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Case Report

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Epiretinal Membrane: Rock and Roll

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ABSTRACT

A 54-year-old female presented 6 months before with complaints of metamorphosia and diminution of vision in both eyes. She had bilateral cellophane maculopathy and was advised observation. 6 months later, patient presented to us with history of blunt trauma to the left eye with a rock. Macula showed a curled over sigmoid shaped membrane in the left eye. OCT confirmed a rolled over epiretinal membrane. The spontaneous release of ERM can be attributed to various factors like PVD, remodeling of the membrane as well as sudden fluctuation in intraocular pressure.

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Case Description

A 54-year-old female presented 6 months before with complaints of minimal metamorphopsia with visual acuity of 20/40 in right eye and 20/60 in left eye. She was pseudophakic in the right and had an early cataract in the left eye. Fundus examination revealed bilateral early Epiretinal Membrane (ERM) (cellophane maculopathy). Patient was advised observation and was asked to follow up at 3 months to detect possible progression of the ERM.

Figure 1: Fundus Photograph of Left Eye Showing a Curled over Sigmoid Shaped Membrane (White Arrow) at the Macula

6 months later, patient presented to us again with history of blunt trauma to the left eye before one week and complained of black spots in front of the left eye. There was improvement in the visual acuity, noted to be 20/40 in the left eye. Fundus photography revealed a curled over sigmoid shaped membrane (white arrow) at the macula in the left eye (Figure 1). The previous Optical Coherence Tomography (OCT) revealed a thin ERM with early loss of foveal contour. OCT upon presentation this time showed a sequential rolling of ERM over retina along with the return of normal central foveal thickness (Figure 2A, B, C). The recovery of symptoms was attributed to the spontaneous release due to the auto peeling and roll over of the epiretinal membrane and clearing the foveal area. Meanwhile, the right eye OCT revealed a thickening of ERM with loss of foveal contour and decrease in vision (20/60).

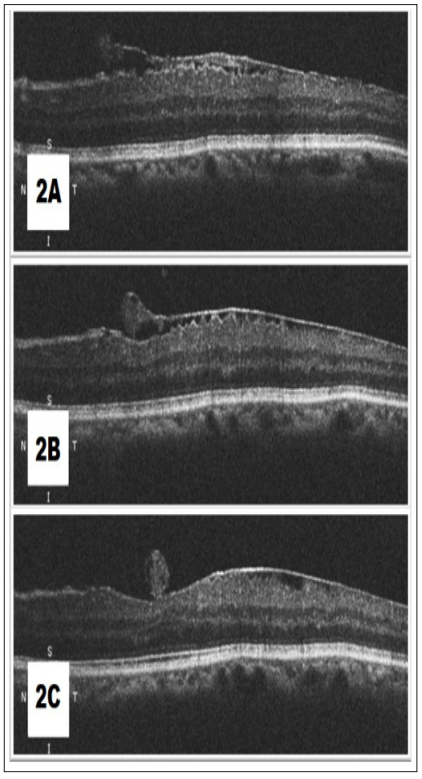

Figure 2: A, B, C is the OCT Line Scan Showing Sequential Rolling of Epiretinal Membrane over Retina along with Maintained Central Foveal Contour

Discussion

ERM, synonymously known as cellophane maculopathy, pre-macular fibrosis, epimacular membrane, macular pucker and surface wrinkling retinopathy, is a pathologic fibroglial proliferation at the vitreoretinal interface, which grows over the inner surface of the retina [1]. ERM affects the quality of vision due to metamorphopsia and reduced visual acuity which is caused by an abnormal hemodynamic microcirculation, light-filtering effect of ERM, and distortion of photoreceptors by tangential traction [2]. ERMs can be primary or secondary. Primary/ idiopathic ERMs appear post PVD or break in Internal Limiting Membrane (ILM). Differentiation of hyalocytes in cortical vitreous into myofibroblasts, owing to growth factors released due to the mechanical traction of PVD is hypothesized as one of the reasons for idiopathic ERMs. Another theory is that PVD injuring ILM allows glial cells to move onto the retinal surface as well as favor fibro cellular proliferation, between the vitreous and the retina [3]. Secondary ERMs are the result of an already existing ocular pathology, like PDR, hypertensive retinopathy, retinal vein occlusions, RD, PVR, ocular traumas or retinal surgical procedures. The inflammatory mediators released in these pathologies stimulate fibro cellular growth resulting in secondary ERMs [4].

Spontaneous auto peeling and ERM retraction post blunt trauma is a rare occurrence. Spontaneous ERM peeling from the inner retinal surface can be secondary to the contractile strength of the membrane. An increase in the contractility of the membrane, observed in dense membranes, may lead to a spontaneous separation of the ERM at the thinnest point which may peel away from retina tangentially. ERM rupture and subsequent separation by tangential traction results in the auto peeling and rolling of the membrane.

There are three main mechanisms hypothesised for spontaneous separation of ERM presently

- Vitreo-retinal pull on ERM caused by an incomplete PVD [5].
- Thickening of ERM over time period leads to contraction of the membrane causing a tangential pull towards the centre of the membrane [6].
- A sudden surge of intraocular pressure influencing an acute tear at the thinnest point of ERM [7].

Since the retracted membrane fortunately cleared the foveal area, it resulted in an improvement of symptoms, and hence observation was advised. Meanwhile, the progression of ERM in the right eye had to be intervened surgically.

Conclusion

ERM is a pathological proliferation of cells over retina. As long as retracted ERM is not in the visual axis or isn't causing any anatomical disturbance or decrease in vision, observation is the mainstay. In this unique case, we report spontaneous rolling of ERM by auto peeling and retraction post blunt trauma by a rock in one eye, as well as a progression of ERM over a period of time in the other eye.

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Financial Interests: Nil

Patient Consent: The patient has viewed the content and images of this case report and has consented to the submission of the case report for publication.

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