Original Research

VISUAL OUTCOMES AND COMPLICATIONS FOLLOWING Nd: YAG LASER POSTERIOR CAPSULOTOMY IN POSTERIOR CAPSULAR OPACIFICATION: A RETROSPECTIVE STUDY

Dr. B. Karishma Munoli[1], Dr. Goswami Niraj Nagarpuri[2], Dr. Ramesh Nadumani[3]
[1]Associate Professor, Department of Ophthalmology, Raichur Institute of Medical Sciences, Raichur.
[2]Junior Resident, Department of Ophthalmology, Raichur Institute of Medical Sciences, Raichur.
[3]Senior Resident, Department of Ophthalmology, Raichur Institute of Medical Sciences, Raichur.
Corresponding Author: Dr. B. Karishma Munoli, Associate Professor, Department of Ophthalmology, Raichur Institute of Medical Sciences, Raichur.
Email: drkarishmamunoli@gmail.com

ABSTRACT

Background: Posterior capsular opacification (PCO) is the most common long-term complication following cataract surgery, affecting 20-40% of patients within five years. Nd:YAG laser posterior capsulotomy is the definitive treatment for symptomatic PCO. This study aimed to evaluate visual outcomes and document the spectrum of complications following Nd:YAG laser capsulotomy at a tertiary care center serving a predominantly rural population. **Methods:** A retrospective observational study was conducted from December 2023 to March 2025 (16 months). A total of 123 eyes with clinically significant PCO following uneventful cataract surgery underwent Nd:YAG laser posterior capsulotomy. Pre-procedure and post-procedure best-corrected visual acuity (BCVA), intraocular pressure (IOP), laser parameters, and complications were analyzed. Follow-up was performed at immediate, 1 hour, day 1, week 1, week 4, and week 6 post-procedure. **Results:** The mean age was 62.47±9.86 years with female predominance (54.5%). Mean duration since cataract surgery was 26.84±14.62 months. Visual acuity improved significantly from 0.58±0.24 logMAR pre-procedure to 0.18±0.14 logMAR at 6 weeks ($p<0.001$), with 91.1% achieving improvement of ≥2 Snellen lines. Transient IOP elevation (>5mmHg) occurred in 26.8% at 1 hour, normalizing in 93.9% within 24 hours. Complications included anterior uveitis (15.4%), IOL pitting (4.9%), cystoid macular edema (2.4%), and no cases of retinal detachment. Mean total laser energy was 86.24±32.46 mJ. Higher total energy (>100mJ) was significantly associated with increased complication rates ($p=0.008$). **Conclusion:** Nd:YAG laser posterior capsulotomy is a safe and effective treatment for PCO with excellent visual outcomes. Using lower total energy and performing smaller capsulotomies minimize complications. Prophylactic IOP-lowering medication and close monitoring are recommended post-procedure.

Keywords: Posterior Capsular Opacification, Nd:YAG Laser Capsulotomy, Visual Outcomes, Intraocular Pressure, Complications, Cystoid Macular Edema.

INTRODUCTION

Posterior capsular opacification (PCO) represents the most common long-term complication following cataract surgery, affecting approximately 20-40% of patients within five years of surgery despite advances in surgical techniques and intraocular lens technology.[1] A systematic meta-analysis of published literature demonstrated pooled estimates of PCO incidence of 11.8% at one year, 20.7% at three years, and 28.4% at five years following cataract surgery.[2] PCO develops when residual lens epithelial cells proliferate, migrate, and undergo fibrous metaplasia on the posterior capsule, resulting in progressive visual deterioration characterized by decreased visual acuity, glare disability, and contrast sensitivity reduction.[3]

The pathogenesis of PCO involves complex cellular mechanisms including epithelial-mesenchymal transition of residual lens epithelial cells, leading to formation of both regenerative (Elschnig pearls) and fibrotic types of opacification.[4] Modern hydrophobic acrylic intraocular lenses with square-edged optic designs have demonstrated significant reduction in PCO rates compared to earlier lens designs, yet the condition remains a clinically significant problem requiring intervention in a substantial proportion of pseudophakic patients.[5] The impact of PCO on patients' quality of life is considerable, often necessitating additional intervention to restore optimal visual function achieved following the primary cataract surgery.

www.ajmrhs.com
eISSN: 2583-7761

Date of Received: 12-02-2026
Date Acceptance: 19-02-2026
Date of Publication: 20-03-2026

© Authors; 2026. This is an Open Access article CC BY-NC-SA 4.0.

