

A Clinical Study of Lens Induced Glaucoma

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Abstract: Glaucoma is one of the major causes of blindness in our country. Like many other glaucoma the management of LENS INDUCED GLAUCOMA is also challenging because earlier surgical management will make the difference in the final visual acuity and prognosis.

Keywords: Congenital glaucoma . Primary glaucoma, lens induced glaucoma

The glaucomas are generally divided into :

- 1) Congenital glaucoma
- 2) Primary glaucoma
- 3) Secondary glaucoma

Among the secondary glaucomas, glaucomas caused by lens are fairly common. They are :

- 1) Phacomorphic glaucoma
- 2) Phacolytic glaucoma
- 3) Lens particle glaucoma
- 4) Glaucoma associated with phacogenic uveitis
- 5) Glaucoma associated with phacoanaphy laxis

AIM & OBJECTIVES OF STUDY

The present study deals with type of lens induced glaucomas, the duration of lens induced glaucomas and the preoperative IOP control and its relation to final visual prognosis and management – simple lens extraction Vs. combined surgery.

MATERIAL & METHODS

A prospective study of 50 patients attending the ophthalmic department of GGH, Kakinada, diagnosed as LIG, on the basis of clinical symptoms and signs. Clinical features included pain, loss of vision, redness of the eye, presence of an intumescent, mature or hypermature cataract associated with raised intraocular pressure of more than 21 mm Hg.

A detailed clinical examination of both eyes including the status of lens, depth of anterior chamber by slit lamp biomicroscopy, tonometry and Gonioscopy.

Based on the slit lamp examination, the type of LIG was determined.

On clinical examination the phacomorphic glaucoma was diagnosed by circumcorneal congestion, corneal oedema, shallow anterior chamber, dilated and fixed pupil, intumescent cataract.

Likewise the patients were diagnosed with phacolytic glaucoma by marked diminution of vision, corneal oedema, normal or deep anterior chamber containing floating lens proteins and/ or pseudohypopyon in some cases, and hypermature morgagnian cataractous lens in some cases.

In these patients preoperative treatment to reduce IOP included topical timolol, oral acetazolamide and intravenous mannitol was given.

Surgeries done are combined surgery, SICS + (PC) IOL with iridectomy SICS + (PC) IOL, ECCE + (PC) IOL with iridectomy, ECCE + (PC) IOL was done for phacomorphic glaucoma cases. SICS + (PC) IOL with iridectomy was done for phacolytic glaucoma cases.

Postoperative stay varied from 2 to 5 days. During postoperative period, antibiotic steroid drops, cycloplegics, systemic antibiotic and anti-inflammatory drugs were used.

At discharge a detailed examination including uncorrected VA, IOP, slit lamp examination, fundus examination was performed. The cause of poor visual acuity in some cases was recorded. Patients were discharged with instruction to use topical antibiotic steroid combination 6 times/ day and return for follow up at 1 week, 2 weeks, 4 weeks and 6 weeks.

2.Observations and Tables

Table – 1:Age Incidence

Total No. of Lens induced glaucomas-50

Age in years	No. of cases	Percentage
20-39	1	2%
40-50	10	20%
> 50	39	78%

Maximum

numbers of lens induced glaucoma were seen in the age group of above 50 years (78%)[1].

Table – 2:Sex Incidence

Total No. of Lens induced glaucomas-50

Sex	No. of Cases	Percentage
Male	17	34%
Female	33	66%

Lens

induced glaucomas were common in females M:F = 1:1.94[2]

Table – 3:Duration of symptoms

Total No. of Lens induced glaucoma-50

Duration (in days)	No. of Cases	Percentage
1-5	22	44%
5-10	21	44%
10-15	4	8%
> 15	3	4%

About 86% of cases attended within 10 days.

Table – 4

Range of IOP – Total No. of LIG-50

In 96% of cases the intraocular pressure was more than 30mm

Range of IOP	No. of Cases	Percentage
20-25	0	0
25-30	2	4%
30-40	13	26%
> 40	35	70%

Hg.

Table – 5

Total No. of Lens induced glaucomas-50

Type of LIG	No. of Cases	Percentage
Phacomorphic glaucoma	31	62%
Phacolytic glaucoma	19	38%
Traumatic cataract	0	0
Pseudoexfoliation	0	0
Lens Particle	0	0
Phacoanaphy lactic	0	0

Phacomorphic glaucoma cases are more and contribute 62% in total lens induced glaucomas.

Table – 6

Total Number of Lens induced glaucomas-50

Nature of Surgery	No. of Cases	Percentage
Combined surgery	3	6%
SICS with PC IOL	28	56%
SICS PC IOL with iridectomy	2	4%
ECCE with PC IOL	14	28%
ECCE with PC IOL with iridectomy	2	4%
Cyclocryotherapy	1	2%

Table – 7

Total No. of Lens induced glaucoma-50

In 76% of the cases fundus was normal postoperatively. In 12% of cases ARMD was seen. 8% of cases developed

Fundus	No. of Cases	Percentage
Normal fundus	38	76%
ARMD	6	12%
Glaucomatous optic atrophy	4	8%
Cystoid macular edema	2	4%

glaucomatous optic atrophy. 4% of cases developed cystoid macular oedema.

