Cataract Surgery and Uveitis

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The study of 30 patients was performed at Lahore General Hospital, and Institute Of Ophthalmology Mayo Hospital, Lahore from June 1989 to June 2003 for 14 years. Total number of eyes were 34 where 2 patients had both eyes. Age ranged from 12-65 years. Males were 11 and females were19. all the patients had planned extracapsular cataract extraction with IOL implantation. Total follow up period ranged from 1-5 years and best corrected visual acuity in these patients after surgery was 6/12 to 6/6. Post operatively, eyes had vitreous membranes and glaucomatous reaction.

Key words: Best corrected visual acuity, anterior chamber, retinal detachment, intraocular lens

Cataract surgery could exacerbate uveitis in post-operative phases, at times when intracapsular cataract extraction was done. Now we can perform extracapsular cataract surgery with implantation of intraocular lenses. We evaluate the long term results of cataract surgery with 10L implantations. Uveitis leads to complicated cataract which causes visual deteriorations in addition to the macular pathology, vitreous haze and anterior chamber changes. Cataract extraction in post uveitic patients with IOL implantation was performed to evaluate visual outcome on long term basis.

Materials and methods

34 eyes of 30 patients were operated in our department where 2 patients were operated on both eyes on separate sittings. Males were 11, females were19. 21 out of them were right sided while 13 were left sided. Total study period ranged from June 89 to June 2003. 14 years was total study time. Study was conducted at 2 places, Eye Department of LGH, Lahore and Institute Of Ophthalmology Mayo Hospital, Lahore.

Patients were selected from the out patient department of these hospitals. Various age groups of patients ranged from 12-65 years.

Table 1. Age

Age in years	n=	%age
12-20	8	35.5
21-30	8	35.5
31-40	5	14.7
41-50	3	3.8
51-60	5	14.7
61-70	4	11.7

Maximum no. of patients fall into the age group of 12-30 years and they were of relatively younger age group. Male to female ratio was detected and they showed as under :

Table 2. Male to female ratio

Gender	n=	%age
Male	11	36.6
Female	19	63.3

A through evaluation was made in these patients pre-operatively and various parameters were evaluated as the visual acuity, intraocular pressure and biomicroscopic examination to evaluate the anterior segment as well as the posterior segment with fully dilated pupils. Emphasis was laid on the papillary examination for synichae and atrophic patches in iris stroma. We examined our patients with three mirror Goldman contact lens to evaluate the angle of anterior chamber and posterior segment of eye for any active or quiet lesion at the posterior pole or periphery of choroid and retina.

Table 3. Various ocular associations :

Various lesions	n=	%age
Visual acuity PL+ HM	16 + 14	53.3 + 46.6
KPS	25	83.3
0-1 cells + flare	30	100
Posterior synichae	18	60
IOP > 20mmHg	9	30
Iris atrophy	3	10
Complicated cataract (post. subcapsular opacity)	30	100
Posterior segment chorioretinal scars.	10	33.3

Pre-operative intraocular pressure in our series ranged from 10-29 mmHg. This was taken with both Schiotz and Goldman Applanation Tonometer. We asked for systemic abnormalities associated with uveitis as joint pains, chest abnormalities, gastrointestinal associations of disease process.

Table 4 showing systemic association:

Disease	n=	%age
FUS	4	13.3
Cervical ache	5	16.6
Joint involvement	6	20
GIT	2	6.6
Respiratory anomalies	3	10

After proper local and systemic assessment of these patients, we admitted them. Patients with signs of active inflammation, cells more than 2-3 per field of 1x3mm strip, flare of 2 or more grades and multiple kp, at the back

of cornea were excluded from this study and were advised for therapy to control the active phase of disease. Only those patients were included in the study which were well controlled and showed no signs of active disease process.

These patients were put on topical steroids and NSAIDs for systemic use like piroxicam (feldene) 10mg once daily for atleast 10-15 days before surgery. This was an attempt to keep the inflammatory process under control.

Routine investigations like urine examination, blood examination, X-ray chest, rheumatoid factors and ANAs in a few cases was done to exclude the possibility of systemic involvement.

These patients were operated with routine extracapsular cataract extraction with intraocular lens implantation. 22 patients were operated under local anaesthesia, while 8 patients who were under the age group of 20 years were operated under general anaesthesia.