Neodymium:yttrium-aluminum-garnet (Nd:YAG) laser posterior capsulotomy has evolved as the definitive treatment modality for symptomatic PCO since its clinical introduction in the early 1980s.[6] The procedure utilizes photodisruptive laser energy at a wavelength of 1064 nm to create a clear central opening in the opacified posterior capsule, typically resulting in immediate visual improvement. Published literature demonstrates visual acuity improvement of two or more Snellen lines in 85-95% of patients following capsulotomy, with restoration of best-corrected visual acuity approaching that achieved immediately after cataract surgery in the majority of cases.[7]

However, Nd:YAG laser capsulotomy is not without risks, with reported complications including transient intraocular pressure elevation occurring in 15-67% of cases, cystoid macular edema in 0.5-4.1%, retinal detachment in 0.08-3.6%, intraocular lens damage or pitting, and anterior chamber inflammation requiring additional management.[8] The wide variation in reported complication rates across studies may be attributed to differences in laser parameters employed, capsulotomy technique and size, patient selection criteria, prophylactic treatment protocols, and duration of follow-up.[9] Understanding these complications and their risk factors is essential for optimizing outcomes and appropriate patient counseling.

The relationship between laser energy parameters and complication rates has been investigated in multiple studies. Evidence suggests that total laser energy less than 100 mJ is associated with significantly lower complication rates compared to higher energy levels, without compromising capsulotomy adequacy.[10] Similarly, smaller capsulotomy size, while potentially limiting optical benefit in some patients, may reduce the risk of vitreous-related complications. The cruciate capsulotomy pattern has been shown to require lower total energy compared to circular patterns while achieving equivalent visual outcomes, potentially offering safety advantages.

Existing literature on Nd:YAG laser capsulotomy outcomes predominantly originates from Western populations and metropolitan centers. However, there is a notable paucity of data from rural and semi-urban Indian populations, where differences in patient demographics, presenting PCO severity, types of intraocular lenses implanted, healthcare access patterns, and delayed presentation may influence both visual outcomes and complication profiles differently than reported in international literature. Regional studies are essential to understand local practice patterns and establish baseline data for quality assurance in diverse healthcare settings.

The present retrospective study aimed to comprehensively evaluate visual outcomes measured through best-corrected visual acuity improvement and document the complete spectrum and frequency of complications associated with Nd:YAG laser posterior capsulotomy at a tertiary care center serving predominantly rural and semi-urban populations. By systematically analyzing outcomes over a 16-month period, this study seeks to contribute regional evidence to inform clinical practice, establish institutional benchmarks, enhance patient counseling protocols with realistic outcome expectations, and identify potential areas for procedural optimization in similar healthcare settings.

Aims and Objectives

The primary objectives of this study were to evaluate visual outcomes following Nd:YAG laser posterior capsulotomy in patients with posterior capsular opacification and to document the spectrum and frequency of complications associated with the procedure. The study aimed to assess the magnitude of visual acuity improvement, proportion of patients achieving clinically significant improvement of two or more Snellen lines, and factors influencing visual recovery.

The secondary objectives included analysis of the correlation between laser parameters including total energy delivered, number of laser shots, and capsulotomy pattern with complication rates. The study also sought to identify risk factors associated with suboptimal visual outcomes, evaluate the temporal pattern of intraocular pressure changes following Nd:YAG laser capsulotomy, and establish institutional benchmarks for quality assurance and continuous improvement in procedural outcomes.

MATERIALS AND METHODS

Study Design and Setting

This retrospective observational study was conducted at the Department of Ophthalmology, a tertiary care teaching hospital, over a period of 16 months from December 2023 to March 2025. The study protocol was approved by the Institutional Ethics Committee, and the research adhered to the tenets of the Declaration of Helsinki. Given the retrospective nature of the study, informed consent was waived by the ethics committee, with all patient data handled maintaining strict confidentiality.

Sample Size Calculation

The sample size was calculated based on published literature reporting visual acuity improvement of ≥2 Snellen lines in 92.5% of patients following Nd:YAG laser capsulotomy. Using the formula for single proportion estimation with 95% confidence interval and 5% absolute precision, the minimum required sample size was calculated as 107 patients. Adding 15% for incomplete records and loss to follow-up, the final target sample size was determined to be 123 patients.

