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Survey of Yog Laser Capsulotomy

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Abstract – The most frequent delayed complication in cataract surgery has been discovered to be posterior capsule opacification (PCO). The Nd: YAG laser capsulotomy, on the other side, is recognised as a normal therapy for PCO. While a noninvasive and effective therapy is Nd: YAG laser capsulotomy, it carries the possibility of any complications. Efficient options to minimise problems during Nd: YAG capsulotomy are by utilising fewer overall resources and conducting smaller capsulotomies. The aim of this analysis is to discuss the complications associated with Nd: YAG laser capsulotomy and the effects on such complications of capsulotomy size and total energy used.

Keywords: Nd: YAG Laser, Capsulotomy, Opacification of posterior capsule (PCO)

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INTRODUCTION

The most popular delayed complication in cataract surgery is Posterior capsule opacification (PCO). The occurrence of PCO was stated to be 20.7 percent at 2 years and 28.5 percent at 5 years after cataract surgery. In the early 1980s, Aron-Rosa and Fankhauser proposed the application of Neodymium: yttrium-aluminum-garnet (Nd: YAG) laser capsulotomy as a therapy for PCO. Nd: YAG laser capsulotomy has been demonstrated to be an efficient solution to surgical discontinuation, preventing endophthalmitis and vitreous failure complications.

Improvement of visual acuity after Nd: YAG laser capsulotomy has been well reported of patients with severe PCO. Increases in exposure to glare and contrast can also be valuable success indicators for certain patients. While Nd: YAG laser capsulotomy is known as a normal PCO procedure and has been shown to be safe and efficient, it is not without complications, some of which may be sight-threatening, such as retinal edoema and detachment. Several studies have reported intraocular lens (IOL) injury, increased intraocular pressure (IOP), glaucoma, retinal haemorrhage, iritis, vitreous prolapse, maize

Cataract, which is cuarable, is the most prevalent source of blindness internationally. The incidence of blindness in the Indian community due to senile cataracts is strong. Quality cataract surgery for both rural and metropolitan communities has to be carried out. At this point in time, it is widely agreed that 'Extra Capsular Cataract Extraction' is equivalent to 'Intra Capsular Cataract Extraction' of 'Posterior chamber Intra Ocular Lens' and clear of significant complications. The most popular complication following ECCE with PC-IOL is posterior capsular opacification (PCO). If "PCO" occurs after "ECCE," it refers to the same cataract signs, such as blurring of vision and glare. At present, Nd: yag laser capsulotomy is the most commonly practised treatment for the control of symptomatic 'Posterior capsular opacification.' PCO allows visual acuity to deteriorate, but no reliable approaches are sufficient to avoid it. Nd: YAG laser therapy provides the value of a non-invasive, effective, comparatively secure procedure for the treatment of intact posterior capsules that post-operatively opacify and do not need patient hospitalization.1,2 Different reported PCO papers report an 11.8 percent occurrence of postoperative PCO at 1 year, 20.7 percent at 3 years and 28.5 percent at 5 years. In paediatric cataracts, PCO is a big issue where the frequency reaches 100 percent within two months and 5 years after the original procedure. In this study, with this background knowledge we undertook a hospital based prospective study of visual outcome after NdYAG laser therapy in posterior capsular opacity after subjecting them to detailed eye examination.

COMPLICATIONS ASSOCIATED WITH ND: YAG LASER CAPSULOTOMY

IOL Movement and Refractive Changes

After laser therapy, there are many records of displaced IOLs. Two cases of hydrogel implant dislocation into vitreous after Nd: YAG laser capsulotomy have been documented by Levy et al.. The Nd: YAG laser capsulotomy technique has

been shown to cause a slight but detectable backward displacement of the IOL using dual-beam partial coherence interferometry. In order to prevent this complication, they claimed that the larger capsulotomy openings cause greater backward movement, and suggest limited openings. In this analysis, no indicative refractive shift was recorded. Thornval and Naeser, however, failed to observe this effect. We observed that the hyperopic change was higher in patients with a capsulotomy size greater than 3.9 mm relative to patients with smaller capsulotomy sizes in our recently published research. The hyperopic change in the broader capsulotomy community was gradual for up to 4 weeks. If the capsulotomy after Nd: YAG laser capsulotomy is high, we suggest prescribing new spectacles for at least 1 week or 4 weeks. A major hyperopic change was also reported by Zaidi et al., which was particularly significant 1 week after Nd: YAG laser capsulotomy. The change magnitude may also be influenced by IOL type. With plate haptic implants, the hyperopic change was noticed higher than with polymethyl methacrylate and three foldable lenses.

