



A Clinical Profile and visual outcome of "Lens induced Glaucomas"

KEYWORDS

Intra ocular pressure, cataract, LIG, Early diagnosis.

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ABSTRACT 1) **Aims are** : To study the clinical profile with respect to age and sex distribution, and various types of lens induced glaucomas.

2) To evaluate the post operative outcome with respect to visual acuity and Intra ocular pressure of lens induced Glaucomas.

Methods: 59 cases of different types of LIG's admitted in Regional Eye Hospital, Kurnool were evaluated and managed.

Results: Out of 59 patients 26(44.1%) were males and 33(55.9%) were females. Phacomorphic glaucoma in 37(62.7%) and phacolytic glaucoma in 20(33.9%). All patients underwent surgery or combined surgery. Post operative BCVA at 4 weeks of 6/6 – 6/12 in 33(55.9%) only in 5(8.5%) < 6/60. However there was significant reduction of mean IOP at 4 week follow up was 15.48 mm Hg from the baseline IOP at presentation.

Conclusion: Early diagnosis of LIG cases and referral by peripheral health workers and ophthalmic assistants among rural population and efficient management at higher centre can reduce the incidence and complications.

INTRODUCTION:

Glaucomas in which the lens plays a role, either by size, position or by causing inflammation are classified as lens induced glaucomas, a type of secondary glaucoma and is an ophthalmic emergency. The phacomorphic glaucoma and dislocated lens cause increased pupillary block and secondary angle closure glaucoma. Phacolytic glaucoma in which leakage of protein from intact cataract, lens particle glaucoma in which lens protein liberated by trauma or surgery and in phacoanaphylaxis an immune response to lens protein produces granulomatous inflammation and these cause secondary open angle glaucomas. Hence these different glaucomas occurring in the elderly have the lens as common in the role of increasing the IOP. These share the features of progressive optic neuropathy (open angle) or occlusion of trabecular meshwork as in (closed angles). In the developing world, like India financial, cultural and psychosocial barriers for access to excellent surgical services still exist. There is an ever increasing backlog of cataract due population explosion, increased life expectancy and low utilization of eye care services in rural community, where lens induced glaucomas are a common cause of ocular morbidity. The preferred treatment is planned extra capsular cataract extraction with posterior chamber IOL implantation (ECCE with PCIOL). A good post operative visual recovery in these cases are guarded unless diagnosed early and managed efficiently.

MATERIALS AND METHODS:

59 cases who were presented with different types of lens induced glaucomas admitted in Regional Eye Hospital, Kurnool were evaluated and managed after excluding pre existing primary glaucoma, secondary glaucomas other than LIGs, and patients unfit for surgery due to poor general condition. All patients diagnosed as LIG on the basis of clinical symptoms and signs were included. Clinical features as pain, loss of vision, redness of the eye, with intumescent, mature or hypermature cataract with a raised IOP more than 21mm Hg except those who had received prior antiglaucoma treatment. All these patients subjected to visual acuity, slit lamp examination of both eyes for sta-

tus of the lens, depth of anterior chamber considered shallow if the slit bean adjacent to limbus is less than 1/4th of corneal thickness and the type of LIG is determined. IOP measurement done using a Goldmann Applanation tonometer. A preoperative medication included topical timolol 0.5% twice a day, oral acetazolamide 250 mg twice or thrice a day to reduce the IOP and IV mannitol 20%stratum just before surgery in refractory cases. Topical antibiotics like ciprofloxacin, or Gatifloxacin along with mydriatics 10% phenylephrine just before surgery. Systemic oral or iv ciprofloxacin (500mg) 12 hourly given. In phacolytic glaucoma topical prednisolone acetate every 4th hourly added. Under peribulbar block a planned sutureless scleral tunnel extracapsular cataract extraction (SICS) with either a anterior or posterior chamber intraocular lens implantation (PCIOL or ACIOL) was done in all cases.

OBSERVATIONS AND DISCUSSION:

A total of 59 cases of LIG admitted at the Regional Eye Hospital, Kurnool were studied for a period of two years. In our study majority of patients were between 61 and 70 years (55.9%) out of 59 patients, 26(44.1%) were males and 33(55.9%)were females and the male : female ratio was 0.79 : 1(Tab-1). Right eye involved in 32 (54.2%) and 27(45.8%) Left eye involved. The most common type LIG presented was phacomorphic glaucoma 37(62.7%), Phacolytic 20 (33.9%) and lens particle and pupillary block glaucoma in 1(1.7%) in our study (Tab.2) Majority of patients presented between 1 – 7 days duration. The mean duration of presentation for phacomorphic glaucoma is 11.9 days and phacolytic cases was 17.68 days. Out of 59 patients none had visual acuity better than hand movements (HM) positive and 7(11.9%) had an inaccurate projection of rays (PR) (Tab.3). Out of 59 patients 33(55.9%) gained a good visual acuity of 6/6 – 6/12 and only 5(8.5%) had visual acuity less than 6/60 after 4 weeks. (Tab.4). In this study mean IOP at presentation was 40.28mm Hg. The mean IOP after 4 week follow up was 15.48 mm Hg. Only 4(6.8%) patients had IOP 21 – 30 mm Hg at 4 week follow up were put on 0.5% timolol BD. (Tab.5). Out of 59 patients 54(91.6%) underwent SICS with PCIOL implanta-