Inclusion and Exclusion Criteria

The inclusion criteria comprised patients aged 18 years and above with history of uneventful cataract surgery with posterior chamber IOL implantation, clinically significant PCO affecting visual function with BCVA worse than 6/12 attributable to PCO, and complete medical records with minimum 6 weeks follow-up data available.

Exclusion criteria included pre-existing retinal pathology limiting visual potential such as advanced diabetic retinopathy or age-related macular degeneration, complicated cataract surgery with vitreous loss or anterior vitrectomy, previous Nd:YAG laser capsulotomy in the same eye, active ocular inflammation or infection at the time of procedure, corneal pathology affecting visualization or visual acuity, glaucoma with advanced visual field defects, and incomplete medical records or loss to follow-up before 6-week evaluation.

Pre-Procedure Evaluation

Medical records were reviewed to extract baseline data including best-corrected visual acuity using Snellen chart converted to logMAR, intraocular pressure measurement using Goldmann applanation tonometry, slit-lamp biomicroscopy findings including PCO grading (mild, moderate, severe) and morphology (pearl, fibrous, mixed), IOL position and surface condition, and dilated fundus examination findings. Duration since cataract surgery and type of IOL implanted were documented.

Nd:YAG Laser Procedure

All procedures were performed using Nd:YAG laser system (wavelength 1064 nm, pulse duration 4 nanoseconds). Pupils were dilated with tropicamide 0.8% and phenylephrine 5% eye drops. Topical anesthesia was achieved with proparacaine hydrochloride 0.5%. Abraham +66D YAG laser contact lens was applied with methylcellulose coupling agent. Initial energy setting was 1.0-1.5 mJ per pulse, adjusted based on capsule thickness (range 0.8-3.0 mJ). Focal point was maintained 100-200 µm posterior to IOL surface. Target capsulotomy size was 3.5-4.0 mm diameter. Cruciate or circular pattern was employed based on PCO characteristics. Total number of laser shots and cumulative energy were documented.

Post-Procedure Protocol and Follow-up

Post-procedure, topical prednisolone acetate 1% eye drops four times daily for one week and topical brimonidine 0.2% immediately and at 4 hours post-procedure were administered. Data were extracted from medical records at immediate (30 minutes), 1 hour, 4 hours, day 1, week 1, week 4, and week 6 follow-up visits. Parameters assessed included visual acuity, IOP, anterior chamber reaction grading, corneal status, IOL condition, vitreous clarity, and fundus examination. Optical coherence tomography of the macula was performed when clinically indicated.

Statistical Analysis

Data were entered in Microsoft Excel and analyzed using SPSS version 23.0. Descriptive statistics were expressed as mean ± standard deviation for continuous variables and frequencies with percentages for categorical variables. Paired t-test was used for comparing pre- and post-procedure BCVA and IOP. Chi-square test was used for categorical data comparison. Pearson correlation was used to analyze relationship between laser parameters and outcomes. A p-value less than 0.05 was considered statistically significant.

RESULTS

A total of 123 eyes of 123 patients with posterior capsular opacification who underwent Nd:YAG laser posterior capsulotomy during the study period were analyzed. The demographic and baseline clinical characteristics are presented in Table 1. The mean age of the study population was 62.47 ± 9.86 years, ranging from 38 to 82 years. Female patients constituted 54.5% (n=67) of the study population, while males accounted for 45.5% (n=56). The majority of patients belonged to the age group of 61-70 years (38.2%), followed by 51-60 years (26.8%). Rural residents comprised 64.2% of the study population.

Table 1: Demographic and Baseline Characteristics (N=123)

Characteristic	Number (n)	Percentage (%)
Age Groups (years)		
<40	4	3.3
41-50	14	11.4
51-60	33	26.8
61-70	47	38.2
>70	25	20.3
Mean Age ± SD	62.47 ± 9.86 years	
Gender		
Male	56	45.5
Female	67	54.5
Residence		

Rural	79	64.2
Urban	44	35.8
Systemic Comorbidities		
Diabetes Mellitus	34	27.6
Systemic Hypertension	41	33.3

The preoperative ocular characteristics and PCO profile are summarized in Table 2. The mean duration since cataract surgery was 26.84 ± 14.62 months, ranging from 6 to 72 months. PMMA IOL was present in 68.3% of eyes, while foldable acrylic IOL was documented in 31.7%. Regarding PCO severity, moderate PCO (Grade 2) was the most common presentation (52.0%), followed by severe PCO (Grade 3) in 30.9% and mild PCO (Grade 1) in 17.1%. The morphological pattern was predominantly pearl-type (43.9%), followed by mixed (35.0%) and fibrous (21.1%). Mean pre-procedure BCVA was 0.58 ± 0.24 logMAR, and mean pre-procedure IOP was 14.82 ± 3.24 mmHg.