Damage / Pitting IOL

In a sample of 86 eyes, Hassan KS et al. noted IOL pitting of 19.8 percent and Haris WS noted 11.7 percent substantial markings on IOL in 342 eyes during laser capsulotomy. The 9.4 percent range (30 eyes) of 320 eyes was recorded by Khanzada et al. Laser goal beam retro-focusing will reduce the chance of IOL injury.

Uveitis / Iritis

Iritis persisting at 0.4 percent and vitritis persisting at 0.7 percent after a 6-month postoperative duration were noticed by Keates et al. In a sample with an average follow-up duration of 7 months, Chambless observed chronic anterior uveitis in 1.4% of the patients. Gore et al. recorded that 33.5 percent of patients had iritis on slit lamp inspection after Nd: YAG laser capsulotomy manifested as cells and flare in the anterior chamber. The topical steroid was issued to them, and reaction had subsided, leaving no delayed complication. In brief, post-laser therapy may be seen with intermittent anterior chamber flare; chronic iritis or vitritis is uncommon.

Intraocular Pressure Elevation

Increased IOP is the most frequent complication in posterior capsulotomy. The accumulation of debris in the trabecular meshwork, pupillary block, and inflammatory swelling of the ciliary body or iris root consistent with angle closure are different reasons given for the pressure increase following Nd: YAG laser therapy. Increased IOP was recorded in 15 percent to 30 percent of patients in multiple trials despite prophylactic therapy. In 0, 6 percent of his patients, Keates et al. observed elevation of IOP, while Stark et al. stated that after Nd: YAG capsulotomy, the elevation of IOP was 1.0 percent. In patients with glaucoma, Ge et al. observed that the increase in IOP was more prominent in those who experienced a greater increase in IOP within an hour of capsulotomy. Shani et al., however, were unable to find any IOP elevation and postulated that stable pseudophakic eyes do not exhibit IOP elevation after Nd: YAG laser capsulotomy. 13 patients with IOP over 23 mmHg and 9 patients with IOP between 30-48 mmHg, within 2-3 hours after laser capsulotomy, were noted by Ficker et al. There was a propensity for IOP to increase in this community of 24 patients when higher pulse energies were used, particularly when they surpassed 1.5 mg, and the increased IOP was regulated with antiglaucoma therapy. Ari et al. stressed that where a overall energy level of less than 80 mg is used, the intensity and length of elevated IOP and macular thickness are smaller.

In our sample, one patient (2.7%) in the limited community and three patients (9.3%) in the broader capsulotomy community had a moderate IOP elevation one week after Nd: YAG laser capsulotomy, respectively. The IOP rise was larger than in previous experiments. Previous research have provided no details on the scale of the capsulotomy. Thus, it is not necessary to equate changes in IOP with previous research. In larger capsulotomy communities, more capsule particles emitted with larger capsulotomies may be the cause for higher elevation values.

Cystoid Edema of the Macular

Since intraocular operation, injuries, and a number of other inflammatory disorders involving the eye, cystoid macular edoema (CME) takes place. The CME aetiology following Nd: YAG laser capsulotomy most likely involves vitreous cavity movement and vitreous injury, leading to the release of inflammatory mediators. A role can also be played by vitreoretinal traction induced by the treatment.

Previous research also examined macular thickness shifts following laser capsulotomy with Nd: YAG. While some of the previous studies have recorded CME, after Nd: YAG laser capsulotomy, several of them find no substantial changes in macular thickness.