tion, 3(5.1%) underwent SICS with ACIOL implanan, and 2(3.3%) underwent SICS with trabeculectomy (Tab.6). Out of 37 cases of Phacomorphic glaucoma 19 (51.4%) achieved 6/6 – 6/12 and 14(37.8%) 6/18 – 6/60 and 4(10.8%) < 6/60. Out of 20 cases of phacolytic glaucoma 13(65%) achieved 6/6 – 6/12, 6(30%) of 6/18 – 6/60 and 1(5%) < 6/60 showing visual prognosis is better for phacolytic than phacomorphic group. Out of 9 patients who presented with IOP of 21 – 30 mm Hg 9(100%) achieved good visual out come BCVA at 4 week follow up.

Table :-1
Sex Distribution of patients with lens induced glaucoma

Sex	Number of patients (%)
Male	26(44.1%)
Female	33(55.9%)
Total	26(100%)

Table :-2
Distribution of Lens induced glaucoma subgroups

Subgroups of lens induced glaucoma	Number of patients (%)
Phacomorphic glaucoma	37 (62.7%)
Phacolytic glaucoma	20 (33.9%)
Lens particle glaucoma	1 (1.7%)
Pupillary block glaucoma	1 (1.7%)
Total	59 (100%)

Table :- 3
Visual acuity at presentation

Visual acuity at presentation	Number of Patients (%)
Hand movements positive	12 (20.3%)
Perception of light positive projection of rays accurate	40 (67.8%)
Perception of light positive projection of rays inaccurate	7 (11.9%)
Total	59 (100%)

Table :- 4
Visual acuity at 4 week follow up

Visual acuity after 4 weeks	Number of patients (%)
6/6 – 6/12	33 (55.9%)
6/18 – 6/60	21 (35.6%)
<6/60	5 (8.5%)
Total	59 (100%)

Table :-5
Intra ocular pressure at presentation and at 4 week follow up

IOP Levels (mm of Hg)	At presentation	At 4 week follow up
1 -20	---	54 (91.5%)
21 – 30	9 (15.2%)	4 (6.8%)
31 – 40	24 (40.7%)	1 (1.7%)
>40	26 (44.1%)	---
Total	59 (100%)	59 (100%)

Table :-6
Surgical procedures done

Procedure	Number of Patients (%)
SICS + PCIOL	54 (91.6%)
SICS + ACIOL	3 (5.1%)
SICS + PCIOL + Trabeculectomy	2 (3.3%)
Total	59 (100%)

SUMMARY AND CONCLUSION:

This study comprises 59 cases of LIG admitted in Regional Eye Hospital in a period of two years. It is observed majority are in the age group 61 – 70 years (55.9%) indicating that lens induced glaucomas are condition of old age. Females seemed to have increased risk of developing LIG compared to males in this study. Reasons could be due to socio economic restraints, low literacy rate and less awareness in females. The number of patients with poor visual out come is less (8.5%) in our study compared to pradhan et al. (21%) due earlier presentation i.e (less than 15 days). Late presentation is a risk factor for poor visual outcome. A good visual acuity (6/6 – 6/12) achieved in 65% phacolytic glaucoma compared to 51.4% of phacomorphic suggesting increased risk of developing poor visual out come in phacomorphic glaucomas. Out of 9 who presented with IOP less than 30 mm Hg all (100%) achieved good visual acuity and out of 50 who presented more than IOP 30 mm Hg 24(48%) good visual acuity, 21(42%) moderate vision and 5(10%) poor vision at 4 week follow up which was found to be statistically significant ($\chi^2 = 18.8, p=0.009$) as compared with other studies. In our study we felt late presentation with a sustained rise of IOP for a long period is bad prognostic factor for post operative good visual acuity. A delay of more than 2 weeks, and IOP more than 30 mm Hg result in optic atrophy and bullous keratopathy which permanently reduce the vision. Hence health education regarding cataract and its complication like LIG by peripheral health workers and ophthalmic assistants among the rural community can reduce the incidence and complications of LIG

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