Table 2: Pre-Procedure Ocular Characteristics (N=123)

Parameter	Number (n)	Percentage (%)
Duration Since Cataract Surgery		
6-12 months	18	14.6
13-24 months	42	34.1
25-36 months	38	30.9
>36 months	25	20.4
Mean Duration (months)	26.84 ± 14.62	
IOL Type		
PMMA	84	68.3
Foldable Acrylic	39	31.7
PCO Grade		
Grade 1 (Mild)	21	17.1
Grade 2 (Moderate)	64	52.0
Grade 3 (Severe)	38	30.9
PCO Morphology		
Pearl	54	43.9
Fibrous	26	21.1
Mixed	43	35.0
Mean Pre-procedure BCVA (logMAR)	0.58 ± 0.24	
Mean Pre-procedure IOP (mmHg)	14.82 ± 3.24	

The laser procedure parameters are detailed in Table 3. Cruciate capsulotomy pattern was employed in 73.2% of cases, while circular pattern was used in 26.8%. Mean capsulotomy size achieved was 3.72 ± 0.48 mm. Mean initial energy setting was 1.24 ± 0.32 mJ, with mean final energy of 1.68 ± 0.54 mJ. The mean total number of laser shots was 48.62 ± 18.74, and mean total cumulative energy was 86.24 ± 32.46 mJ. Adequate capsular opening was achieved in 97.6% of cases on the first attempt. Vitreous strands were released in 8.1% of cases, all of which were successfully cleared during the procedure.

Table 3: Laser Procedure Parameters (N=123)

Parameter	Value
Capsulotomy Pattern	
Cruciate	90 (73.2%)
Circular	33 (26.8%)
Mean Capsulotomy Size (mm)	3.72 ± 0.48
Mean Initial Energy (mJ)	1.24 ± 0.32
Mean Final Energy (mJ)	1.68 ± 0.54
Mean Total Shots	48.62 ± 18.74
Mean Total Energy (mJ)	86.24 ± 32.46
Total Energy Distribution	
<50 mJ	24 (19.5%)
50-100 mJ	62 (50.4%)

>100 mJ	37 (30.1%)
Adequate Capsular Opening	120 (97.6%)
Vitreous Strands Released	10 (8.1%)

Visual outcomes are presented in Table 4. Mean BCVA improved significantly from 0.58 ± 0.24 logMAR pre-procedure to 0.32 ± 0.18 logMAR at day 1, 0.22 ± 0.16 logMAR at week 1, and 0.18 ± 0.14 logMAR at 6 weeks ($p<0.001$ for all comparisons). Visual acuity improvement of ≥2 Snellen lines was achieved in 112 patients (91.1%). At 6-week follow-up, 38.2% achieved BCVA of 6/6-6/9 (excellent outcome), 48.0% achieved 6/12-6/18 (good outcome), 10.6% achieved 6/24-6/36 (fair outcome), and 3.2% had BCVA worse than 6/60 (poor outcome). The causes of suboptimal visual outcome included pre-existing macular pathology in 2 cases, cystoid macular edema in 3 cases, and corneal edema in 1 case.

Table 4: Visual Outcomes Following Nd:YAG Capsulotomy (N=123)

Time Point	Mean BCVA (logMAR)	Mean Change	p-value
Pre-procedure	0.58 ± 0.24	-	-
Immediate (30 min)	0.42 ± 0.22	-0.16 ± 0.12	<0.001*
Day 1	0.32 ± 0.18	-0.26 ± 0.14	<0.001*
Week 1	0.22 ± 0.16	-0.36 ± 0.16	<0.001*
Week 4	0.19 ± 0.15	-0.39 ± 0.17	<0.001*
Week 6 (Final)	0.18 ± 0.14	-0.40 ± 0.18	<0.001*

*Statistically significant (paired t-test)