When capsulotomy was postponed by more than 6 months from the original IOL implant date, Lewis et al . observed a low CME intensity, Ari et al . analysed how various energy levels of Nd: YAG laser capsulotomy influence macular thickness. Based on the energy levels used in Nd: YAG laser capsulotomy, they split patients into two classes. They observed that, relative to preoperative stages, all groups had improved macular thickness; measures of macular thickness in patients infected

with high energy levels were slightly higher compared to low energy levels. A sequence of 897 Nd: YAG laser capsulotomies were investigated for the complications of CME in another report. 11 patients developed CME during the Nd: YAG laser capsulotomy. There were no risk factors for the amount of laser pulses and energy delivered.

In our research, energy levels were identical in capsulotomy groups of both small and broad sizes. The comparison between two classes of macular thickness revealed little distinction either preoperatively or postoperatively for 1 week, 4 weeks or 12 weeks. Important macular thickening was found in both groups at 1 week; this discrepancy was not statistically significant between the groups. Mean macular thicknesses at measures of 4 and 12 weeks were reduced to preoperative stages.

Tear Retinal and Detachment

The risk of RD after Nd: YAG laser capsulotomy is estimated to be 4 times that of the risk of RD after Nd: YAG laser capsulotomy after uneventful surgery without capsulotomy, Raza (11 patients (2 percent) reported). Steinert et al. (19) stated that 8 patients formed RD out of 897 patients treated with Nd: YAG laser capsulotomy.

Retrospective evidence review focused on Medicare claims in the US shows that Nd: YAG laser capsulotomy is correlated with a slightly increased incidence of RD, stronger correlations have been established with a background of RD or lattice degeneration, an axial duration greater than 24.0 mm, and post-operative capsule breakup (49). The higher incidence of RD after capsulotomy in eyes with intraoperative complications, axial myopia and vitreoretinal pathology is verified by many other retrospective studies (52-55); nevertheless, 2 studies find no connexion in the absence of these risk factors.

Sheard et al. have planned an analysis to evaluate whether RD after Nd: YAG laser capsulotomy is related to a higher frequency of posterior vitreous detachment (PVD) than in controls and whether vitreous status at the time of capsulotomy is helpful in predicting the likelihood of RD. The exact pathways contributing to retinal breaks and RD after Nd: YAG laser capsulotomy are not understood. The incidence of PVD was slightly higher in eyes following extracapsular cataract detachment and IOL implantation than in Nd: YAG laser capsulotomy-independent Phakic eyes. They concluded that the existence or absence of PVD at the time of capsulotomy was not beneficial in evaluating the likelihood of RD in the first year after laser therapy. Capsulotomy was not correlated with a substantially higher occurrence of novel PVD.

Additional complications

Other complications identified in isolation involve pupillary block glaucoma as well as aqueous misdirection syndrome, macular hole, retinal haemorrhage, spreading of endocapsular low-grade endophthalmitis, and secondary closing of capsulotomy aperture.

MATERIAL AND METHODS

The research involves 100 eyes of 100 patients in the Regional Eye Hospital, Warangal, Telangana state outpatient department who underwent extra capsular cataract extraction with PCIOL in our hospital or elsewhere diagnosed with PCO by comprehensive eye examination during the duration from July 2013 to August 2014. And patients infected with LASER capsulotomy have been tracked for 6 months and the final visual effect has been determined. During July 2013 to August 2014, the research analysis was performed on patients attending the patient clinic at the Regional Eye Hospital, Warangal. Nd: YAG laser capsulotomy has been done in 100 out of 100 patients' eyes. It was a prospective outpatient hospital-based analysis who underwent extra capsular cataract detachment with PCIOL implantation in Regional Eye Hospital, Warangal or elsewhere that was diagnosed with PCO through red reflex retinoscopy assessment. These patients were tracked for a duration of at least 6 months. The key problems in both situations were impaired vision that ranged from hand gestures to 6/18. Until having laser capsulotomy, each patient was tested to ensure the vision deterioration was indeed due to cataracts. In each event, following tests were conducted before posterior capsulotomy, namely-Full ophthalmic background and medical history, Better corrected vision acuity, Schiotz tonometer intraocular pressure recording and gonioscopy was conducted to remove Psuedophakic glaucoma, Slit lamp analysis performed to assess red reflex and anterior segment pathology, Fundus examination-Direct and Industrial glaucoma Direct ophthalmoscopy is the single and most reliable technique for evaluating capsular opacity. Fundus view with the Hurby lens can also allow correct capsular clouding evaluation where substantial capsular opacity may penetrate as indirect ophtholmoscopy.

