



A CLINICAL STUDY AND MANAGEMENT OF VISUAL OUTCOMES IN PATIENTS OF LENS INDUCED GLAUCOMA

Ophthalmology

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ABSTRACT

The main objective of our study was to study clinical profile of lens induced glaucoma, to find out visual prognostic factors and to find the visual outcome and management of lens induced glaucoma. This examination included 64 instances of LIG and we found that the most incessant kind of LIG was phacomorphic glaucoma (71.8%) trailed by phacolytic glaucoma (28.1%).

The mean age was 65.27 ± 7.75 . It was watched that the occurrence of LIG in females was higher (65.62%) than guys (34.38%).

None of the LIG in the present examination had vision superior to hand development near face. Main share of the patients had great vision in the other eye because of which they disregarded the influenced eye till they created LIG prompting torment amid the season of introduction.

Destitution, numbness, absence of education, poor financial status, word related impulses, long separation to doctor's facility, absence of mindfulness and absence of offices in the country zone are contributing components for delay in ophthalmic conference for the benefit of patients.

Medicinal line of administration must be started to decrease the IOP and to soothe the manifestations, however surgery as cataract removal is the authoritative treatment.

The rate of intraoperative confusion was more when contrasted with ordinary populace, and the rate of postoperative iritis was more in LIG when contrasted with typical populace and all the more so if related with intraoperative difficulty.

The visual recuperation was genuinely great in all cases that have experienced treatment very early. The best redressed visual acuity of 6/12 following a month and a half of surgery was available in 56.25%, 6/60-6/18 of every 34.37% and under 6/60 of every 9.37%. It was watched 66.66% had best redressed visual sharpness of 6/12 or better in cases with term of 1-10 days and when the length of assault was over 21 days 16.66% of the patients had BCVA of 6/18-6/60 and 66.66% accomplished $BCVA \leq 6/60$, which was clinically and factually critical ($p\text{-value}=0.0001$)

Glaucomatous change in optic disc can happen inside a brief term of intense glaucoma and result in poor visual outcome.

In this way as the term of assault expands last rectified visual keenness diminishes additionally as the length of assault increments ischemic optic plate changes likewise increments.

KEYWORDS

Screening, LIG, Lens induced glaucoma, Phacomorphic glaucoma, Phacolytic glaucoma, Management of lig, Relation of symptom and vision, Visual acuity in lig.

INTRODUCTION:

Lens induced glaucoma was first described by Gifford,¹ in 1900 and Von Reuss independent of each other. While Gifford described it as glaucoma associated with hyper mature cataract,² Reuss noted it as spontaneous absorption of lens substance through intact capsule. Later different workers,^{3,4,5} described such types of cases under different names like lens induced glaucoma, lens induced uveitis with glaucoma, phacotoxic glaucoma, phacogenetic and phacogenic glaucoma, phacolytic glaucoma.

LIG is a common cause of ocular morbidity especially in rural population.⁶ Lens induced glaucoma in elderly age group is characterized by secondary glaucoma, seen in immature, mature and hypermature cataracts with normal angles in other eye, normal IOP in the other eye and prompt relief of symptoms and restoration of vision after cataract extraction in affected eye. This is a preventive and curable condition if diagnosed and treated at the earliest.

In LIG the lens is the culprit for the increased IOP.⁷ LIG is mostly due to secondary angle closure (Phacomorphic) or secondary open angle (Phacolytic) glaucoma.⁸ In most cases the mode of treatment is ECCE with PCIOL implantation.^{9,10}

Due to large backlog of cataracts, poor health education, poor socio economic status, fear of operation, LIG is more common in rural population.

This study shows that LIG can be effectively managed in the majority of cases by surgical intervention in the early presenting period. This study deals with age and sex wise distribution, clinical profile and prognostic factors.

AIM AND OBJECTIVES:

1. To study the clinical outline of lens induced glaucoma.
2. To find out visual predictive factors.
3. To assess visual result in lens induced glaucoma after cataract surgery.

MATERIALS AND METHODS:

- STUDY DESIGN- Prospective, Interventional Study.
- STUDY SETTING- the study will be conducted in dept. of ophthalmology, acharya vinobha bhave hospital attached to jnmc sawangi (meghe), wardha, maharashtra.
- PERIOD OF STUDY- 2 years for data collection and 6 months for data analysis.
- SAMPLE SIZE- 64.

Detailed history was taken, clinical examination of all cases was done, i.e., general examination, adenexa, anterior and posterior segment examination will be done, lens will be examined for its transparency, size, shape, position, fundus examination and gonioscopy will be done. Routine investigations like BP recording, urine sugar was done.



