

Visual Outcome after Phacomorphic Glaucoma

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ABSTRACT

Purpose: To compare the visual outcome of patients of phacomorphic glaucoma presenting early and late.

Material and method: A study was conducted on 80 patients at eye department Mayo hospital Lahore. After diagnosis of phacomorphic glaucoma all the patients were divided into two equal groups. Group A included 40 patients who presented within one week of attack and Group B included 40 patients who presented after one week of attack. After controlling IOP and inflammation, all the patients were operated by ECCE with intra ocular lens implantation by a single surgeon. Evaluation of visual acuity was done on the first three post operative days while patients were in the ward. Follow up visit were done after one week, three weeks and finally after six weeks postoperatively.

Results: After 6 weeks in Group A (patients presented within one week of attack) out of 40 patients 26 patients (65%) achieved good visual acuity i-e $\geq 6/18$. While in Group B (patients presented after one week of attack) only 6 patients (15%) achieved this good visual acuity.

Conclusion: Visual outcome depends on timely management. Timely management gives less post operative complications and improves the visual outcome.

Keywords: Phacoemulcification, glaucoma, IOP

INTRODUCTION

Phacomorphic glaucoma is a type of lens-induced glaucoma in which there is pathological rise in intraocular pressure ($>21\text{mmHg}$) precipitated by the shape and size of the lens. It is an acute secondary angle closure glaucoma which results from sudden hydration of lens which blocks the angle by a forward push of the iris and ciliary body resulting in shallowing of the anterior chamber.

Rapid lens swelling may result in pupillary block or forward displacement of the lens-iris diaphragm. Patients who develop phacomorphic glaucoma tend to have small anterior segments, predisposing them to increased relative pupillary block. Relative pupillary block increases with age as the lens grows and the pupil becomes miotic.

A secondary angle closure attack is often precipitated by some minor event such as pupillary dilatation. The dilatation to mid position relaxes the peripheral iris so that it may bow forward into contact with the trabecular meshwork, in this position lens iris apposition is maximal, setting the stage for pupillary block.

Phacomorphic glaucoma may be manifested by pain, blurred vision, rainbow colored halos around lights, nausea and vomiting. The rise in IOP to

relatively high levels causes corneal epithelial edema, which is responsible for the visual symptoms.

Signs of phacomorphic glaucoma include Corneal epithelial edema, Congested episcleral and conjunctival blood vessels, Shallow anterior chamber and a mild amount of aqueous flare.

The optic nerve may be swollen. Definitive diagnosis depends on the gonioscopic verification of angle closure. Gonioscopy should be possible in almost all patients, although medical treatment of elevated IOP and clearing of corneal edema with topical glycerin may be necessary to enable visualization of the chamber angle. Compression Gonioscopy may help the physician to determine if the iris trabecular meshwork blockage is reversible or irreversible and it may be therapeutic in breaking the attack of the phacomorphic angle closure glaucoma.

During an attack IOP may be high enough to cause glaucomatous optic nerve damage and retinal vascular occlusion. Peripheral anterior synechiae may form rapidly and IOP induced ischemia may produce sector atrophy¹.

The signs and symptoms of phacomorphic glaucoma are similar to those primary angle closure glaucoma². There are three differences

1. The fellow eye in phacomorphic glaucoma frequently has an anterior chamber of normal depth where as bilateral shallowness of the anterior chamber is the rule in primary angle closure.

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2. The antecedent refractive error may be of any type in phacomorphic glaucoma while in primary angle closure hyperopia is common.
3. The mature cataract in phacomorphic glaucoma reduce the severity of the visual symptoms typical of angle closure in fact a change in visual acuity may be perceived.
4. Initial management of phacomorphic glaucoma include reduction of the intraocular pressure with topical B adrenergic antagonist, pilocarpine (parasympathomimetic), carbonic anhydrase inhibitors and osmotic agents³.
5. Lens extraction is the treatment of choice⁴. One may consider a trial laser iridotomy and possibly goniotomy if a visual need for cataract extraction does not exist if the angle remains appositionally closed despite laser intervention, cataract extraction should be done.