Inclusion Criteria: Posterior capsular opacity of PCIOL implantation accompanying ECCE. There were patients above 14 years of age and aged patients included. Since cataract treatment, patients have more than 3 months of follow-up. Patients with two or more lines of limited, best-corrected vision.

Exclusion criteria: patients unable or unable to correct appropriately for the operation, patients under 14 years of age removed, dislocated IOL and

basic extra capsular cataract extraction, patients undertaking combination procedures [such as trabeculectomy with PCIOL], PCO diagnosed with ocular conditions and complications such as retinal degeneration, glaucoma, complicated and traumatic cataracts, and complications such as retinal degeneration, glaucoma, complicated and traumatic cataracts

Procedure Nd: YAG Laser posterior capsulotomy: Patient preparation: The patients were brought to the laser after full assessment. The patient's informed consent was taken. The patient was advised that for each arrow, she would experience a small stinging feeling, see a blinding flash and hear a clicking echo. He was advised to tell him urgently if he felt giddy, suggesting a syncopal assault. For optimum patient satisfaction, the modification of stool, chin rest and foot rest was carried out. A head brace was inserted. The room was optimally illuminated. In one sitting under topical anaesthesia, capsulotomy was conducted using 4 percent lignocaine in the dilated pupil.

STATISTICAL ANALYSIS

For creating tables and diagrams, Microsoft Office 2007 was used. For the analysis of the findings, statistical statistics such as mean and percentages were used.

Age	Number of cases	Percentage
14-21 yrs	3	3%
21-40 yrs	10	10%
41-60 yrs	37	37%
61-80 yrs	42	42%
>80 yrs	8	8%
Sex		
Male	52	52%
Female	48	48%
Eye		
Right eye	44	44%
Left eye	56	56%
Types		
Fibrous	20	20%
Elsching's Pearls	65	65%
Mixed	15	15%

Table-1: Demographic distribution in study

Table- 2 Grading of posterior capsular opacity

Grade	Fundus details	No. of cases
Grade- 0	No evidence of PCO	0
Grade- 1	Pacifications limited to periphery, the central part is clear	14
Grade- 2	Diffuse opacity appreciated with slit lamp- mild obscuration of fundus details	30
Grade- 3	Opacity of posterior capsule with marked obscuration of fundus details	34
Grade- 4	Total thick opacity with no fundal glow	22