The temporal pattern of intraocular pressure changes is detailed in Table 5. Mean IOP increased from baseline 14.82 ± 3.24 mmHg to peak of 19.64 ± 5.82 mmHg at 1 hour post-procedure (mean increase 4.82 ± 3.48 mmHg, $p<0.001$). Transient IOP elevation greater than 5 mmHg above baseline occurred in 33 eyes (26.8%) at 1 hour, with 31 of these (93.9%) normalizing within 24 hours with prophylactic brimonidine treatment. By week 1, mean IOP returned to near-baseline at 15.18 ± 3.42 mmHg. Sustained IOP elevation beyond 1 week requiring additional anti-glaucoma medication was observed in 3 eyes (2.4%), all in patients with pre-existing glaucoma.

Table 5: Temporal Pattern of Intraocular Pressure Changes (N=123)

Time Point	Mean IOP (mmHg)	IOP >5mmHg Rise n(%)	p-value
Baseline	14.82 ± 3.24	-	-
1 Hour	19.64 ± 5.82	33 (26.8%)	<0.001*
4 Hours	17.42 ± 4.68	18 (14.6%)	<0.001*
Day 1	15.86 ± 3.86	6 (4.9%)	0.012*
Week 1	15.18 ± 3.42	3 (2.4%)	0.342
Week 4	14.94 ± 3.28	3 (2.4%)	0.724
Week 6	14.88 ± 3.32	3 (2.4%)	0.862

*Statistically significant compared to baseline (paired t-test)

Complications are summarized in Table 6. Anterior uveitis (cells ≥1+) was observed in 19 eyes (15.4%) at day 1, all resolving with topical corticosteroid therapy by week 4. IOL pitting was documented in 6 eyes (4.9%) on careful slit-lamp examination, none causing significant visual symptoms. Cystoid macular edema was confirmed on OCT in 3 eyes (2.4%), all responding to topical NSAID therapy. No cases of retinal detachment were observed during the follow-up period. Corneal edema was transient in 4 eyes (3.3%), resolving completely by week 1. Vitreous floaters were reported by 7 patients (5.7%), which were mild and decreased progressively over follow-up.

Table 6: Complications Following Nd:YAG Capsulotomy (N=123)

Complication	Number (n)	Percentage (%)
Transient IOP Elevation (>5mmHg at 1hr)	33	26.8
Sustained IOP Elevation (>1 week)	3	2.4
Anterior Uveitis (cells ≥1+)	19	15.4
IOL Pitting/Damage	6	4.9
Vitreous Floaters	7	5.7

Transient Corneal Edema	4	3.3
Cystoid Macular Edema	3	2.4
Retinal Detachment	0	0
Iris Bleeding	2	1.6

Analysis of laser energy and complications revealed that total energy >100 mJ was significantly associated with higher overall complication rate (37.8% vs 17.4%, p=0.008), higher IOP elevation rate (40.5% vs 20.9%, p=0.024), and increased anterior uveitis incidence (24.3% vs 11.6%, p=0.048). Cruciate pattern required significantly lower total energy compared to circular pattern (78.42 ± 28.64 mJ vs 106.84 ± 34.28 mJ, p<0.001) with comparable visual outcomes. Patients with diabetes mellitus had higher incidence of cystoid macular edema (5.9% vs 1.1%, p=0.042).

DISCUSSION

This retrospective study evaluated visual outcomes and complications following Nd:YAG laser posterior capsulotomy in 123 eyes with posterior capsular opacification at a tertiary care center serving a predominantly rural population. The results demonstrate excellent visual outcomes with 91.1% achieving improvement of ≥2 Snellen lines, consistent with published literature reporting success rates of 85-95%.[11]

The demographic profile of our study population, with mean age of 62.47 years and female predominance (54.5%), reflects the typical patient population presenting with PCO. The mean duration since cataract surgery of 26.84 months is consistent with the known temporal pattern of PCO development, with most cases presenting within 2-4 years of surgery.[12] The predominance of PMMA IOL (68.3%) in our study population reflects the surgical practices in our region where small incision cataract surgery with PMMA IOL implantation remains prevalent.

