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A CLINICAL STUDY ON LENS INDUCED GLAUCOMA IN A TERTIARY CARE HOSPITAL

Ophthalmology

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ABSTRACT

To determine the clinical profile and outcome in cases of lens-induced glaucoma (LIG).A retrospective analysis of 31 cases with LIG was evaluated over a period of one year at a rural tertiary care hospital. The cases ranged from 51 years to 80 years with female (61.3%) preponderance. The phacopmorphic glaucoma 17(54.8%) cases were more common than phacolytic glaucoma 14 (45.2%) cases. Eighteen (58.1%) cases underwent small incision cataract surgery with PC IOL implantation and 05 (16.1%) cases had combined surgery. At discharge, 17 (54.8%) had best corrected visual acuity 6/6-6/12. The correlation between postoperative visual outcome and age above 70 years, duration of symptoms more than a week and IOP more than 40 mm of Hg were clinically and statistically significant. There is great need for the awareness among rural elderly people about the importance of timely surgery of cataract for better visual outcome in this condition.

KEYWORDS

Lens induced glaucoma, cataract, phacomorphic, phacolytic

Introduction

In India, there are twenty million blind people of which eighty percent are preventable. Cataract is the most common cause of preventable or treatable blindness in India. Cataract is a condition of senility, accounting up to 62.6% of total blindness. (1,2) In India, approximately 7 million people become blind due to cataract at any point of time and 6.15 million cataract cases are added each year.(1) The prevalence of blindness in population of 50 years and above is high, which is estimated to be 8.5%. About 70% percent of our population lives in rural area. They are socioeconomically weak and a large number of them live below poverty line.(3) Because of constant increase of the number of population and enhanced life span, the number of cataract cases also increases the burden of cataract blindness in our community. Available eye care facilities are still out of reach in remote rural areas, particularly for women and backward classes of the society that is evident by the fact that they present at older age with advanced stage of cataract and sometimes with lens induced glaucoma (LIG).

Gifford and von Reuss independently first described LIG in the year 1900.(4,5) Gifford H described it as glaucoma in hypermature cataract and Reuss V described it as glaucoma with spontaneous absorption of lens substance through intact lens capsule. Subsequently various workers described the condition under different names.

LIG is a clinical condition characterized by one of the commonest cause of acute secondary glaucoma associated with senile cataracts in one eye, normal intraocular pressure and open angle in other eye, prompt relief of symptoms after cataract extraction in the affected eye.(2)

Late reporting for treatment in this condition causes serious complications like irreversible loss of vision. The rural population are worst affected from this preventable and curable condition due to their illiteracy, socioeconomic condition, dependency on negligent offspring, poor affordability, inconvenient transport to reach medical services, lack of awareness about significance of timely management of cataract and fear of cataract operation. (6) According to the previous studies, prevalence of LIG varies from 0.25% to 3.95 %.(7, 8) An early recognition and management can prevent blindness in the cases with LIG. The definitive treatment for LIG is cataract extraction. (9-11) The outcome of the surgery in LIG depends on the duration between onset of symptoms and treatment, presence of postoperative complications like optic atrophy, uveitis and corneal oedema. (1, 11)

The aim of this study was to evaluate the clinical profile and outcome of LIG in patients attending to our institute.

Methodology

This is a study conducted on consecutive patients who were diagnosed as LIG in a rural tertiary care hospital and operated at our hospital from 1st January to 30th December 2016. A total 31 patients with clinical diagnosis of LIG were included in the study. The cases with congenital cataract, complicated cataract, traumatic cataract, known cases of glaucoma and visual acuity of no perception of light were excluded from the study. Informed and written consent was taken from the patients for the study. The study was approved by the institutional ethical committee.

The age, sex, visual acuity, slit lamp examination, intraocular pressure (IOP) measurement interval between onset of symptoms and surgery, postoperative complications were recorded of all the patients.

The diagnosis of phacomorphic glaucoma was made with symptoms of pain, redness of the affected eye, headache, presence of conjunctival injection and corneal oedema, shallow anterior chamber, dilated pupil, IOP above 21 mm of Hg, shallow anterior chamber with intumescent cataract. Phacolytic glaucoma was diagnosed in cases with same symptoms, IOP above 21 mm of Hg, deep anterior chamber with flare, cells in the aqueous humor and hypermature cataract.

Medical management of the cases to bring down IOP was done with antiglaucoma topical and systemic medicines, topical steroids were used to control ocular inflammation. Manual SICS with PC IOL implantation was the preferred method of surgery in our cases. Triple procedure, manual SICS with PC IOL implantation with trabeculectomy was done in patients of uncontrolled IOP with antiglaucoma medications, presented more than 7 days of symptoms and gonioscopy showed more than three quarter of peripheral anterior synachiae (PAS).