Surgical procedure

1. Pupillary dilatation was attempted by Tropicamide 1% eye drops and Phenylephrine 10% eye drops.
2. Local akinesia and analgesia were obtained by topical and local infiltration by O'Brien and retrobulbar injection.
3. Routine antisepsis and draping of the eye was performed.
4. Superior superficial limbal incisions were made, synechiolysis was performed by cystitome and anterior capsulotomy was done. Great care was observed for any unnecessary intraocular manipulation.
5. Peripheral iridectomy was done in every case. Then nucleus & cortical matter were evacuated from eye.
6. Posterior capsular polishing was done. There were 5 cases of posterior capsular plaques, which were fibrocalcenous in nature. They were removed by delamination.
7. Intraocular lenses were implanted in all cases under viscoelastic cushion. Wounds were stitched with 10/0 Nylon monofilament suture.
8. In our series, a lot of pigment release was observed which was irrigated and aspirated out of the AC.
9. At the end of procedure, long acting subconjunctival injection of steroid and antibiotic was given. We used kenacort and gentacin injections in our series.
10. After 24 hours, we opened up their bandage and started the steroid and antibiotic drugs topically at half hourly interval for 24 hours.
11. We did not use anti-mitotic drugs in our series.[1]
12. We observed the following abnormal presentations per-operatively :

These abnormal presentations were all due to prolonged uveitic process going on in these eyes. In 3 eyes we had performed core vitrectomy to clear central vitreous which was hazy due to vitreous bands and organized exudates, to get good fundal glow.

Table for abnormal presentations per-operatively

Presentation	N=	%age
Dense posterior synichae	10	33.3
Abnormal pigment release	28	93.3
Posterior capsular plaque	5	16.6
Faint fundal glow	8	26.5

Results

34 eyes of 30 patients were operated over a period of 14 years. Two patients were operated for both eyes at different sittings with an interval of 1and 2 years respectively. The average follow up time was 6 months to 5 years, we evaluated our results on the basis of final visual outcome, intraocular pressure and the post-operative anterior chamber activity. Indirect ophthalmoscopy was performed to evaluate the causes of low visual acuity in patients of chronic uveitis.

Final visual acuity outcome in patients ranged from 6/60 to 6/6. The best corrected visual acuity was assessed after 12 weeks when the corneoscleral sutures were completely removed. BCVA in majority of the cases fall into 6/12 and N5 for reading. This was aided visual acuity with glasses.

VA	n=	%age
< 3/60	2	3
6/60	2	5.8
6/35	1	2.9
6/24	2	5.8
6/18	6	17.6
6/12	10	29.4
6/9	8	23.5
6/6	3	8.8

79.4% patients had visual acuity up to 6/18. The rest of 20.6% patients had less than 6/18 and 5.8% patients had < 3/60 vision, which was attributed to the macular edema, epiretinal membranes and generalized vitreous haze due to bands and veils.

Intraocular pressure in our series was ranging 14-22mm Hg. In 3 patients it ranged between 34 and 55 mmHg. In these patients medical measures failed to control the intraocular pressure and drainage surgery was done later in controlling the pressure after 3 to 6 weeks period post-operatively. In our series, majority of the patients had shown anterior chamber activity immediately in post-operative phases. This was characterized by cells and flare in AC with pigment dust on the posterior corneal surface with pseudophakic pigment deposits. These patients were put on steroid drops half hourly for 24 hours then 1 hourly for next 5 days and then 3 hourly for next 2 weeks. Then 3 times a day till the 12th week post-operative period was complete. In case where there was severe anterior chamber reaction characterized by pupillary

membranes, subconjunctival steroid mixed with antibiotic were given in alternate days or daily depending upon the reaction.

Observation	N=	%age
Corneal edema	28	82.3
Cell 0-4	34	100
Posterior synichae	15	44.1
Hypopyon	1	2.9

Other complications which were observed in our series per-operatively and post-operatively were as under :

Complications	n=	%age
Post capsular rent	3	8.8
Post capsular plaques	5	14.7
Fibrin on papillary membrane	3	8.8
Posterior synichae	15	4
N.V. glaucoma	1	2.9
After cataract	8	22.5
RD	1	2.9

These complications were more expected in chronic cases which were of prolonged duration and had been using treatment for their disease process. These patients were advised to continue the steroid topically once at night and to keep them under observation. Depending upon the severity and involvement of posterior segment, NSAIDs like piroxicam 10mg once daily or on alternate days were also prescribed to keep their inflammatory process under control.