RESULTS

The following findings were made after a short-term analysis of 12 months and 100 patients were reported with posterior capsular opacity, diagnosed by retinoscopy, slit lamp test, direct and indirect red reflex assessment. These cases were split between cataract extraction and PCO production according to age / sex wisdom and also according to length. Based on the fundus data and Nd: yag laser capsulotomy conducted for both instances, PCO was ranked. Reported, contrasted and evaluated pre-laser and post-laser visual acuity. Protection, effectiveness and post-laser problems have been documented, followed and handled with Nd: yag laser. Table-1 reveals a 1.1:1 M: F ratio that was not important. In both males and females, PCO can occur equally. Around 78 per cent of the patients were in the age group of 41-80 years. This could be the age at which the Ophthalmologist presents patients with age-related cataract owing to visual incapacitation. In this research sample, left eye involvement (56 percent) was more than right eye involvement (44 percent). The most popular type was Elschnig 's Pearl type of PCO (65 percent) than the Fibrous type (20 percent) and Mixed type (15 percent). PCO was ranked on the basis of Fundus results shown through direct or indirect ophthalmoscopy where the diagnosis of extreme PCO (Grade-4) was around 22%, moderate (Grade 2 and 3) was 64% and mild (Grade-1) was 14%. The overall accumulated energy needed to conduct an effective capsulotomy (energy per pulse in mj x number of pulses) ranged from 25 to 125 mj. The mean gross combined energy supplied for PCO type elsching pearl was 65 ± 15 mj whereas it was 85 ± 20 mj for PCO type fibrous and mixed. Overall, it was 75 ± 15 mj but the maximum amount of patients needing less than 100 mj & of those needing more than 100 mj was higher than the chance of an improvement of intraocular pressure. Around 65% of these patients were diagnosed with PCO from 3-12 months after surgery, 15% were diagnosed 12 months after surgery, and 20% formed PCO just 3 months after surgery. This research demonstrated excellent gains in vision acuity. Visual acuity increased to 6/6 for 22 events, 6/9 for 35, 6/12 for 15, 6/18 for 8, 6/24 for 5, 6/36 for 7, 6/60 for 3. Overall, there was perceptual change in 95 percent of the patients surveyed. However, there was no visual change for 5 percent of the patients.

DISCUSSION

The research was performed in 100 eyes of 100 patients who underwent extra capsular cataract detachment with PCIOL implantation in Regional Eye Hospital, Warangal or elsewhere, a hospital-based outpatient prospective study diagnosed with PCO through red reflex retinoscopy examination. These patients were tracked for 6 months. The major problems were minimised in both situations, ranging from hand gestures to 6/18. Each patient was examined before undertaking laser capsulotomy to ensure that vision deterioration only happened after Cataract. Benefits of Nd: YAG laser

capsulotomy: Nd-YAG laser capsuloyomy therapy provides the value of a reasonably effective, non-invasive, reliable, out-patient treatment to treat the intact posterior capsule that opacifies post-operatively. Since several problems such as endophthalmitis are involved with the surgical operation for PCO, the usage of Nd YAG laser in the care of PCO has increased the visual outcome of cataract surgery. M Zarnowski Polak. 25 & 26 eyes were used in T Zogorski Z3 and the visual result was 89 percent, 95 percent and 95 percent in our current analysis. Vision acuity was not increased in one situation owing to glaucomatous optic atrophy-low-tension glaucoma that could only be observed during capsulotomy. Another case is attributed to diabetic optic nerve neuropathy, while another case is attributed to myopic retina degeneration.

Hasan, et al4, Wilkins et al5, Panezai MN6, Shawani MA and Hameed K, Hayashi, K., Hayashi, H., et al.7, Wang, J, et al.8 Yilmag S., et al. ,9 The findings of Stark W.J.10 were close to those of our report. PCO incidence: Nd: YAG laser capsulotomy incidence at this institution is approximately 10-12 percent per year, as we only use PMMA lenses, while foldable intraocular lenses were correlated with a far lower rate of posterior capsular opacification (15 percent) compared to rigid once (25 percent). The prevalence of PCO in adults is 10 percent 1 year after surgery, 20 percent 2 years after surgery and more than 25 percent 3 to 5 years after surgery, according to the Meta study by Schaumberg et al11. PCO sex ratio: Among the patients who established PCO, there was no major sex predilection. Cataract is the world's leading cause of blindness, equivalent to both male and female, but conditions such as PCO will often arise in equivalent amounts while normal cataract surgery is done. Males were 52 percent in our sample and females were 48 percent with a 1.1:1 male-female ratio. This presumably indicates that the female demographic is less likely to require cataract surgery or to be treated for their impaired vision following surgery. The sex ratio of 60 percent vs. 40 percent was noticed by Tayyab and colleagues 12.

Cumulative laser energy in mj.	Elschnig pearl	Fibrous and mixed	Total
<50	9%	1%	10%
51-60	12%	0%	12%
61-70	20%	3%	23%
71-80	14%	4%	18%
81-90	10%	15%	25%
91-100	--	8%	8%
>100	--	4%	4%
Total	65%	35%	100%

Table-3: Energy required in different types of PCO (n=100).