During postoperative period all the patients were given topical moxifloxacin and dexamethasone combination six times daily tapering over four weeks and a short acting cycloplegic drop. Systemic steroid and topical timolol maleate were given when indicated. They were discharged on second postoperative day after a complete ophthalm ological examination.

All the cases were followed up with complete ophthalmological examination in eye OPD at 2nd week, 4th week and 6th week after the day of discharge. Visual acuity at the last follow-up was taken as the postoperative visual acuity of the patient.

Statistical software SPSS version 20.0 was used to analyze the data of the study. Statistical significance was set at $p < 0.05$.

Results

In our study, there were 31 cases of LIG out of 1126 senile cataract cases operated during over a period of one year in our hospital. Prevalence of LIG was 2.75% in our study. Age of the cases ranged

from 51 years to 80 years with the mean of 66.96 years. Most affected age group of patients in our study was 55-70years,23(74.2%) cases.

Table-1: Age, sex distribution, duration of symptoms, visual acuity and range of IOP at presentation.

		No of cases (n=31)	Percentage
Age	<55years	02	6.4%
	55-70years	23	74.2%
	>70 year	06	19.4%
Sex	Male	12	38.7%
	Female	19	61.3%
Duration of symptoms	<7days	08	25.8%
	7-21 days	20	64.5%
	>21 days	03	9.7%
Type of LIG	Phacomorphic glaucoma	17	54.8%
	Phacolytic glaucoma	14	45.2%
visual acuity at presentation	PL+/PR defective	03	9.7%
	HMCF	12	38.7%
	FC at 1 m	14	45.2%
	6/60 or more	02	6.4%
Range of IOP at presentation	21-30 mm of Hg	01	3.2%
	31-40 mm of Hg	11	35.5%
	41-50 mm of Hg	14	45.2%
	>50 mm of Hg	05	16.1%

Table-1 shows there were 12 male and 19 females with female to male ratio of 1.58:1. Among the cases, there was female (61.3%) preponderance compared to male (38.7%) cases.

At presentation, 3(9.7%) patients visual acuity in the affected eye was perception of light only due to cataract with loss of corneal transparency secondary to sudden rise of IOP, hand movement close to face(HMCF) in 12(38.7%) cases and finger count (FC) at 1 meter in 14(45.2%) cases.

Time interval between onset of acute symptoms and reporting to hospital shows only 8 (25.8%) patient presented to the hospital within one week and 23(74.2%) cases more than a week. In our study, phacopmorphic glaucoma 17(54.8%) was more common than phacolytic glaucoma 14 (45.2%). At presentation, IOP ranged from 26-58 mm of Hg, 19(61.2%) cases had IOP more than 40 Hg. The examination of fellow eye revealed immature cataract in 21(67.7%) cases and pseudophakia in 7(22.5%) cases.

Table-2 Nature of surgery, post operative visual acuity and IOP

	No of cases		Percentage
Nature of surgery	SICS with PC IOL	18	58.1%
	Combined surgery	05	16.1%
	SICS with PC IOL + iridectomy	08	25.8%
Post operative visual acuity	<6/60	02	6.4%
	6/60-6/24	03	9.7%
	6/24-6/18	09	29.1%
	6/12-6/6	17	54.8%
Post operative IOP	≤ 21 mm of Hg	29	93.5%
	> 21mm of Hg	02	6.5%

Table 2 shows 18 (58.1%) cases underwent small incision cataract surgery with PC IOL implantation and 05 (16.1%) cases had combined surgery.

At discharge 17 (54.8%) had best corrected visual acuity (BCVA) 6/6-6/12, 02(6.4%) cases had BCVA less than 6/60 due to optic atrophy. Twenty-nine (93.5%) cases had IOP less than 21 mm of Hg without any antiglaucoma medication and only 2(6.4%) cases had IOP more than 21 mm of Hg at discharge.

Table-3 Relation of postoperative visual acuity with age, duration of symptoms and IOP at presentation

Postoperative visual acuity	Age (years)	Duration of symptoms (days)	IOP at presentation (mm of Hg)			
	<70	>70	<7	>7	<40	>40
6/6 -6/12	14	03	07	06	09	05
6/18 or less	02	12	01	17	02	15

In this study, the correlation between postoperative visual outcome with age above 70 years, duration of symptoms more than a week and IOP more than 40 mm of Hg was clinically and statistically significant (p<0.0) (Table-3).

Discussion

LIG is not an uncommon event in rural India. (13,14) The prevalence of LIG in our study was. 2.75% which is within the range of prevalence rate reported in the previous studies. The mean age was 66.96 years in our study which is similar to the study of Angara et al(12),Prajna et al(9),Ramakrishanan et al(15),Sitoula et al(17).