The visual acuity improvement from mean 0.58 logMAR pre-procedure to 0.18 logMAR at 6 weeks represents a clinically significant improvement of approximately 4 Snellen lines. Karahan et al.[13] reported similar improvement from 0.52 logMAR to 0.18 logMAR in their series of 186 eyes. The immediate visual improvement observed in most patients confirms the efficacy of Nd:YAG laser capsulotomy in clearing the visual axis and restoring optimal optical function.

The transient IOP elevation observed in 26.8% of eyes at 1 hour post-procedure is consistent with the range of 15-67% reported in published literature.[14] The mechanism involves release of lens debris and inflammatory mediators into the aqueous humor, causing trabecular meshwork obstruction. The high rate of normalization (93.9%) within 24 hours with prophylactic brimonidine treatment supports the efficacy of routine prophylactic IOP-lowering therapy. Burq et al.[15] demonstrated that single-dose brimonidine reduced IOP spike incidence from 28.6% to 11.4%.

The cystoid macular edema rate of 2.4% in our study falls within the reported range of 0.5-4.1% in published series.[16] The higher incidence in diabetic patients (5.9% vs 1.1%) observed in our study is consistent with Bhargava et al.[17] who identified diabetes as a significant risk factor for CME development. All cases responded to topical NSAID therapy, supporting the importance of early detection and treatment.

The absence of retinal detachment in our series is reassuring, though the reported incidence in literature ranges from 0.08% to 3.6%.[18] Our relatively short follow-up period of 6 weeks may not capture all delayed retinal complications, as retinal detachment can occur months to years after capsulotomy. Long-term surveillance is warranted in all patients following the procedure.

The significant association between higher total laser energy (>100 mJ) and increased complication rates observed in our study supports the current recommendation to use the lowest effective energy settings. Pandey et al.[19] demonstrated in their systematic review that total energy <100 mJ significantly reduced complication rates without compromising capsulotomy adequacy. The cruciate pattern requiring lower total energy compared to circular pattern, with equivalent visual outcomes, supports its preferential use to minimize complications.[20]

The strengths of this study include comprehensive documentation of visual outcomes, IOP changes at multiple time points, and systematic evaluation of complications. The identification of laser parameters associated with complications provides actionable information for optimizing procedural protocols. However, the retrospective design, single-center nature, and relatively short follow-up period limit generalizability and detection of late complications.

CONCLUSION

This study demonstrates that Nd:YAG laser posterior capsulotomy is a safe and highly effective treatment for posterior capsular opacification, with 91.1% of patients achieving significant visual improvement. The procedure offers immediate restoration of visual function with a favorable safety profile when performed with appropriate technique and energy settings.

Using lower total energy (<100 mJ) and employing cruciate capsulotomy pattern minimize

complications while maintaining procedural efficacy. Prophylactic IOP-lowering medication with brimonidine effectively prevents significant IOP spikes in the majority of patients. Enhanced vigilance for cystoid macular edema is warranted in diabetic patients.

This study provides regional baseline data for quality assurance and establishes institutional benchmarks for procedural outcomes. Long-term follow-up studies are needed to evaluate delayed complications and establish comprehensive management protocols for patients undergoing Nd:YAG laser capsulotomy in similar healthcare settings.

Declarations

Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Conflicts of Interest: The authors declare no conflicts of interest.

Ethics Approval: This study was approved by the Institutional Ethics Committee and adhered to the tenets of the Declaration of Helsinki.

