaks.

SD-OCT through the macula of both eyes revealed subretinal fluid (Figure 1 & 2). Fluorescein angiography (FA) did not reveal evidence of a neovascular membrane. SD-OCT was repeated with vertical segments which revealed a dome-shaped contour (Figure 3).

Discussion:

The finding this patient presents with is dome-shaped macula (DSM). It is defined as a forward macular bulging that occurs in patients with high myopia.

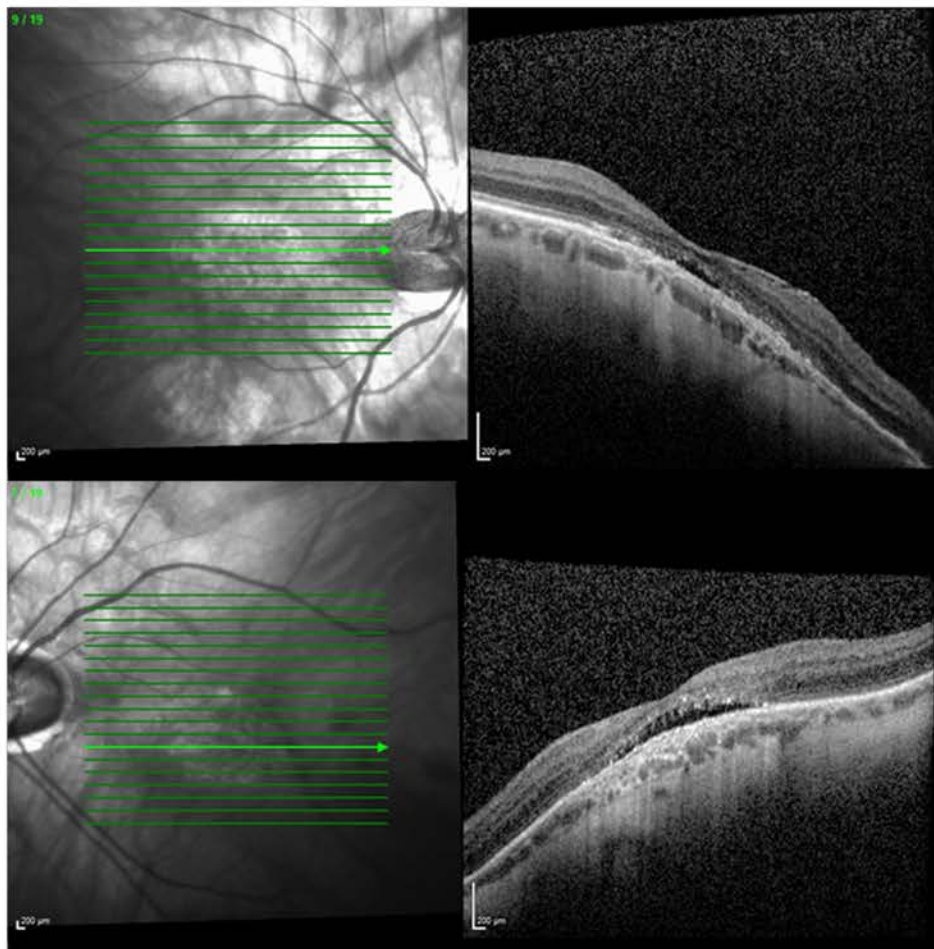


Figure 1 & 2: SD-OCT of the right and left eye. Subretinal fluid is noted in both images.

Posterior staphyloma may or may not be present as well. First described in 2008 by Gaucher et al¹, DSM is estimated to have a prevalence of 11-20% in highly myopic eyes, depending on ethnicity. DSM has also been described in mild myopic or emmetropic eyes².

The pathogenesis of this anatomic variant has yet to be completely understood, DSM thought to be secondary to an ingrowth of choroid or a focal ingrowth of sclera in the foveal area². Keane et al. hypothesized that the development of DSM in myopic eyes may reflect an

adaptational response of myopic patients to reduce defocus in the macula³, however given that DSM is present in non-myopic eyes, this theory has been challenged⁴.

Three DSM shapes have been described as follows: a horizontal oval-shaped dome, a vertical oval-shaped dome, and a round dome⁵. Our patient had a vertical variant which was best demonstrated on vertical SD-OCT scan patterns (Figure 3).

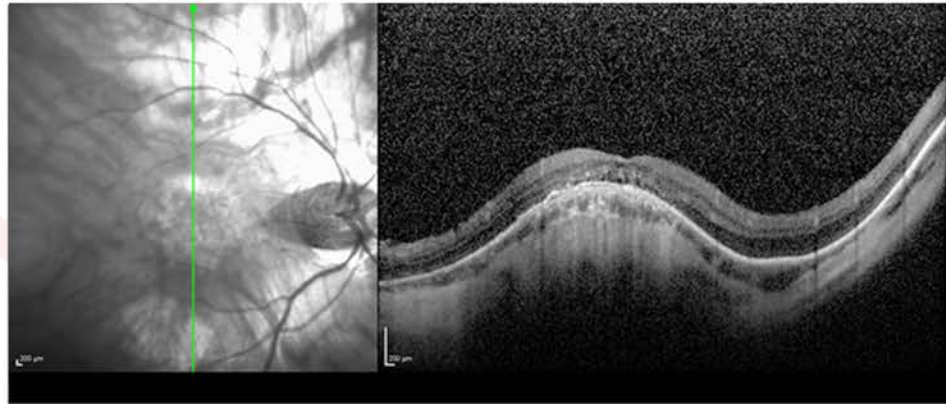


Figure 3: SD-OCT of the right eye with vertical segments demonstrating dome-shaped macula.

The most frequent complication in DSM is the present of SRF, as seen in the case described. The cause of SRF in these patients is unclear. Treatments including PDT, anti-VEGF, and even spironolactone have been suggested in cases of SRF with DSM^{6,7}. Given the paucity of data and literature, no single therapy has been deemed as an effective strategy for treatment of SRF in these patients. Fortunately, SRF does not appear to have an effect on visual acuity⁴. Given that the presence of SRF does not significantly worsen visual acuity in DSM, it is reasonable to observe these patients.

References:

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Case of the Month
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