ORIGINAL ARTICLE

Trans Corneal Three Port Vitrectomy Without Conjunctival Incision

HUSSAIN AHMAD KHAQAN[1], ABDUL HYE[2], SAHER ABDUL HYE[3], *HASSAN RAZA CHAUDHARY[4], FARRUKH JAMEEL[5]*

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 detachment[1] or to clear the media . There are many other indications for this procedure e.g., Vitreous hemorrhage[2], retained fragments of lens matter[3], Macular hole[4], advance diabetic eye disease[5], endophthalmitis[6], intraocular foreign bodies[7], vein occlusion[8] and idiopathic epiretinal membrane[9]. The Pars Plana Vitrectomy , though, is widely accepted and conventional route for performing vitrectomy[10], 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-operativehypotony secondary to sclerostmies made for instruments[11]. Subconjunctival hemorrhage is another important consequence of pars plana approach for vtrectomyleading to cosmetically unacceptable looking eye[12].

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.

[1]Assistant Professor, [2]Professor, [3]HO, [4]PGR, [5]MO
Department of Ophthalmology, Amir UD Din Medical College, PGMI Lahore General Hospital, Lahore.
Correspondence to Dr. Hussain Ahmad Khaqan, Email: drkhaqan@hotmail.com, Cell 03004270233

MATERIAL AND METHODS

We treated 13 patients with posteriorly dislocated PCIOL and 9 patients with dropped cortical lens matter. Our 5 patients were with vitrous hemorrhage in which we performed phaecoemulsification before vitrectomy. In all of our 27 patients, threelimbal 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 limbal incision for anterior chamber maintainer. All the patients were followed for six months. On every follow up visual acuity , intra ocular 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. in3 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.

Group A: Patients with posteriorly Dislocated PCIOL

Age	Sex	Complications	Pre Op V/A	Post Op V/A 1 Month	Post Op V/A 6 Month
36	M	None	HM	6/18	6/12
53	M	None	HM	6/24	6/12
45	F	None	CF	6/12	6/9
56	M	None	HM	6/12	6/9
60	M	None	CF	6/36	6/18
57	F	None	HM	6/12	6/9
54	M	None	HM	6/24	6/24
48	F	None	HM	6/9	6/9
56	M	None	HM	6/18	6/18
54	M	None	CF	6/9	6/6
49	M	None	CF	6/18	6/12
50	F	None	HM	6/60	6/18
51	M	None	CF	6/12	6/9

V/A: Visual Acuity, Pre op: pre operative, post op: post operative, M= Male, F= Female, HM= Hand movements, CF= Counting fingers

Age	Sex	Complications	Pre Op V/A	Post Op V/A 1 Month	Post Op V/A 6 Month
45	M	None	HM	6/12	6/9
56	F	None	CF	6/18	6/12
65	F	None	HM	6/24	6/9
56	M	None	HM	6/12	6/9
50	F	None	CF	6/24	6/12
57	F	None	HM	6/12	6/9
55	M	None	CF	6/24	6/6
58	F	None	CF	6/9	6/9
65	F	None	HM	6/18	6/12

V/A: Visual Acuity, Pre op: pre operative, post op: post operative, M= Male, F= Female, HM= Hand movements, CF= Counting fingers

Group C: Patients with Vitrous Hemorrhage

No.	Age	Sex	Complications	Pre Op V/A	Post Op V/A 1 Month	Post Op V/A 6 Month
1	56	F	None	PL	6/36	6/12
2	53	M	None	HM	6/60	6/36
3	49	F	None	HM	6/36	6/24
4	56	M	None	CF	6/24	6/18
5	58	M	None	PL	6/12	6/9

V/A: Visual Acuity, Pre op: pre operative, post op: post operative, M= Male, F= Female, HM= Hand movements, CF= Counting fingers, PL= Perception of Light

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 temponade with silicon oil[15,16], gass (SF6)[17] or heavy liquids e.gperfluorocarbon liquids (PFCL)[18,19]. Sometimes vitrectomy is combined with internal as well as external temponade for the sake of integrity of the anatomy of retina[20].

We satisfactorily treated total 27 patients using 23 guage trans corneal vitrectomy without making a conjucticval 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 vitrous confinement was also avoided through trans corneal three port vitrectomy showing a safe approach to avoid any infection and re detachment[21].

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 vitrous can result into contraction and retinal detachment. However this route is quite suitable for patients having trabeculectomy.

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