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Retinal Detachment in Coloboma Choroid- Management And Outcomes

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I. Introduction

Choroidalcoloboma results from faulty closure of the embryonal fissure of the eye during the sixth and seventh weeks of fetal development.[1]. Although the reported incidence is only 0.14% of the general population, 40% of these will develop a retinal detachment sometime during their lifetime [6]. Rhegmatogenous retinal detachment (RRD) is separation of neurosensory retina from retinal pigment epithelium with accumulation of subretinal fluid within the potential space in between. RRD is caused by a full thickness break in the neurosensory retina which initiates separation of the neurosensory retina from the underlying retinal pigment epithelium. Vitreous synresis needs to be there for seepage of SRF and detachment. The colobomatous area consists of a thin layer of hypoplastic retinal tissue. Choroid and retinal pigment epithelium are not developed in this region, and sclera underlying the colobomatous area is usually thin and ectatic, leading to staphyloma.
Retinal detachment caused by retinal breaks outside of the colobomatous area can be managed by conventional scleral buckling techniques. But these conventional techniques fail if the detachment is caused by a break in the hypoplastic retinal tissue within the colobomatous area which is very difficult to locate and seal, often they are multiple. Furthermore, other difficulties may confound the management of coloboma-related retinal detachments.

Nystagmus can be an associated feature and may be severe enough to make preoperative evaluation difficult. The lack of contrast in the area of the coloboma can make the identification of retinal breaks difficult. Retinal breaks in the colobomatous area are difficult to seal; retinopexy is not effective because of the absence of choroid and retinal pigment epithelium, and the posterior location of the breaks makes it extremely difficult to buckle the same. Hence, in the management of coloboma-related retinal detachments, attempts have been directed toward isolating the coloboma from the rest of the retina, rather than toward sealing the retinal break. Schepens[2] advocated drainage of subretinal fluid, followed by the production of chorioretinal adhesion around the periphery of the coloboma using cryopexy, photocoagulation, or both. Patnaik and Kalsi[3] achieved reattachment of the retina in one case by applying a radial buckle that extended to the optic disc. When both sides of a coloboma are involved in the detachment, Wang and Hilton[4] recommend that two radial buckles be applied along the two edges of the coloboma. Wang and Hilton reviewed the literature and found that of 42 eyes with coloboma-related retinal detachment, 18 (43%) had successful reattachment. In their own series of 20 eyes, success was achieved in 7 eyes (35%). They concluded that vitrectomy with intraocular gas tamponade and creation of chorioretinal adhesion along the edge of the coloboma is the preferred treatment. Silicone oil also has been used as a temporary tamponade in the management of these cases. [5]

II. Aims And Objectives

To evaluate Anatomical and Visual outcomes of surgery for primary rhegmatogenous retinal detachment in coloboma choroid patients. Results are to be evaluated in terms of: reattachment rate and visual outcome.

III. Materials And Methods

This was a descriptive type of observational, pre-post operative hospital based case series study done at Upgraded Department of Ophthalmology, SMS Medical College, Jaipur. 7 eyes of patients attending SMS Eye OPD diagnosed with RRD in coloboma of choroid were recruited from January 2014 to September 2017.
Thorough pre-operative history, vision, I/O examination, etc were documented. 23 G pars planar vitrectomy with 240 band encirclage+ injection PfCl+ extensive hyaloid peeling over coloboma+ fluid air exchange+ 360 degree endolaser to demarcate colobomatous area from non colobomatous part + silicon oil injection for tamponade was done. Post operative best corrected vision, indirect ophthalmoscopy were documented at day1, day7, day30, day 90 and day 180. Silicon oil was removed 6 months post operatively. Patients were further kept on follow-up for 6 months post silicon oil removal. Results were computed at the final follow up.

IV. Results

Out of total 7 patients, 6 patients had attached retina at the final follow-up. Visual acuity at the time of presentation was Hand Movement Close to Face. The final best corrected visual acuity ranged from finger counting 3 meters to 0.4 log MAR depending on the location of coloboma. Mean BCVA was 0.8 log MAR. 3 patients had BCVA more than 0.6 log MAR.

V. Discussion

Retinal detachments associated with coloboma presents unique challenges in terms of altered anatomy and difficult vitreo-retinal interface. Meticulous surgical technique with special attention to colobomatous area & its border with normal retina can yield excellent surgical outcomes.

We had 7 patients of iridofundalcoloboma. All cases underwent encirclage with PPV+ Inj. PFCL+ extensive hyaloid peeling over coloboma+ FAE+ 360 degree endolaser+ SOI. Same is done by ***Ramezani A***[7]et al (2010) ***Chen MS*** et al (2007) [8]. Final follow up was 6 months post silicone oil removal.6 patients had attached retina at the final follow up. The final visual acuity ranged from finger counting 3 meters to 0.5 Log MAR depending on the location of coloboma. Mean final BCVA was 0.8 Log MAR. 3 patients had BCVA>0.6 Log MAR.***Teoh S C*** al (2008) had 100% success and used SF6, C3F8 as tamponade which is more than our study[9]Our results are similar to ***Bastion ML*** (2011)[10]

VI. Conclusion

Meticulous surgical technique with special attention to colobomatous area & its border with normal retina can yield excellent surgical outcomes in cases of RD with above pathology. ILM peeling may be a useful prophylaxis for macular pucker, ERM formation in cases with coloboma choroid. Larger no of cases undergoing this maneuver may conclusively help to determine its utility.

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