Discussion

Uveitis involves all the layers of uveal tract as iris, ciliary body and choriod. It affects the crystalline lens leading to complicated cataract, which markedly reduces the vision. Intracapsular cataract extraction sometimes exacerbates the reaction. extracapsular cataract extraction is safe and intraocular lens implantation helps in improving the vision. Secondly, the uveal reaction is of limited nature than otherwise would have been expected with intracapsular cataract extraction.

We attempted the PECCE with PCL in cases of juvenile rheumatoid type and cases of bilateral pan uveitis, pars planitis and anterior uveitis. In our series, almost 80% of the cases were better with 6/18 or more vision. All had PCL implantation.

Foster CS et al[2] and Holland GN[3] have done anterior vitrectomy and lensectomy in their series for the cataract with uveitis, whereas we had not performed this procedure in our cases. Flyn HW et al[4] also supports the idea of lensectomy and anterior vitrectomy.

We could get the detailed laboratory help in one patient. 2 underwent ANAs and rheumatoid factor test, which was positive in both of them. Generally, the intraocular pressure in immediate post-op phase was towards the higher side in few cases, near 22mmHg, which was due to inflammatory reaction in AC which was settled with anti-inflammatory drugs within 1-2 weeks time. 3 of our patients had high intraocular pressure upto 55mmHg. For those we had to drain the eye by trabeculectomy. Studies conducted by Soheilian M et al[5] have 3% of their cases which developed glaucoma. Kang YH et al[6] have described even neovascular glaucoma in one of the patients in their series. Patients who were followed up in the OPD, were generally normotensive. The patients could be followed even after removal of their sutures, after 3 months.

Membrane formation and the posterior capsular opacification were common complications in our series and had developed a serious problem. Membrane develop in uveitic eyes which are not undergoing surgery[7]. We performed core vitrectomy in those cases of vitreous membranes pre-operatively to clear the vitreous, otherwise YAG capsulotomy was done after 6 months post-operatively.

IOL when implanted in adults with extracapsular cataract extraction causes less posterior capsular opacification. Nishi O[8] has described low incidence of posterior capsular opacification. Vasavada[9] reported anterior capsulotomy and vitrectomy reduces the incidence of posterior capsular opacification.

Our series of patients were kept under observation and we used decadron eye drops and anti-inflammatory drugs. This suppressed the inflammation and eyes remained quiet. Every time they visited, we had monitored their IOP and AC activity. Majority of the patients were happy from visual point of view and IOP and AC activity. A decreased post.-operative inflammation has been reported by Trans. TV et al[10] in cases of IOL implantation.

Ram J et al[11] have reported 82.8% success of visual outcome 6/12 in their series. Other complications are also remarkably described as recurrent uveitis, glaucoma, pigment deposit on lens surface, vitreous opacities and posterior capsular opacification.

Kaufman AH and Foster CS[12] have recommended absolute control of inflammation in patients with pars planitis, followed by cataract extraction and intraocular lens implantation can well be treated. Macular edema, epiretinal membrane and optic atrophy have been reported in their series. Pleyer U et al[13] have suggested that in selected cases, the IOL implantation can be well tolerated without major complications. He has reported high IOP and macular edema in his series with the same cause of low vision.

Dews M et al[14] have reported a success rate of 90.5% in visual recovery in patients with PCL implantation in the bag. He recommends surgery with acceptable risk in patients of Fuch's heterochromia iridocyclitis. He has mentioned fibrinous exudative reaction in AC with hyphema and posterior synichae. Topical and systemic steroids controlled the problem.

Foster et al[15] have suggested in their results that uveitic patients can have improved vision without

unacceptable risk for 1-3 years after extracapsular cataract extraction and PC IOL implantation, under cover of steroids.

Seamone CD et al[16] have concluded in their study that the presence of uveitis does not exclude the posterior chamber pseudophakia and provides good visual outcome and does not show a greater risk of post-operative complications than those left aphakic.

Foster CS et al[17] have recommended removal of IOL after implantation in cases of uveitis which we had not done in any of our case in this series.

Conclusion

Intraocular lens implantation within the bag of eyes where uveitis is well controlled by steroids is no more a big risk to visual outcome. This can be operated safely and these eyes can be well managed post-operatively if kept under observation.

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