Visual outcome is dependent on timely management. Poor visual outcome when treatment is delayed is due to diffuse and centrally intense hydropic axonal degeneration and blocked retrograde axoplasmic transport. The purpose of this study is to compare the visual acuity of patients of phacomorphic glaucoma presenting early and late.

MATERIAL & MATHOD

A study was conducted on 80 patients at eye department Mayo hospital Lahore. After diagnosis of phacomorphic glaucoma all the patients were divided into two equal groups. Group A included 40 patients who presented within one week of attack and Group B included 40 patients who presented after one week of attack. All the patients were given anti-glaucoma to lower the intra ocular pressure and topical steroid drops to reduce inflammation. After controlling IOP and inflammation, all the patients were operated by ECCE with intra ocular lens implantation by a single surgeon. At the end of surgery patients were given 0.1ml dexamethasone intracamerally. Evaluation of visual acuity was done on the first three post operative days while patients were in the ward. Follow up visits were done after one week, three weeks and finally after six weeks postoperatively. Visual acuity of the patient was checked with Snellen chart on each visit.

RESULT

Comparison of visual acuity of Group A & B patients.

Best corrected visual acuity	Group A	Group B
Good \geq 6/18	26 (65%)	6 (15%)
Borderline 6/18 - 6/36	10 (25%)	13 (32%)
Poor < 6/60	4 (1%)	21 (52%)

After 6 weeks in Group A (patients presented within one week of attack) 26 patients achieved good visual acuity (\geq 6/18), 10 patients achieved borderline (6/18-6/36), 4 patients achieved poor (<6/60) visual acuity. While in Group B (patients presented after one week of attack) 6 patients achieved good visual acuity, 13 patients achieved borderline visual acuity, 21 patients achieved poor visual acuity. In all the patients best corrected visual acuity was taken after the removal of stitches.

DISCUSSION

The term phacomorphic glaucoma is used for secondary angle closure glaucoma associated with an intumescent cataract causing pupillary block. Several abnormalities of the lens may induce phacomorphic glaucoma. One of the more common is swollen cataractous lens. This may be a result of the normal aging process, leading to a mature swollen lens or it may be secondary to trauma which causes the rapid development of the cataract. When phacomorphic glaucoma occurs, the iris is pushed forward with shallowing of the anterior chamber.

The patient presents with red, painful eye and a history of decreased vision due to cataract formation. The cornea may be oedematous. The anterior chamber is shallow and gonioscopy reveals that the anterior chamber angle is closed.

Medical therapy is used to reverse the process and acutely lower the IOP. Argon laser peripheral iridotomy is another alternate method to decrease intraocular pressure before cataract extraction. Cataract extraction either with or without secondary lens implantation, remains the most common procedure to treat phacomorphic glaucoma which increases angle crowding. Peroperatively anterior chamber paracentesis is also used to reduce intraocular pressure in phacomorphic glaucoma at the time of cataract extraction.

Phacomorphic glaucoma is a common occurrence in subcontinent⁵. Visual outcome is dependent on timely management⁶. In past various studies were done to determine the role of early intervention on visual outcome after phacomorphic glaucoma. The result in our study was nearly consistent with those studies. A study showed that at least 54% of the eyes with duration less than 1 week of attack recover 6/12 or better vision, whereas only 32% of the eyes recover this visual acuity if the duration of attack lasted up to 2 weeks. And after 3 weeks recovery is light perception or hand movements only⁷.

Another study showed that phacomorphic glaucoma is more common in females and after

surgery 45% achieved visual acuity 6/12-6/60 while 30 achieved visual acuity <6/60⁸.

CONCLUSION

If we conclude all this discussion then we can safely say that timely management of patients having phacomorphic glaucoma can still give good visual outcome if the treatment is not delayed and can prevent a lot of patients to become blind in our country.

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