



Pattern of Presentation, Management and Outcome of Lens Induced Glaucoma at a Tertiary Eye Care Centre

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Abstract

Objective: To outline the clinical presentation, management and outcome of lens induced glaucoma in Chittagong Eye Infirmary and Training Complex.

Methods: A case series review was done among the patients who visited Chittagong Eye Infirmary and Training Complex from January 2015 to December 2018. Demographic data, clinical presentations, management and outcome were recorded and analysed.

Results: 30 phacomorphic cases and 20 phacolytic glaucoma patients were included in our study. The mean age at presentation was 60 years. Female to male ratio was 2:1. The reason for late presentation was distance which was 60% in phacomorphic glaucoma and 50% in phacolytic glaucoma. The main symptoms were reduced vision followed by ocular pain and redness of eye. Visual acuity was either HM or just PL in all eyes before surgery. All patients underwent SICS with posterior chamber lens implantation. IOP reduced tremendously upon discharge and vision kept improving up to a month after surgery.

Conclusion: Reduced vision, ocular pain and redness are the main clinical presentations of lens induced glaucoma. Cataract surgery proves to be effective in lowering IOP and visual recovery in patients with lens induced glaucoma.

Keywords: Lens Induced Glaucoma; Phacomorphic Glaucoma; Phacolytic Glaucoma; Ocular Pain; Cataract Surgery

Introduction

Lens induced glaucoma; one of the commonest causes of secondary glaucoma due to senile cataract mandates an early recognition and management to prevent blindness [1]. Although lens induced glaucoma is prevalent in developing countries it also occurs in developed countries [2].

Lens-related elevation in IOP results from a variety of mechanisms such as lens dislocation, lens swelling (intumescent cataract), inflammation due to

phacoanaphylaxis and lens particle blocking the trabecular meshwork. Untreated rise in IOP damages the optic nerve mechanically which inevitably leads to blindness. Cataract occurs when crystalline lens loses its transparency normally as part of ageing process.

Neglected cataractous lens may swell because of osmotic effect of degenerated lens proteins. In phacomorphic glaucoma, the swollen lens may block the anterior flow of the aqueous humour from the posterior chamber pushing the iris forward. Eventually, the trabecular meshwork gets

blocked by the iris and leads to a sudden and extreme rise in IOP [3].

Phacolytic glaucoma is a principle complication of hypermature cataract. Hypermature cataract may cause leakage of lens protein from an intact capsule. The lens protein causes intense inflammation and blockage of trabecular meshwork, subsequently responsible for elevation of IOP [4]. The purpose of this review is to study and determine the clinical presentations, management and outcome of lens induced glaucoma at Chittagong Eye Infirmary and Training Complex.

Methods

A case series review was conducted on records of patients who were diagnosed with lens induced glaucoma in Chittagong Eye Infirmary and Training Complex between January 2013 and December 2018. Lens induced glaucoma was diagnosed on the presence of increased IOP and lens related problem [5]. The diagnosis of phacomorphic glaucoma was based on the presence of pain and redness, shallow anterior chamber, corneal oedema and increased IOP with intumescent lens.

Phacolytic glaucoma was diagnosed clinically based on the presence of hypermature cataract, presence of lens protein and flare in anterior chamber. Goldmann applanation tonometry was used to measure IOP. All patients underwent

small incision cataract surgery with posterior chamber lens implantation. Exclusion criteria included those patients who had primary glaucoma or other underlying causes of secondary glaucoma and inadequate data. Demographic data, clinical presentations, management and outcome were documented and statistical analysis was conducted using SPSS 26.

Results

A total of 50 cases were included in our study. Phacomorphic glaucoma was found to be more 30 (70%) than phacolytic 20 (30%). There was a female preponderance compared to male with female to male ratio of 2:1. At presentation, all patients in the effected eye had VA either of HM or PL (Table 1). Examination of fellow eye revealed 53.33% had immature cataract, 43.33% were pseudophakic and 3.33% were normal eyes in phacomorphic glaucoma and in case of phacolytic glaucoma 35 % had immature cataract, 55% were pseudophakic and 10% were normal eyes (Table 2). The reason for delay in presentation was distance which was 60% in phacomorphic glaucoma and 50% in phacolytic glaucoma. All patients underwent SICS +PCIOL implantation. IOP at presentation ranged from 21 to 60mm Hg. 33.33% had IOP more than 40mm Hg at presentation in case of phacomorphic glaucoma and 50% in case of phacolytic glaucoma. Following surgery, 90% had an IOP of 21mm Hg at discharge.

