

YAG LASER CAPSULOTOMY REVIEW OF 500 CASES AT CIVIL HOSPITAL, KARACHI

MIRZA SHAFIQ ALI BAIG, MIR AMJAD ALI*

Department of Ophthalmology Unit I, Dow University of Health Sciences & Civil Hospital, Karachi

Department of Ophthalmology Unit II, Dow University of Health Sciences & Civil Hospital, Karachi*

ABSTRACT

Objective: To find out immediate visual outcome after performing ND-YAG capsulotomy for posterior capsular opacification (PCO).

Study Design: Quasi experimental study.

Setting & Duration: Department of Ophthalmology, Civil Hospital, Karachi from 1993 to 2008.

Methodology: After thorough assessment the patient underwent YAG laser with Zeiss four dot YAG laser with Zeiss slitlamp under topical anesthesia. Pre laser visual acuity was assessed and post laser visual acuity was compared.

Results: A total of 500 patients were included in the study of which 350 were males (70%) and 150 were females (30%). Time period between surgery and YAG laser was 6 months to 12 years. Type of PCO was capsular fibrosis in 51% of cases 24% Elsching pearl's. Visual acuity was 6/18 or better in more than 60% of cases. None of the eyes showed deterioration in visual acuity after YAG laser capsulotomy.

Conclusion: ND-YAG laser capsulotomy is safe and rewarding procedure in adults and visual out come is good.

KEY WORDS: ND-YAG Laser, Capsulotomy, Posterior Capsular Opacification

INTRODUCTION

Extra capsular surgery and phacoemulsification is a common procedure carried out on a regular basis by every ophthalmologist. One of the most common complication is posterior capsule opacification.¹ The posterior capsule opacification (PCO) is more earlier in onset in younger patient.² Nd Yag Laser has completely replaced surgical capsulotomy.³ Although simple and convenient this procedure is associated with complication like, transient rise of intraocular pressure⁴⁻⁶, cystoid macular edema⁶⁻⁸, corneal endothelial damage⁵⁻⁹, macular hole¹⁰, retinal detachment¹ and intraocular lens damage. The authors experience of 500 cases of YAG Laser Capsulotomy in last 15 years is presented here.

This study is designed to find out different types of PCO, time interval between surgery and development

of visually evident PCO and visual out come of YAG laser capsulotomy.

METHODOLOGY

The study was conducted between 1993 to 2008 in the Department of Ophthalmology Unit I, Dow Medical College and Civil Hospital, Karachi. The patient were operated for extra capsular cataract extraction and phacoemulsification were included in the study, a specifically design performa was used for collection of data.

The patients were thoroughly worked up in Out Patient Department (OPD) starting from visual acuity recording, slit lamp examination, intraocular pressure recording, funduscopy. For YAG laser we used four point NEO DYMIN YAG laser. After YAG, patient were given mild steroid like flourome-thalone and patient were seen after one hour for raised Intra Ocular Pressure (IOP) and advised to attend OPD on second day and were followed up with regular visit if their was a need.

RESULTS

Three hundred and fifty patients were male (70%) and one hundred and fifty were females 30% average age was fifty years ranging from 20 to 80 years. Of the five

Correspondence:

Dr. Mirza Shafiq Ali Baig, Associate Professor;
KDA, Overseas Bunglows, House No. K.U.S. 01,
Block 16-A, Gulistan-e-Jauhar, Karachi.
Phones: 021-4030494-5, 0300-2126575.
E-mail: drshafiqbaig@gmail.com

Time Period	No.	%
6 months	40 Patients	8
6 months to 1 year	100 Patients	20
1 year to 2 year	180 Patients	36
2 year above	180 Patients	36

Table I. Time period between Cataract extraction and Nd YAG laser capsulotomy

hundred eyes four fifty (90%) had implanted posterior chamber IOL, while fifty (10%) were aphakic. The time period between surgery and YAG laser was between 6 months to 12 years (Table I).

Type of posterior capsule opacification in this study is shown in Table II. The average pulse energy was 7.8 milli joules ranging from 6.5 to 13 milli-joule energy was single pulse and number of shots were on an average 16 ranging from 10 to 50 shots. The result of pre-laser visual acuity and post laser visual acuity is compared in Table III. There was no improvement in visual acuity in 70 patients in whom retinal problem was noticed after Nd YAG laser capsulotomy, Diabetic retinopathy seen in 30 patients, ARMD was noticed in 20 patients while 10 patients showed traumatic maculopathy, and another 10 showed central retinal vein occlusion. Complication associated with laser were shown in Table IV.

DISCUSSION

Advancement in cataract surgery and new developments like phaco-emulsification opacification of posterior capsule has become one of the commonest cause of decreased vision after cataract surgery.¹ In this study

Table III. Visual acuity before and after Nd YAG laser capsulotomy

Visual Activity	Pre-Laser	Post-Laser
< 6/60	190(39%)	40(8%)
6/60	50(10%)	40(8%)
6/36	100(20%)	70(12%)
6/24	60(11%)	80(16%)
6/18	70(12%)	160(32%)
6/12	30(6%)	100(20%)
6/9	1(.2%)	70(12%)
6/6	0	20(4%)

Type of PCO	No.	%
Capsular fibrosis	260	51
Elsching pearls	120	24
Capsular wrinkling	70	14
Pigment deposit	50	10

Table II. Type of Posterior Capsule Opacification (PCO)

out of five hundred patient 350 were male (70%) and 150 were female (30%) Hasan reported 60% male and 40% female in their study.³ Opacification of posterior capsule is more accelerated in children as observed in the current study and similar results were seen in the data presented by Kundi⁹ who showed 92% PCO in children. ND YAG laser average capsulotomy in this study was 23 months which is some what different from the study by Hasan who showed capsulotomy at 2.49 years.³ Capsular fibrosis was predominant cause of PCO in this study as was in Hasan's research showing Elsching pearls was the commonest cause.³

Dramatic improvement in visual acuity was seen after YAG laser and 60% recorded visual acuity was 6/18 or better, no deterioration was seen. In the study by Panezai¹³ pre-laser hand movement vision improved to 6/36 and 6/18 pre-laser vision improved to 6/6 complications in the present study were raised IOP, damage to IOL, disruption of anterior vitreous phase, cystoid macular edema which are well recognized complications and have been reported by a number of authors.^{8-11,20,22}

CONCLUSION

The PCO is a common complication of cataract surgery ND YAG laser capsulotomy is a very beneficial OPD procedure in this study group the indication were optical but it can be performed for therapeutic purpose.

Table VI. Immediate complication after Nd YAG laser capsulotomy

Complication	No.	%
Raised IOP	300	60
Damage to IOL	130	24
Hyphaema	10	2
Macular aedema	10	2
Herniation of anterior vitreous	40	8

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