Spontaneous resorption of sub-retinal cortical lens material

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We report a rare case of retained sub-retinal cortical material, which underwent spontaneous resorption. Patient presented with a left eye traumatic retinal detachment with a large retinal tear and posteriorly dislocated cataractous lens. Vitrectomy, lensectomy, silicone oil injection, and endolaser were performed. A good visual result was achieved. The report draws attention to this condition and highlights possible technique for minimizing risk of this complication in similar cases.

Key words: Sub-retinal cortex, sub-retinal lens material, cortex resorption

We report a unique case of sub-retinal cortical lens material, which underwent spontaneous resorption. Spontaneous resorption of residual lens cortex is well documented in the anterior vitreous jelly or residual pieces of cortex after vitrectomy for dropped nucleus. However, no reference in literature could be found for spontaneous resorption of sub-retinal cortical lens material.

Case Report

A 45-year-old female patient was referred to the vitreoretinal unit of our tertiary eye care hospital with a history of diminished vision in the left eye of one week duration following blunt trauma to the left eye. On examination, the vision in the left eye was perception of light with good projection in all quadrants. Slit lamp biomicroscopy showed a clear cornea with few descemet folds, a deep anterior chamber, iridodonesis, and aphakia. The pupil had traumatic mydriasis. The vitreous face was broken, and tobacco dusting was present in the anterior vitreous. Indirect ophthalmoscopy showed presence of a dislocated crystalline lens in the posterior vitreous with intact capsule and early cataractous changes. There was a total retinal detachment with a large peripheral retinal tear just short of 90 degrees extending from 12 to 2:30 o clock. A localized vitreous hemorrhage was noted. Gonioscopy did not show presence of angle recession.
The other eye had vision of 20/20 with no abnormality.

The patient underwent a routine 3 port 20 G pars plana vitrectomy with peribulbar anesthesia after being explained the guarded prognosis. The procedure was done using the Accurus vitrectomy system and visualization through a BIOM coupled to VISU microscope. A complete posterior vitrectomy with removal of posterior hyaloid was performed. Lensectomy was performed using a phacofragmatome in 3D mode, and all visible nuclear and cortical material was emulsified and/or aspirated in the mid vitreous cavity. Peripheral cuff of retina anterior to the tear was trimmed to prevent proliferation. This was followed by a fluid air exchange and air silicone oil exchange. Meticulous Endolaser was performed along the posterior margin of the break. Iridotomy was performed at 6 o’clock.

At the end of FGE intra-operatively, the surgeon noticed a fluffy piece of hydrated lens cortical material lying sub-retinal, approximately 1.5 mm in diameter, just within the inferotemporal arcade. Removal of the sub-retinal cortex would have involved turning over the flap and searching for the cortex. The risk to benefit of successfully locating and removing the cortex, without causing surgical trauma, was weighed. The surgeon decided to go ahead with the remaining steps of surgery as planned without attempting to remove the cortex [Fig. 1].

The patient had an uneventful post-operative course with no undue inflammation or raised intraocular pressure. There was complete absorption of the lens cortex over a period of 3 months [Fig. 2].

Subsequently, Silicone oil removal was performed, and the patient had a best corrected visual acuity of 20/40 with an attached retina [Fig. 3]. RPE changes in the form of stippling were visible over the underlying RPE [Fig. 4]. These were confirmed on FFA. On last follow up 20 months after surgery, the patient had a flat retina with best corrected visual acuity of 20/40 and presence of RPE changes at the site of the cortex.

Discussion

It is not common to encounter sub-retinal lens cortical material under the retina. The presence of a large retinal tear coupled with a posterior dislocated lens requiring fragmentation resulted in this unique condition. During phacofragmentation, it is not uncommon to have cortical and nuclear pieces of the lens to be dispersed in the vitreous cavity. In this clinical setting with a detached retina and almost giant retinal tear, the cortical fragment got lodged behind the freely mobile torn retinal edge.
Use of perfluorocarbon heavy liquid after vitrectomy and prior to starting phacoemulsification could have minimized the chances of the same, as prevention is the only viable option.

The mechanism of spontaneous absorption is similar to the removal of sub-retinal blood. RPE cell convert in scavenger cells and mop up the material. This is usually associated with permanent changes in the underlying RPE, as was confirmed in this case on FFA. It is important to note that the decision to leave behind the cortex near or under the fovea would have resulted in poor visual recovery due to underlying RPE changes and attendant overlying photo receptor damage.

While this presentation was unique and visual recovery good, the possibility of this complication should be borne in mind in such clinical situations and suitable intra-operative preventive measures taken.

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