Trans Corneal Three Port Vitrectomy Without Conjunctival Incision

HUSSAIN AHMAD KHAQAN¹, ABDUL HYE², SAHER ABDUL HYE³, HASSAN RAZA CHAUDHARY⁴, FARRUKH JAMEEL⁵

ABSTRACT

Aim: To evaluate the safety and outcomes of trans corneal three port vitrectomy without conjunctival incision.

Methods: A total of 27 patients were included in the study. out of which 13 patients were with posteriorly dislocated PCIOL (posterior chamber intra ocular lens), 9 patients with dropped cortical lens matter and 5 patients with vitreous hemorrhage. In all these patients, we made three limbal incisions and performed 23 G Trans Corneal Vitrectomy. All the patients were followed for six months.

Results: In 13 patients posteriorly dislocated posterior chamber intra ocular lens was removed (among them in 8 patients same IOL was replaced), in 9 patients dropped cortical lens matter was removed and in 5 patients vitrectomy for vitreous hemorrhage was done by trans corneal three port vitrectomy without conjunctival incision without any significant complication. Striate keratopathy of different grades was present in first week post operatively only. No other complications were observed in follow up.

Conclusion: Trans corneal three port vitrectomy without conjunctival incision is a safe technique for removal and replacement of dropped IOL, removal of cortical lens matter and vitrectomy for vitreous hemorrhage.

Keywords: Vitrectomy, conjunctival incision, IOL

INTRODUCTION

Vitrectomy is a procedure in which vitreous is cut and removed from ocular cavity mainly for the retinal detachment¹ or to clear the media . There are many other indications for this procedure e.g., Vitreous hemorrhage², retained fragments of lens matter³, Macular hole⁴, advance diabetic eye disease⁵, endophthalmitis⁶, intraocular foreign bodies⁷, vein occlusion⁸ and idiopathic epiretinal membrane⁹. The Pars Plana Vitrectomy , though, is widely accepted and conventional route for performing vitrectomy¹⁰, sometimes is difficult to perform especially in patients having trabeculectomy and also sometimes the vitreous incarceration in the scleral wounds could result in difficulty. Pars plana approach may lead to post-operative hypotony secondary to sclerostomies made for instruments¹¹. Subconjunctival hemorrhage is another important consequence of pars plana approach for vitrectomy¹², leading to cosmetically unacceptable looking eye¹².

We performed trans corneal three ports vitrectomy in selected cases as an alternate route. In our study, the patients with Dropped PCIOL, Dropped cortical matter and vitreous hemorrhage were included. Here we describe the technical detail and clinical outcome of the patients we performed our procedures.

MATERIAL AND METHODS

We treated 13 patients with posteriorly dislocated PCIOL and 9 patients with dropped cortical lens matter. Our 5 patients were with vitreous hemorrhage in which we performed phaeoemulsification before vitrectomy. In all of our 27 patients, three limbal incisions were made by using stab 15 degree microsurgery knife at 2'o clock, 10'o clock and 4 or 8'o clock (temporal lower site) positions. Right upper limbal incision was used for 23G vitrectomy cutter/23G end grasping forcep. Left limbal incision for 23G light pipe and 4 or 8'o clock (temporal lower site) positions. Right upper limbal incision was used for 23G vitrectomy cutter/23G end grasping forcep. Left limbal incision for 23G light pipe and 4 or 8'o clock limbal incision for anterior chamber maintainer. All the patients were followed for six months. On every follow up visual acuity , intraocular pressure (IOP) and fundus examination was recorded.

RESULTS

The clinical summaries of our patients are described in Table A, B and C. Group A patients were those having posteriorly dislocated PCIOL between age 36 to 60 Years. In all of these 13 patients, no significant per operative complication (subconjunctival hemorrhage, choroidal detachment) was noted and post operative visual acuity was improved. Only 4
patients were having corneal edema in their first follow up at 1 month. Our group B was of patients with dropped cortical lens matter between age 45 to 65 years. In these 9 patients, no major per operative complication was noted and all of those patients improved their visual acuity at their follow up.

Group C was comprising of 5 patients with vitreous hemorrhage between age 49 to 58. In 3 of these patients, there was striate keratopathy of different grades at their follow up of first week but all of these patients had improved their visual acuity and there was no significant complication noted during the procedure.

**DISCUSSION**

Vitrectomy was originated by Robert Machemer[10] with contributions from Thomas M. Aaberg in late 1969 and early 1970. The original purpose of vitrectomy was to remove clear ocular media and reattach the retina. A huge development was done in the field of instrumentation for vitrectomy by Steve Charles that revolutionized the method and outcomes of vitrectomy[13].

Now a days different approaches of vitrectomy are practiced i.e., pars plana approach , Open sky approach and transcorneal approach[14]. Vitrectomy may and may not be combined with internal tamponade with silicon oil[15,16] , gass (SF6)[17] or heavy liquids e.g.perfluorocarbon liquids (PFCL)[18,19]. Sometimes vitrectomy is combined with internal as well as external tamponade for the sake of integrity of the anatomy of retina[20].
We satisfactorily treated total 27 patients using 23 gauge trans corneal vitrectomy without making a conjunctival incision. 13 patients with dislocated PCIOL, 9 patients with retained lens matter in vitreous and 5 patients with vitreous hemorrhage underwent trans corneal three port vitrectomy. All patients got improved post-operative vision. Certain advantages using this route in selected patients like the conjunctiva and ocular surface was completely maintained. No subconjunctival hemorrhage was noticed in this study. Hypotony through pars plana approach is a common post operative consequence. In this study no sclerostomy wound was constructed and sclera remained intact. The vitreous confinement was also avoided through trans corneal three port vitrectomy showing a safe approach to avoid any infection and re detachment²¹.

There are also some disadvantages in instrument dealing with this approach of vitrectomy, like the hand movements are more restrictive than pars plana approach as both hands are closer to the eye. The cutter, light pipe and end grasping forceps may not reach the long axis, and in an attempt, cornea may get repeatedly touched and result into decompensated endothelium and post-operative poor visibility. Vitrectomy in the peripheral parts of the retina is technically difficult and some part of the residual vitreous can result into contraction and retinal detachment. However this route is quite suitable for patients having trabeculectomy.

REFERENCES