

A Prospective Study on Lens Induced Glaucoma and Its Visual Outcomes Visiting District Hospital, Baramulla

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Abstract:

Introduction: Lens-induced-glaucoma is a distinct pathological entity, clinically recognizable, easily preventable and often curable by cataract extraction.¹ Lens induced glaucoma due to hyper mature cataracts are an important cause of secondary glaucoma and a common cause of ocular morbidity in developing world.

Materials and Methods: This prospective study was conducted in Ophthalmology department of district hospital, baramulla from October 2017 to June 2018. 50 Patients visiting the Hospital with classical symptoms of Lens induced Glaucoma were taken into study. The diagnosis of phacomorphic glaucoma was based on the presence of the classical signs and symptoms such as pain and redness, shallow anterior chamber (AC), cornea oedema and increased IOP with intumescent lens. Phacolytic glaucoma was diagnosed clinically based on the presence of the hyper mature cataract with intact capsule, presence of lens protein and flare in AC.

Results: A Total of 50 patients were taken into this study in which 22(44%) were male patients and 28(56%) were Female. Among these maximum patients were from age group 61 to 70 years (60%) followed by 71-80 years (18%). Even 51-60 years had 9 patients (18%). There was a Female dominance seen in number of patients with LIG as compared to male population. Among different LIG patients maximum patients had Phacomorphic Glaucoma accounting 66% (33 patients). Phacolytic Glaucoma was present in 14 patients which accounted 28%. Subluxated Glaucoma was seen in 3 patient in our study (6%) and phacoanaphylactic Glaucoma was not seen in our study.

Conclusion: LIG is an important vision-threatening disease presenting as a painful red eye. It is remaining as one of the important cause of Blindness not only because of Senile cataract but even after cataract surgery due to Glaucoma caused by neglected cataractous lens. Even after advanced surgical techniques being invented in recent decades and immense efforts of National Programme of Control of Blindness, Lack of awareness among especially Rural population of India is causing them to remain with cataractous lens for a prolonged period. So necessary steps should be taken to health educate especially Rural population of India, the importance of timely surgery

Key words: LIG, Lens-induced-glaucoma, Senile cataract, Blindness.

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I. Introduction

Lens-induced-glaucoma is a distinct pathological entity, clinically recognizable, easily preventable and often curable by cataract extraction.¹ Lens induced glaucoma due to hyper mature cataracts are an important cause of secondary glaucoma and a common cause of ocular morbidity in developing world. Cataract in India is the most important cause of preventable blindness accounting to 63.7 percent.² The majority of people in our country are poor, uneducated and living in rural areas and they are unaware of the complications of leaving a cataract untreated which finally results in secondary glaucoma, in which lens itself is the causative factor. The lens has to continuously grow, in order to maintain its morphological ratio with the other structures in the eye. It cannot make any way posteriorly because of the presence of vitreous and its increase in size is accommodated only by the aqueous humour resulting in alteration in anterior chamber and posterior chamber. In addition the lens unlike other ectodermal structures is devoid of the ability to get rid of its old fibres which are buried in itself in the centre forming the hard core. This imposes unlimited restrictions in its rate of growth. With aging, the lens assumes greater thickness, a greater curve of its anterior surface, and the zonules loosen.³⁻⁶ These factors cause increasing shallowness of the anterior chamber and iridolenticular contact,⁷ which results in a greater

amount of pupillary block. Lens induced glaucoma in general may be secondary angle closure (phacomorphic) or secondary open angle (phacolytic).⁸ This study was done with the main aim that lens is the chief incriminating factor in the production of secondary glaucoma and removal of the causative factor, that is, the lens by surgical method relieves glaucoma. The study assessed the visual outcome and intraocular pressure control.

II. Materials And Methods

This prospective study was conducted in Ophthalmology department of district hospital, baramulla from October 2017 to June 2018. 50 Patients visiting the Hospital with classical symptoms of Lens induced Glaucoma were taken into study. The diagnosis of phacomorphic glaucoma was based on the presence of the classical signs and symptoms such as pain and redness, shallow anterior chamber (AC), cornea oedema and increased IOP with intumescent lens. Phacolytic glaucoma was diagnosed clinically based on the presence of the hyper mature cataract with intact capsule, presence of lens protein and flare in AC.

First all these patients underwent a through ocular examination using Slit lamp biomicroscopy, Schiottz tonometry and Applanation tonometer.

Patients were made ready for operation by giving IV Mannitol and oral T. Diamox. Even Timolol drops were put. And IV mannitol was repeated just before the surgery. These patients were Operated after explaining the possible prognosis, by Small Incision Cataract Surgery with PCIOL implantation. Also a peripheral Iridectomy was performed to all the patients. Post operatively immense care was taken to prevent posterior synechiae formation using short acting Cycloplegics. During follow up a detailed Ocular examination was done including Refraction using snellens chart and IOP measurement using Schiottz tonometer and applanation tomometer. All the results were entered in Computer and evaluated.

III. Results

A Total of 50 patients were taken into this study in which 22(44%) were male patients and 28(56%) were Female. Among these maximum patients were from age group 61 to 70 years (60%) followed by 71-80 years (18%). Even 51-60 years had 9 patients (18%). There was a Female dominance seen in number of patients with LIG as compared to male population.

