Corneal Ectasia: A Possible Rare Case of Superior Pellucid Marginal Degeneration

ABSTRACT: A 40 year old Haitian male presents with reduced vision of the right eye. Acuity is not correctable past 20/200 with refraction. Topography of the right eye reveals the characteristic “kissing doves” pattern positioned superiorly.

CASE HISTORY: A 40 year old Haitian male presents with a chief complaint of reduced vision in the right eye, dating back at least 4 years. The patient is new to our care and reports an unremarkable medical and ocular history, and no medications. The patient’s previous eye exam was over 4 years ago in Haiti.

PERTINENT FINDINGS: The patient is not correctable beyond 20/200 with any lenses that are available in the phoropter or trial lens set. Retinoscopy suggests a refractive error greater than -22D. Munson’s sign of the right eye is evident. Topography of the right eye reveals a “kissing doves” superior pattern with steepening beyond 70D. The left eye reveals an early temporal kissing doves pattern, which would correspond to the mild with-the-rule astigmatism noted in the left eye.

DIFFERENTIALS: The kissing doves pattern most strongly suggests Pellucid Marginal Degeneration (PMD), with other possibilities being keratoconus and other corneal ectasias.

DISCUSSION: PMD typically occurs inferiorly on corneas, and results in a large degree of astigmatism. A retrospective report by Sridhar et al (2004) found that Superior PMD, while less common than inferior, can occur and should be strongly considered when topographical evidence is present, as in our case. Superior PMD shares its traits with the inferior form, with the exception of the location on the cornea. Corneal thinning and against-the-rule astigmatism causing steadily decreasing visual acuity are the major hallmarks.

TREATMENT AND MANAGEMENT: PMD in its early form can be managed with RGP or scleral lenses. The typical positioning of PMD on the inferior cornea can complicate fitting. In our case, the superior decenteration would also cause fitting difficulties. The corneal curvature in our case also makes contact lens management unlikely. Corneal transplant is another option, but also complicated by the decenteration that is found in PMD, as the graft would have to be similarly decentered. We referred this patient to a cornea specialist at Boston Medical Center for an expert opinion. Although the right eye appears to remain challenging to manage, the left eye is showing signs of PMD as well. Consultation for possible corneal cross linking may be helpful in preventing a decline in the visual acuity of the left eye over time. Cross linking has been extensively studied by many groups including Vinciguerra et al (2009) and Spoerl et al (2007), demonstrating its efficacy at normalizing keratoconic and other ectatic corneas, along with its safety.

CONCLUSION: The presentation of our patient outlines the importance and need for regular eye exams in the working age population. Based on the patient’s report, his condition progressed over the past half-decade in which he did not seek eye care. Prompt care and referral would have positively affected the visual outcome for this patient. Barriers to care include accessibility, education, and socioeconomic status, which we seek to reduce at community health centers.