Figure 3: Clinical Pictures Of Lig



Figure 2: Phacomorphic Lig



Figure 3: Phacolytic Lig

INCLUSION CRITERIA:

- All the patients giving informed consent for the study
- All cases of cataract with age >40 years admitted in eye ward, diagnosed with lens induced glaucoma
- Patients are selected irrespective of their sex..

EXCLUSION CRITERIA:

- Patients with known history of any type of glaucoma.
- Patients with any posterior segment disorder.
- Traumatic cataracts with lens particle glaucoma and lens induced glaucoma due to subluxation, dislocation of lens.
- Complicated cataracts.
- Corneal dystrophies and corneal opacities with cataract.

OBSERVATION:

- Among 64 cases of LIG, phacomorphic glaucoma cases was 46 patients (71.8%) and phacolytic glaucoma cases 18 patients (28.1%).
- The mean age for phacomorphic glaucoma cases was 62.27±10.72 years (range 45-88), and mean age for phacolytic glaucoma cases was 64.44±8.69 years (range 43-88).
- The chi square value came out to be 0.38 and p-value = 0.53 showing that no significant association existed in the age group of the phacomorphic and phacolytic glaucoma.
- The percentage of lens induced glaucoma in females was more (65.62%) than males (34.37%).
- Widely held of the study patients who presented with LIG were from rural place.
- Most of the study subjects in our study were illiterate. 44 subjects (68.75%) were illiterate.
- Mainstay of the patients of LIG were farmers or laborers. Among 64 patients of LIG, 15 subjects (23.43%) were farmers or laborers and 37 subjects (57.81%), are dependent on family members.
- The predominant reason for late cataract extraction was good vision in the fellow eye in 29 patients (45.31%).
- The mean duration of symptoms was 1.69±0.88 of 64 cases 36 cases (56.25%) presented with symptoms of ≤ 10 days.
- It was seen that none of the cases at presentation had vision better than hand movement close to face.
- Among 36 patients who presented within 1-10 days of onset of symptoms, 1 patient (2.77%) had IOP between 20-30 mmHg, 19 patients (52.77%) had IOP between 41-50 and 06 patients (16.66%) had intraocular pressure of ≥50mmHg. Out of 20 patients who presented between 11-20 days 4 patients (20%) presented with IOP in between 23-40 mmHg, 13 patients (65%) had IOP in between 41-50 mmHg and 3 patients (15%) had IOP more than 50 mmHg. The correlation between duration and intraocular pressure at presentation was found significant.

IOP in mmHg At presentation							
Duration in days	No. of cases	20-30	31-40	41-50	>50	2-value	p-value
1-10	36	1 (2.77%)	10 (27.77%)	19 (52.77%)	06 (16.66%)	11.16	0.0001, S
11-20	20	0(0%)	4(20%)	13 (65%)	03 (15%)		
21-30	06	0(0%)	0(0%)	02 (33.33%)	04 (66.66%)		
>30 days	02	0(0%)	0(0%)	01 (50%)	01 (50%)		
Total	64	1 (1.56%)	14 (21.87%)	34 (53.12%)	14 (21.87%)		

- Among 64 operated patients of LIG, Extra Capsular Cataract Extraction employing Small Incision Cataract Surgery with PCIOL implantation was done in 34 patients (53.12%)
- SICS with PCIOL implantation with buttonhole iridectomy was performed in 10 patients.
- ECCE with PCIOL implantation with trabeculectomy was done in 11 eyes patients (17.18%).
- ECCE with IOL implantation with phacoemulsification was done in 2 eyes of phacomorphic glaucoma.

Surgery	No of eyes	Phacomorphic	Phacolytic
SICS+IOL	34(53.12%)	27(58.69%)	07(38.88%)
SICS+IOL+PBI	10(15.62%)	05(10.86%)	05(27.77%)
ECCE +IOL	07(31.13%)	05(10.86%)	02(11.11%)
ECCE+IOL (PHACO)	02(10.93%)	02(4.34%)	0(0%)
ECCE +IOL+TRAB	11(17.18%)	06(13.04%)	05(27.77%)
Total	64(100%)	46(69.81%)	18(30.19%)