Presenting Visual Acuity	Phacolytic Glaucoma		Phacomorphic Glaucoma	
	n	Percentage %	n	Percentage %
6/6 - 6/18	0	0	0	0
6/18 - 6/60	0	0	0	0
6/60 - PL	20	40	30	60

Table 1: Presenting Visual Acuity.

Condition of Other Eye	Phacolytic Glaucoma		Phacomorphic Glaucoma	
	n	Percentage %	n	Percentage %
Normal	2	4	1	2
Cataract	7	14	16	32
Pseudophakia	11	22	9	18
Glaucoma	0	0	4	8

Table 2: Condition of Other Eye.

After 1 month follow-up, 19 (63.33%) had VA 6/60 or better, 5 (16.67%) had less than 6/60 and 6(20%) had less than 3/60 in case of phacomorphic glaucoma. In case

of phacolytic glaucoma, 11(55%) had VA 6/60 or better, 6(30%) had less than 6/60 and 3 (1%) had less than 3/60 (Table 3).

1 Month VA	Phacolytic Glaucoma		Phacomorphic Glaucoma	
	n	Percentage %	n	Percentage %
6/6 - 6/18	11	22	19	38
6/18 - 6/60	6	12	5	10
6/60 - PL	3	6	6	12

Table 3: 1 Month visual acuity.

Discussion

In our study, the phacomorphic glaucoma was more common than phacolytic glaucoma which is similar to in study by Paradhan D, et al. [6] reported a prevalence of phacomorphic glaucoma of 3.9% of all cataract surgeries. In our study, females seemed to have a significant increased risk of having lens induced glaucoma. In our study, VA at discharge was better which is similar to a study by Paradhan D, et al. [6] IOP after cataract surgery was below 21 mm of Hg in 90% in our study. In our setup, the patients presented late, probably because of distance from hospital, poverty, ignorance, lack of awareness and facilities for treatment.

These results highlight the importance of early diagnosis and treatment of mature cataract [7]. There is a need to educate both the patient and the cataract surgeon of the dangers of lens induced glaucoma and of the poor outcome if treatment is delayed. All the factors could not be demonstrated in our study due to the smaller sample size.

Conclusion

Lens induced glaucoma is an important vision-threatening disease. Phacomorphic lens disease secondary to a neglected senile cataract is the major cause of lens induced glaucoma. Removal of the cataractous lens results in prompt reduction in IOP and a favourable visual outcome.

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Chittagong eye infirmary and training complex

Conflict of Interest: None

References

1. Pant Sitoula, Sarkar I, Nayak D, Singh SK (2016) Lens induced glaucoma in eastern Nepal. *Nepal J Ophthalmol* 8(16): 161-166.
2. Sowka J (2006) Phacomorphic glaucoma: Case and review. *Optometry* 77(12): 586-589.
3. Jonathan PE, Obstbaum SA (1992) Lens induced glaucoma. *Documenta Ophthalmia* 81(3): 317-338.
4. Johns KJ, Feder RS, Hamill MB (2003) Lens and cataract. *American Academy of Ophthalmology*.
5. Jain IS, Gupta A, Dogra MR, Gangwar DN, Dhir SP (1983) Phacomorphic glaucoma Management and visual prognosis. *Indian J Ophthalmol* 31(5): 648-653.
6. Paradhan D, Hennig A, Kumar J, Foster A (2001) A prospective study of 413 cases of lens- induced glaucoma in Nepal. *Indian J Ophthalmol* 49(2): 103-107.
7. Yaakub A, Abdullah N, Raihan SI, Tajudin LSA (2014) Lens-induced glaucoma in a tertiary centre in northeast of Malaysia. *Malays Fam Physician* 9(2): 48-52.