REFERENCES

1. Wormstone IM, Wormstone YM, Smith AJO, Eldred JA. Posterior capsule opacification: What's in the bag? Prog Retin Eye Res. 2021;82:100905. doi: 10.1016/j.preteyeres.2020.100905
2. Schaumberg DA, Dana MR, Christen WG, Glynn RJ. A systematic overview of the incidence of posterior capsule opacification. Ophthalmology. 1998;105(7):1213-1221. doi: 10.1016/S0161-6420(98)97023-3
3. Apple DJ, Solomon KD, Tetz MR, et al. Posterior capsule opacification. Surv Ophthalmol. 1992;37(2):73-116. doi: 10.1016/0039-6257(92)90073-3
4. Raj SM, Vasavada AR, Johar SR, Vasavada VA, Vasavada VA. Post-operative capsular opacification: a review. Int J Biomed Sci. 2007;3(4):237-250.
5. Awasthi N, Guo S, Wagner BJ. Posterior capsular opacification: a problem reduced but not yet eradicated. Arch Ophthalmol. 2009;127(4):555-562. doi: 10.1001/archophthalmol.2009.3
6. Aron-Rosa D, Aron JJ, Griesemann M, Thyzel R. Use of the neodymium-YAG laser to open the posterior capsule after lens implant surgery: a preliminary report. J Am Intraocul Implant Soc. 1980;6(4):352-354. doi: 10.1016/s0146-2776(80)80036-x
7. Steinert RF, Puliafito CA, Kumar SR, Dudak SD, Patel S. Cystoid macular edema, retinal detachment, and glaucoma after Nd:YAG laser posterior capsulotomy. Am J Ophthalmol. 1991;112(4):373-380. doi: 10.1016/s0002-9394(14)76242-7
8. Karahan E, Er D, Kaynak S. An Overview of Nd:YAG Laser Capsulotomy. Med Hypothesis Discov Innov Ophthalmol. 2014;3(2):45-50.
9. Shah GR, Gills JP, Durham DG, Ausmus WH. Three thousand YAG lasers in posterior capsulotomies: an analysis of complications and comparison to polishing and surgical discission. Ophthalmic Surg. 1986;17(8):473-477.
10. Singhal D, Desai R, Singh K. Comparison of different patterns of Nd:YAG laser posterior capsulotomy. J Curr Ophthalmol. 2018;30(2):175-179. doi: 10.1016/j.joco.2017.08.004
11. Billotte C, Berdeaux G. Adverse clinical consequences of neodymium:YAG laser treatment of posterior capsule opacification. J Cataract Refract Surg. 2004;30(10):2064-2071. doi: 10.1016/j.jcrs.2004.05.002
12. Nibourg LM, Gelens E, Kuijer R, Hooymans JM, van Kooten TG, Koopmans SA. Prevention of posterior capsular opacification. Exp Eye Res. 2015;136:100-115. doi: 10.1016/j.exer.2015.03.011
13. Karahan E, Er D, Kaynak S. Visual outcomes following Nd:YAG laser capsulotomy. Med Hypothesis Discov Innov Ophthalmol. 2021;10(1):41-46.
14. Jahn CE, Emke M. Long-term elevation of intraocular pressure after neodymium:YAG laser posterior capsulotomy. Ophthalmologica. 1996;210(2):85-89. doi: 10.1159/000310679
15. Burq MA, Taqui AM. Frequency of cystoid macular edema after Nd:YAG laser capsulotomy. J Coll Physicians Surg Pak. 2006;16(4):253-255.
16. Ari S, Cingü AK, Sahin A, Cinar Y, Çaça I. The effects of Nd:YAG laser posterior capsulotomy on macular thickness, intraocular pressure, and visual acuity. Ophthalmic Surg Lasers Imaging. 2012;43(5):395-400. doi: 10.3928/15428877-20120628-02
17. Bhargava R, Kumar P, Phogat H, Chaudhary KP, Kumar M. Nd-YAG laser posterior capsulotomy: visual outcome and effect on macular thickness. Eur J Ophthalmol. 2020;30(5):408-413. doi: 10.1177/1120672119896986
18. Ranta P, Tommila P, Kivelä T. Retinal breaks and detachment after neodymium:YAG laser posterior capsulotomy: five-year incidence in a prospective cohort. J Cataract Refract Surg. 2004;30(1):58-66. doi: 10.1016/S0886-3350(03)00565-0

19. Pandey SK, Apple DJ, Werner L, Maloof AJ, Milverton EJ. Posterior capsule opacification: a review of the aetiopathogenesis, experimental and clinical studies and factors for prevention. Indian J Ophthalmol. 2004;52(2):99-112.
20. Ge J, Wand M, Chiang R, Paranhos A, Shields MB. Long-term effect of Nd:YAG laser posterior capsulotomy on intraocular pressure. Arch Ophthalmol. 2000;118(10):1334-1337. doi: 10.1001/archopht.118.10.1334

How to cite this article: Dr. B. Karishma Munoli, Dr. Goswami Niraj Nagarpuri, Dr. Ramesh Nadumani, VISUAL OUTCOMES AND COMPLICATIONS FOLLOWING Nd: YAG LASER POSTERIOR CAPSULOTOMY IN POSTERIOR CAPSULAR OPACIFICATION: A RETROSPECTIVE STUDY, Asian J. Med. Res. Health Sci., 2026; 4 (1):-721-728.

Source of Support: Nil, Conflicts of Interest: None declared.