- The immediate postoperative complications was seen in 52 patients. Most frequent postoperative complication was severe iritis and Striate keratopathy.
- It was noticed that after surgery, 63 eyes had an IOP 20 mmHg or less at discharge i.e. 99.05% patients have IOP 20 mmHg or less and only 1 of 64 eyes had postoperative IOP of >20 mm
- 36 cases came within duration of 1-10 days out of which 24 cases (66.66%) had best corrected visual acuity of 6/6-6/12, 12 cases (33.33%) had BCVA of 6/18-6/60 and no one had best corrected visual acuity ≤6/60. When the duration of attacks was additional than 21 days only 1 case achieved BCVA 6/12, patients with more than >30 days one had visual acuity of ≤6/60. In our study, duration of symptoms had a proportional relation with best-corrected visual acuity. Increase the delay in, decrease was the visual outcome, statistically significant (χ^2 -value = 32.69, p-value = 0.0001).

Duration in days	No of cases	Best corrected Visual acuity after 6 weeks				
		6/6-6/12	6/18-6/60	<6/60	2-value	p-value
1-10	36	24 (66.66%)	12 (33.33%)	00 (0%)	32.69	0.0001S P<0.05
11-20	20	11 (55%)	08 (40%)	01 (5%)		
21-30	6	1 (16.66%)	01 (16.66%)	04 (66.66%)		
>30 days	2	0 (0%)	01 (50%)	01 (50%)		
Total	64	36 (56.25%)	22 (34.37%)	06 (9.37%)		

DISCUSSION:

The most well-known kind of LIG optional to feeble cataract in our investigation turns out to be phacomorphic glaucoma which was similar to other studies.^{2,3}

In our examination the most noteworthy rate of LIG was found in the age gathering of 60-69 years (51.56%) which is in reliable with previous studies.^{1,2}

In our investigation larger part of the patients were from country range 40 subjects (62.50%) and 24 subjects (37.50%) were from urban area. Rural foundation assumes a huge part in the postponed usage of the administrations similar to other investigations.^{3,4}

In our examination best revised visual sharpness in the kindred eye was 6/6-6/12 in eyes (23.43%), visual keenness in the middle of 6/18 to 6/60 in (57.81%) and under 6/60 in staying (18.75%) Patients having immature cataract or pseudophakia in other eye shaped a noteworthy greater part of this investigation.^{5,6}

In our investigation Extra capsular cataract extraction utilizing SICS (Small Incision Cataract Surgery) with PCIOL was done in 34 eyes (53.12%).

We discovered ECCE with PCIOL can be securely performed in LIG and is solid in re establishing visual capacity and IOP control similar to previous studies.^{3,8,9,10}

In our investigation we watched that IOP at the time release was

decreased as far as possible after cataract removal. Comparative finding were found in previous studies.³

In this investigation BCVA of 6/60 or better was found in 78.12% and under 6/60 of every 21.87%.¹⁰

The best rectified visual keenness in our investigation is contrasted and different examinations underneath.

In our examination, just a single case gave IOP under 30 mmHg, had best adjusted visual keenness of 6/6-6/12, 48.11% had BCVA of 6/18-6/60 And out of 12 cases who gave IOP of more than 50 mmHg, half achieved BCVA in the middle of 6/18-6/60. Comparative finding were found in previous studies².

In our investigation, it was discovered that 66.66% had best adjusted visual sharpness of 6/6-6/12, 33.33% had BCVA of 6/18-6/60 and none had best amended visual keenness under 6/60 of every 36 patients who displayed inside 10 days of length of side effects following a month and a half of surgery. Furthermore, when the term of assault was of over 21 days 16.66% of the patients had BCVA of 6/18-6/60 and 66.66% accomplished BCVA $\leq$ 6/60.

In our investigation, span of side effects had a straight connection with best-amended visual sharpness. Progressively the deferral in introduction, poorer was the visual result, which was both clinically and measurably noteworthy.^{11,12}

CONCLUSION:

- Proper health education, early screening, frequent follow ups, appropriate timely surgery have good post operative visual recovery and prevents the potentially vision threatening complication. Early presentation, diagnosis and treatment leads to good post operative best corrected visual acuity in comparison to late presentation cases Future research.

FUTURE SCOPE:

It would be all in all correct to state that legitimate wellbeing training, early screening and successive development, fittingly planned surgery can keep this possibly vision debilitating confusion in a generally uneventful cataract extraction.

- Increase familiarity with LIG among individuals by sorting out appropriate camps and legitimate guiding in regards to confusions of it.
- Free or insignificant/savvy auspicious cataract surgeries regardless of government or private set up.
- Inclusion of LIG administration in different plans of government(like Rajiv Gandhi Aarogya Yojana).

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