In one patient category and in the second group of their study, 50 percent vs. 50 percent.

PCO age distribution: 78 percent of patients were in the age range of 41-80 years. This is perhaps the era at which the ophthalmologist presents patients with age-related cataracts. In this research sample, left eye involvement (56 percent) was more than right eye involvement (44 percent).

Period between surgery and PCO: roughly 65 percent of these patients were diagnosed with PCO between 3-12 months after surgery, 15 percent were diagnosed 12 months after surgery, and 20 percent formed PCO within 3 months of surgery. This may be because after initial cataract operation, persons who had undergone visual reconstruction may have been too reliant on clear vision and would be visually affected as PCO sets in, thus the early appearance.

PCO Types: The most common type of PCO is Elschnig's Pearl type (65 percent) opposed to the Fibrous type (20 percent) and Mixed type (15 percent). Based on the Fundus data seen through direct or indirect ophthalmoscopy, PCO was classified where extreme PCO (Grade-4) diagnosed was approximately 22 percent, moderate (Grade 2 and 3) was 64 percent and mild (Grade-1) was 14 percent. In a retrospective analysis by Baratz,13 the combined likelihood of posterior Nd-YAG capsulotomy was greater in 9 years (38%) and less in 1 year (6%). Posterior Capsular Opacification of the Elschnig pearl type was prevalent (65 percent) then fibrous and mixed (35 percent).

Complete cumulative energy needed for capsulotomy: The total cumulative energy required for sufficient capsulotomy (energy per pulse in mj x number of pulses) ranged from 25 mj to 125 mj. The mean total cumulative energy delivered for elsching pearl form Posterior Capsular Opacification was 65 ± 15 mj, while higher energy 85 ± 20 mj was expected for fibrous and mixed form Posterior Capsular Opacification. The mean average energy supplied was 75 ± 15 mj, but the overall amount of patients needing less than 100 mj for capsulotomy and more than 100 mj of those needing a raise of intraocular pressure risk was larger. Energy per pulse was used in maximal experiments varying from 0.8-3.2 mj but the amount of pulses was high. The person pulse energy used in this analysis was higher because of some Machine setting problem, but we had fewer laser short output. Thus, in all experiments and other tests, total energy was almost similar. In another analysis by Richter et al.14, they observed that the overall number of patients needing less than 200 mj for capsulotomy and that the possibility of an improvement in intraocular pressure was higher in those needing more than 200 mj.

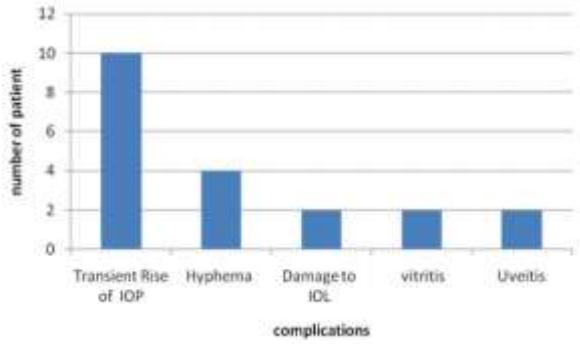

Figure-1: Complication in study

Pre laser visual acuity	Post laser visual acuity							
	6/6	6/9	6/12	6/18	6/24	6/36	6/60	CF 5 mts – hm
CF 5 mts – HM	0	3	11	4	5	7	3	5
6/36 – 6/60	14	10	4	4	0	0	0	0
6/18 – 6/24	8	2	0	0	0	0	0	0