Table – 8

Vision after treatment

Total No. of Lens induced glaucoma-50

Post op visual acuity	No. of Cases	Percentage
6/60 (or) Less than 6/60	5	10%
6/60 – 6/24	4	8%
6/24 – 6/18	1	2%
6/12 - 6/6	40	80%

More than 80% of cases regained fair visual acuity

3.Discussion

Age : We have observed that 90% of our cases were over the age of 50 years who had the maximum incidence of cataracts (Table No.1). The onset of senile cataract is earlier in Indian patients[3].

The problem of phacomorphic glaucoma is a rather common entity in rural India, owing to delay in getting the cataract removed, and the preponderance of cortical matter, compared with the Western world. It is the observation of Dr. S.K. Angra et.al, R.P. Center for ophthalmic sciences, New Delhi. According to Dr. Damodar Pradan et.al., Nepal 35% cases occurring in patients aged under 60 years[4].

Sex : The incidence of LIG in females was more common than males in our study, in a ratio of 2:1. According to Dr. S.K. Angra et.al study it was F:M ratio 3:1. According to Dr.

Damodar et.al, it was F:M – 1.7:1. In the above two studies females predominance was more common. The reason could be lesser attention received by old women in rural India, and also females having shallow anterior chamber, thus making them more prone to angle closure.

DURATION OF SYMPTOMS

These patients had painless progressive gradual fall of vision initially of variable duration, similar to cases of senile cataract. But suddenly pain, redness, headache, watering started. In our study 86% of patients attended the hospital within 10 days.

INTRAOCULAR PRESSURE

In our study 96% of cases IOP was more than 30mm of Hg. We observed that the height of intraocular pressure has no relationship with the duration of attack, and type of cataract. In all these cases IOP decreased with medical management. But in two cases the IOP was high because of PAS. In study of VARMA et.al in 37.5% eyes could not be controlled medically.

These eyes were found to have PAS and longer duration of attack.

TYPE OF LENS INDUCED GLAUCOMAS

In our study of Lens induced glaucoma cases, phacomorphic glaucoma cases (31%) are more common. This may, be due to high incidence of cortical cataracts in Indian Population. According to Dr. Damodar Pradhan et.al. in their study 72% of phacomorphic glaucoma cases, 28% of phacolytic glaucoma cases.

SURGERY

In our study of Lens induced glaucomas, there are 31 cases of phacomorphic glaucoma. Combined surgery was done for two (2) cases, out of the 31 phacomorphic glaucoma cases. Combined surgery was done, in those cases with longer duration of attack, where angle of the anterior chamber was closed by peripheral anterior synechiae (PAS).

SICS with PC IOL was done for 21 cases of phacomorphic glaucoma, with short duration of attack, where PAS was not seen. SICS with PC IOL with iridotomy done, in one case of phacomorphic glaucoma[5].

There are 19 Phacolytic glaucoma cases. SICS with PC IOL was done in 13 cases of phacolytic glaucoma with short duration of attack. In three out of those 19 cases, SICS PC IOL with iridectomy was done ECCE with PC IOL done in one case of phacolytic glaucoma.

Posterior capsule rupture and vitreous disturbance occurred in two cases of phacolytic glaucoma, where vitrectomy was done with no IOL implantation.

ECCE with trabeculectomy was done, in 1 case of phacolytic glaucoma, with one month duration of attack with hypermature cataract.

Cyclocryo therapy was done in 1 case of phacolytic glaucoma with corneal decompensation and No PL.

POSTOPERATIVE PERIOD

In our study, few cases have developed striate Keratitis, in the early postoperative period. 8% of cases have developed glaucomatous optic atrophy[6].

FOLLOWUP

Visual acuity, intraocular pressure and fundus were chosen as the parameters for follow up.

VISUAL ACUITY

In our study, more than 80% of cases regained fair visual acuity. The final visual acuity was related more to the duration of attack than to the type of surgery. Visual prognosis is poor, if they delay seeking treatment.

IOP

In our study intraocular pressure was normal following, lens extraction in all cases.

FUNDUS

In our study, 76% of cases, the fundus was normal postoperatively. In 8% of cases, glaucomatous optic atrophy was seen, 12% of cases ARMD was seen, in 4% of cases cystoids macular oedema was seen.

4. Conclusion

- Maximum number of lens induced glaucoma cases are seen, in the age group of above 50 years. This is due to the fact, that these cases are mostly senile cataracts.
- The incidence is slightly more in females.
- There is no significant precipitating cause associated with lens induced glaucoma cases.
- More than 86% of patients attended the hospital after 72 hours, which is responsible for poor visual prognosis in some cases
- None of our cases had developed an acute attack in the fellow eye during the follow up period.
- In 96% of patients the intraocular pressure was more than 30 mm Hg.

- Mature or hypermature cataracts were responsible for maximum number of cases followed by immature cataracts.
- Phacomorphic glaucoma was more common (62%) among the lens induced – glaucoma cases.
- Duration of acute attack was not related to the height of intra ocular pressure[7].
- Most of the cases of IOP was well controlled preoperatively (96%), in 4% of cases the IOP was high because of PAS.
- In 76% of the cases fundus was normal postoperatively. 8% of cases have developed glaucomatous optic atrophy
- More than 80% of the canes have regained fair visual acuity.
- Poor visual acuity in 10% of the cases due to delay in seeking Treatment.

5. References

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