Among different LIG patients maximum patients had Phacomorphic Glaucoma accounting 66% (33 patients). Phacolytic Glaucoma was present in 14 patients which accounted 28%. Subluxated Glaucoma was seen in 3 patient in our study (6%) and phacoanaphylactic Glaucoma was not seen in our study.

Other eye of the patients was without any Glaucomatous changes or pressure. Pseudophakic were seen in 12 patients (24%), mature cataract was seen in 8 patients (16%) and Immature cataract was seen in 30 patients (60%).

After surgery during discharge all those patients were measured again for IOP and noted. Highest patients were between 10-19mmHg (70%). Rest were <10(14%) and 20-29mmHg (10%) making it clear that eyes were out of danger. Similarly Visual acuity were measured at three intervals using Snellens Chart and readings were noted.

On admission, highest patients were seen in Hand movements positive (37.84%) followed by Perception of Light positive (29.73%). Even No PL were also seen (14%) in higher proportion.

On the day of Discharge, highest patients (37.84%) were seen in 6/24-6/36 visual acuity followed by 6/60-1/60(18.93%). 6/12-6/18 was noted in 13.51%.

On the day of follow up after 2 weeks of surgery, maximum patients were seen between 6/12-6/18 (16%) followed by 6/24-6/36 (32%) and 6/6-6/9 (4%). These details clearly indicates there is a complete improvement of visual acuity without any medication and by just removal of cataractous lens.

Age in years	Male		Female		Total	
	Numbers	%	Numbers	%	Numbers	%
51-60	5	10%	4	8%	9	18%
61-70	11	22%	19	38%	30	60%
71-80	6	12%	3	6%	9	18%
More than 80	0	0	2	4%	2	4%
Total	22	44%	28	56%	50	100%

Table 1: Distribution of patients based on age

Type of LIG	Numbers	%
Phacomorphic Glaucoma	33	66%
Phacolytic Glaucoma	14	28%
Subluxated Glaucoma	3	6%
Phacoanaphylactic Glaucoma	0	0
Total	50	100%

Table 2: Types of lens induced Glaucoma

Status of the fellow eye	Numbers	%
Pseudophakic	12	24%
Mature cataract	8	16%
Immature cataract	30	60%
Total	50	100%

Table 3: Changes of eye during glaucoma

IOP in mm HG	On admission	%	After surgery on discharge	%
<10	-	0	7	14%
10-19	-	0	35	70%
20-29	4	8%	5	10%
30-39	16	32%	3	6%
40-49	15	30%	-	0
50-59	9	18%	-	0
>60	6	12%	-	0
Total	50	100%	50	100%

Table 4: IOP during discharge and after surgery

Visual acuity	On admission	On discharge	2 weeks post operation
6/6 to 6/9	-	2(4%)	9(18%)
6/12 to 6/18	-	8(16%)	15(30%)
6/24 to 6/36	4(8%)	16(32%)	10(20%)
6/60 to 1/60	5(10%)	9(18%)	4(8%)
CF at ½ M	4(8%)	4(8%)	-
HM	20(40%)	4(8%)	4(8%)
PL	3(6%)	-	-
NPL	4(8%)	7(14%)	8(16%)
Total	50(100%)	50(100%)	50(100%)

Table 5: Visual acuity were measured at three intervals using Snellens Chart and readings

IV. Discussion

Lens induced Glaucoma is common in India due to the fact that, in spite of easy availability of surgical facilities with concerted efforts of the National Programme for Control of Blindness (NPCB), NGOs, government agencies, and private practitioners, cataract surgery being a very cost effective and rewarding surgery, still many people are becoming blind due to lack of awareness about significance of early management. Illiterate, older, and rural population are the worst affected.

In our study a total of 50 patients were taken into this study in which 22(44%) were male patients and 28(56%) were female. Among these maximum patients were from age group 61 to 70 years (60%) followed by 71-80 years (18%). Even 51-60 years had 9 patients (18%). There was a female dominance seen in number of patients with LIG as compared to male population.

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Here we could see a drastic shift of visual acuity from major hand movements and perception of light positive to 6/12-1/60 during the day of discharge. When the patients came back for follow up on 2nd week post-operative day there was again improvement of major patient population 6/6-6/36. These changes clearly indicate that cause of blindness was lens induced and when the cause was eliminated, there was a drastic improvement in the vision. With appropriate IOL implantation majority of patients remained in 6/12-6/18 vision.

V. Conclusion

LIG is an important vision-threatening disease presenting as a painful red eye. It is remaining as one of the important cause of Blindness not only because of Senile cataract but even after cataract surgery due to Glaucoma caused by neglected cataractous lens. A phacomorphic lens disease secondary to a neglected senile cataract is the major cause of LIG.

Even after advanced surgical techniques being invented in recent decades and immense efforts of National Programme of Control of Blindness, Lack of awareness among especially Rural population of India is causing them to remain with cataractous lens for a prolonged period. So necessary steps should be taken to health educate especially Rural population of India, the importance of timely surgery for better visual outcome and the dangers of poor visual result if cataract surgery is delaye

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