Table-4: Visual improvement after Nd: YAG laser posterior capsulotomy

Nd: YAG laser complications: Nd: YAG laser capsulotomy complications are very small and intermittent, which can be handled through routine follow-up on an outpatient basis. It concluded that it helps to maintain visual acuity by reducing PCO and the related usage of Nd: YAG laser capsulotomy. Careful follow-up is important with Nd: YAG laser capsulotmy and topical 0.5 percent declines of Timolol maleate after capsulotmy avoids IOP spikes that might occur in certain situations. In patients displaying an uncontrollable spike in IOP with topical Timolol alone, oral acetazolamide along with topical Timolol should be used. Proper case selection is critical. Pitting of IOL in uncooperative patients can occur. Caution may be practised in cases with retinal detachment in other eyes, increased axial duration and peripheral degeneration. Nd: YAG laser capsulotomy should be delayed and pursued to reduce the occurrence of iritis by at least 3 months after cataract surgery. The most prominent early post-laser problems seen were intermittent elevation of intraocular pressure and hyphema. No severe complications, such as cystoid macular oedema, retinal detachment, iridocyclitis, excluding temporary intraocular pressure elevation in 10 cases, hyphema in 4 cases, intraocular lens pitting in 2 cases, were observed following Nd-YAG laser capsulotomy. 2 instances of Vitreous in Ac and 2 cases of Uveitis / Vitritis. These have been conservatively handled. In 1991, 897 patients who undergone Nd: YAG laser capsulotomy were examined by Steinert, R.F.,Puliafito, C. A., et al.15. 11 patients (1.23%) developed CME after laser treatment, 8 patients (0.89%) developed RD. 7 patients developed glaucoma. There were no risk factors in the amount of laser pulses and energy generated. To diagnose risks, patients need long-term follow-up.

Increased ocular pressure: Intraocular pressure assessment has been well recorded during both anterior section laser surgeries. Early researchers such as Aron-Rosa et al16 did not discover any lasting IOP elevation, but subsequent studies showed it might occur. In 0.6 percent of his patients, Keates et al.15 observed IOP elevation, where Stark et al. recorded 1.0 percent in their analysis. Cobo et al.17 also did not notice any persistent improvement in IOP in their 3 month follow-up analysis. In this analysis, the increase in IOP up to 2 mm Hg within 4 hours was 32 percent, 8 percent showed a 3 mm Hg increase in IOP and 1 case showed a 5 mm Hg increase.

Retinal detachment: Most studies are done on posterior capsulotomy of the Nd: YAG laser and retinal detachment growth. Initial research by Aron-Rosa et al., 16 recorded 0.08% occurrence, Steinert et al. ,15 recorded 0.89%. There was no case of retinal detachment in this study. This may be because of the lack of our situations of risk factors.

Cystoid Macular edoema: Several reports have observed the progression of cystoid macular edoema after Nd: YAG laser posterior capsulotomy. According to Winslow and Taylor18, the prevalence of cystoid macular edoema was 0.55 percent and they related this phenomenon to vitreous dysfunction secondary to diffusion of Hyaluronic acid and prostaglandin into the damaged posterior capsule.

CONCLUSION

Nd: YAG laser capsulotomy, with immediate progress, is a quick and non-invasive treatment. While it is non-invasive and deemed better than the surgical route, certain risks remain at risk. Some recent researches, including our review, have examined the impact of capsulotomy size and laser energy levels on postcasulotomy complications. The size of capsulotomy is important since patients receiving lower doses of laser energy can gain from less complications of RD, IOP increase, and maybe less CME for perhaps a smaller capsulotomy. The risk of IOL dislocation, particularly with plate haptic silicone IOLs, may be significantly lower. In our research, while energy levels were identical in the hyperopic change of small and large capsulotomy classes, IOP raise and increased macular thickness were observed to be lower in patients with a smaller capsulotomy scale. Laser energy level is another parameter that is considered significant. IOP raise and increase in macular thickness were higher with higher energy levels, Ari et al. reported. Steiner et al., however, stated that the amount of laser pulses and energy delivered were not risk factors for cystoid macular edoema growth.

In conclusion, after Nd: YAG laser capsulotomy, certain complications tend to be inevitable , especially growing in IOP and macular thickness. Using fewer overall resources and conducting smaller capsulotomies are realistic options after Nd: YAG capsulotomy to minimise complications. The benefit of a non-invasive, efficient, comparatively safe procedure for controlling intact

posterior capsular opacity was offered by Nd-YAG laser therapy, which does not involve hospitalisation for patients.

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