



ORIGINAL RESEARCH PAPER

Ophthalmology

NEODYMIUM:YTTRIUM – ALUMINIUM – GARNET (Nd:YAG) LASER POSTERIOR CAPSULOTOMY IN POSTERIOR CAPSULAR OPACIFICATION

KEY WORDS: Posterior capsular opacification, Nd:YAG laser capsulotomy, visual acuity.

Dr. Keerthi Sri. A. S

M.B.B.S, M.S (OPHTHALMOLOGY)

ABSTRACT

Posterior capsular opacification (PCO) is a common complication following cataract surgery. When “PCO” evolves following cataract surgery, it leads to symptoms like blurring of vision and glare. At present, the most widely practiced procedure for the management of symptomatic “Posterior capsular opacification” is Nd:YAG laser capsulotomy. In this study an attempt has been made to evaluate the outcome following Nd-YAG laser capsulotomy. Aim of the study is to assess the correlation between PCO and visual acuity before and after Nd:YAG laser posterior capsulotomy, to assess the results of Nd-YAG LASER posterior capsulotomy, to evaluate the safety and efficacy of the above procedure. A good improvement in the visual acuity was seen in most of the patients after the Nd:YAG laser procedure in this study and Nd:YAG laser is a safe and effective procedure.

AIMS AND OBJECTIVES:

- To assess the correlation between PCO and visual acuity before and after Nd:YAG laser posterior capsulotomy.
- To assess the results of Nd-YAG LASER posterior capsulotomy.
- To evaluate the safety and efficacy of the above procedure.

INTRODUCTION:

Cataract is the main cause of curable blindness worldwide. Prevalence of blindness due to senile cataract is high in Indian population. There is a need to undertake quality cataract surgery for both rural and urban population.

Posterior capsular opacification (PCO) is a common complication following cataract surgery. When “PCO” evolves following cataract surgery, it leads to symptoms like blurring of vision and glare. At present, the most widely practiced procedure for the management of symptomatic “Posterior capsular opacification” is Nd:YAG laser capsulotomy. This procedure is not always free of complications and several complications have been reported in the various clinical studies.

In this study an attempt has been made to evaluate the outcome following Nd-YAG laser capsulotomy.

REVIEW OF LITERATURE:

The surgery of cataract reigns from the Sushruta to the present modern age through which it has undergone tremendous evolutionary changes beginning from needling to intra capsular cataract extraction to extracapsular cataract extraction to small incision cataract surgery and phacoemulsification. Post operative status of posterior capsule that is posterior capsular opacification is one of the complications of the cataract surgery. PCO is big threat to good visual acuity.

The clinical application of Nd: YAG laser in patients with posterior capsule opacification has enabled in restoring the vision.

Nd: YAG laser capsulotomy is one of the best methods of treatment of PCO. It is effectively safe, non-invasive and does not require patient hospitalization.(1)

Posterior capsule opacification or after cataract is caused by incomplete removal of epithelial cells of original lens capsule which proliferate and migrate along internal and anterior and posterior surface of capsule. Clinically, the PCO manifests as blurring of vision and decrease in visual acuity.(4)

The incidence of PCO is in the range of 18 – 50% in adults followed for 5 years. In infants and juveniles, an opacification

rate of 44% was found within 3 months of surgery after inbag IOL implantation with an intact posterior capsule.(5) Complications of Nd:YAG laser are intra ocular pressure rise, intra ocular lens markings, retinal detachment, cystoid macular oedema, bleeding from rubeosis iridis, rupture of anterior hyaloid face, iritis and vitritis.(6)

METHODS:

Nd: YAG laser capsulotomy was carried out in 60 eyes of 60 patients. Average period of follow up was for 6 months.

Chief complaints of all the cases was diminished vision which varied from hand movements to 6/24 . Some also complained of haziness of vision. Each patient was evaluated before undergoing laser capsulotomy to confirm that the visual loss was only due to after Cataract.

Following tests were done in each case prior to posterior capsulotomy:

- Complete ophthalmic history and medical history
- visual acuity.
- Slit lamp examination for evaluation of red reflex and anterior segment Pathology.
- Fundus examination.

Some capsular opacities are impressive in oblique slit lamp illumination but are insignificant when viewed against red reflex. The single and most reliable technique for assessing capsular opacity is direct ophthalmoscopy. Fundus view with Hurby lens may also allow accurate assessment of capsular clouding where as the indirect ophthalmoscopy can penetrate significant capsular opacity. Ultra sound B scan where posterior segment view is obscured by dense after cataract can also be done.

Visual acuity after the procedure was seen.

PRE LASER IMAGE



POST LASER IMAGE

RESULTS:

SEX DISTRIBUTION OF THE STUDY POPULATION

Sex	Number of cases
Male	28
Female	32

GRADING OF POSTERIOR CAPSULAR OPACIFICATION

Mild	Fundus seen with direct ophthalmoscope	14
Moderate	Fundus seen with indirect ophthalmoscope	24
Severe	No fundus view or details hazily seen	22

VISUAL ACUITY PRE AND POST Nd:YAG LASER

Pre Laser Visual Acuity	Post Laser Visual Acuity							Lost follow up
	6/6	6/9	6/12	6/18	6/24	6/36	6/60	
HM – CF 5 mts	0	3	7	1	5	4	2	0
6/60 – 6/36	9	11	2	4	0	1	0	0
6/9 – 6/24	9	2	0	0	0	0	0	0
Percentage	30 %	26.7 %	15 %	8.3 %	8.3 %	8.3 %	3.4 %	0%

CONCLUSION:

A good improvement in the visual acuity was seen in most of the patients after the Nd:YAG laser procedure.

Nd:YAG laser is a safe and effective procedure.

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