In our study female patients were more affected than the males in the ratio of 1.58:1, almost similar to the study of Pradhan et al(10), Ushalatha (16) The females were more affected may be due to their financial dependency on other members of the family.

In our study phacopmorphic glaucoma was more common.(54.8%) than phacolytic glaucoma (45.2%) similar to the study of Prajna et al (9) and Situola et al (17)where as Pradhan et al (10) reported it as 72%.The fellow eye revealed immature cataract in 21(67.7%)cases and pseudophakia in 7(22.5%) cases similar to Prajna et al (9)study with 65% immature cataract and 6% cases of pseudophakia.

In this study, only 8(25.8%) patients attended hospital for treatment within one week of onset of symptoms and 3(9.7%) patient sought medical treatment after 3 weeks. Pradhan et al (10) in his study found 70% cases reported for treatment after one week. The reason for delayed reporting to be poor health education, acceptance of poor vision as part of aging, fear of operation and socioeconomic constrains. The wrong diagnosis by the local medical practitioners also delays the proper treatment of LIG.

At discharge, 17 (54.8%) of 31 cases had BCVA 6/6 to 6/12 and 2 (6.4%) cases had BCVA less than 6/60. In this study 2 (6.4%) patients had postoperative no visual improvement or marginal improvement of visual acuity The poor visual acuity was seen due to optic atrophy. Prajna NV et al (9) and Rijal AP et al (11) also documented optic atrophy as the common cause of diminished visual acuity. These patients had longest time lag between development of symptoms and onset of treatment.

Conclusion

Early diagnosis and treatment of LIG is very important for good postoperative visual acuity since delay in treatment may lead to poor visual outcome. Therefore, there is great need for the awareness among rural elderly people even now about the importance of timely surgery of cataract for better visual outcome in this condition.

REFERENCES

1. Government of India. National Survey on Blindness and Visual Outcome after Cataract Surgery.2001-2002.vol 77,National Programme for control of Blindness,Ministry of Health,Government of India,NewDelhi,India,2002.
2. Kothari R, Tathe S, Gogri P, Bhandari A. Lens-induces glaucoma :The need to spred awareness about early management of cataract among rural population .ISRN Ophthalmol 2013
3. Government of India. Ministry of Social Justice and Empowerment, Annual report2003-2004,NewDelhi,India2004.
4. H.Gifford,The danger of the spontaneous cure of senile cataract.American Journal of Ophthalmology,vol.17.pp289-293,1900
5.. von Reuss,Centralblatt fur Praktische Augenhe ikund e,vol.24,p .33,1900
6. Chatterjee A, Milton R, Thyle S. Prevalence and etiology of cataract in Punjab.Br J Ophthalmol 1982;66:35-62
7. Sah EP, Bandhu BP, Pokharel PK, Thakur SK, Das H, Panda A. Prevalence of glaucoma in Sunsari district of eastern Nepal. Kathmandu Univ Med Journ 2007;5:343-8
8. Nirmalan PK, Thulasiraj RD, Maneksha V.A population based eye survey of older adults in Tirunelveli district of south India; blindness, cataract surgery and visual outcomes.Br J Ophthalmol 2002;86:505-12
9. Prajna NV, Ramakrishnan R, Krishnadas R, Manoharan N. Lens-induced glaucomas visual results and risk factors for final visual acuity. Indian J Ophthalmol 1996;44:149-55
10. Pradhan D, Hennig A, Kumar J, Foster A. A prospective study of 413 cases of lens-induced glaucoma in Nepal.Indian J Ophthalmol 2001;49:103-7
11. Rijal AP, Karki DB. Visual outcome and IOP control after cataract surgery in lens induced glaucomas. Kath Univ Med J 2006;4:30-3
12. Angara SK,Pradhan R,Garg SP.Ctaract induced glaucoma-an insight into management.Indian J Ophthalmol 1991;39:97-101
13. Sharma RG,Verma GL,Singhal B.A direct evaluation of Scheie's operation with

sclerectomy along with lens extraction in lens induced glaucoma.Ind J Ophthalmol 1983;31:639-41
14. Jain IS,Gupta A,Dogra MR,Gangwar DN,Dhir SP.Phacomorphic glaucoma management and visual prognosis.Ind J Ophthalmol1983;31:648-653
15. Ramakrishanan R,Maheshwari D,Kader MA.Visual prognosis,intraocular pressure control and complications in phacomorphic glaucoma following manual small incision cataract surgery .Indian J Ophthalmol 2010;58;303-6
16. Ushalatha B, Chandrasekhar B, Bhavani MV.A study of visual outcome in Lens Induced Glaucoma.JDMS2016;15:58-61
17. Sitoula RP, Sarkar I, Nayak D, Singh SK. Lens induced glaucoma: An experience in tertiary eye care center in eastern Nepal. Nepal J Opthalmol 2016; 8:161-166