



Nd:YAG capsulotomy: an update

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ABSTRACT

Background: Posterior capsule opacification (PCO) remains one of the most common late complications following cataract surgery and may lead to decreased visual acuity, glare, contrast sensitivity loss, and impaired visual quality. Nd:YAG laser posterior capsulotomy is currently accepted as the gold standard treatment for symptomatic PCO because of its non-invasive nature and rapid visual rehabilitation. However, despite its widespread use and generally favorable safety profile, concerns remain about procedural variability, postoperative management, and complications such as intraocular pressure elevation, cystoid macular edema, retinal complications, and intraocular lens damage. This updated narrative review aimed to summarize and expand the current evidence on the mechanisms, indications, techniques, outcomes, and complications of Nd:YAG laser posterior capsulotomy.

Methods: A narrative literature review was conducted using PubMed/MEDLINE, Scopus, and Web of Science databases, supplemented by Google Scholar screening. The review primarily focused on studies published between 2010 and 2026, although landmark earlier studies were also included when relevant. Primarily English-language publications were included. The search strategy included combinations of the keywords “Nd:YAG capsulotomy”, “posterior capsule opacification”, “photodisruption”, “intraocular pressure”, “retinal detachment”, “cystoid macular edema”, “capsulotomy size”, and “intraocular lens”. Original articles, clinical studies, systematic reviews, meta-analyses, guideline-based publications, and selected case reports were included. Duplicate publications, conference abstracts without accessible full text, and studies with insufficient methodological or clinical information were excluded.

Results: Current evidence demonstrates that Nd:YAG laser capsulotomy provides effective visual rehabilitation in symptomatic PCO and remains a generally safe procedure. Studies evaluating procedural techniques indicate that both cruciate and circular capsulotomy patterns produce comparable visual outcomes, though differences may exist in energy usage, floaters, light scattering, and macular effects. Significant variability persists in clinical practice regarding timing, postoperative medication use, and follow-up protocols. Although most complications are uncommon, clinically important adverse events including retinal detachment, cystoid macular edema, intraocular pressure elevation, inflammation, and intraocular lens pitting have been reported. The risk of certain complications appears to be influenced by patient characteristics, laser energy levels, capsulotomy size, ocular comorbidities, and the interval between cataract surgery and capsulotomy.

Conclusions: Nd:YAG laser posterior capsulotomy remains an effective and reliable treatment for symptomatic PCO; however, important heterogeneity persists regarding procedural approaches and postoperative management. Current evidence suggests that individualized treatment planning, careful patient selection, and conservative energy settings may help minimize complications. Future prospective and standardized studies focusing on visual quality outcomes, patient-reported measures, optimal timing, and complication risk stratification are needed to improve standardization and clinical decision-making in Nd:YAG laser capsulotomy practice.

KEYWORDS

Nd-YAG laser, laser posterior capsulotomy, lens posterior capsule, capsule opacifications, intraocular lens, intraocular lens implantation, intraocular pressures, retinal detachments, cystoid macular edema, irvine-gass syndrome

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INTRODUCTION

Although posterior capsule opacification (PCO) is one of the most common late complications following cataract surgery, modern sharp-edge intraocular lens (IOL) designs are associated with less PCO than round-edged designs [1]. In current real-world data, the 5-year incidence of PCO is 7.1%–22.6%, while the need for neodymium:yttrium-aluminum-garnet (Nd:YAG) laser capsulotomy ranges between 5.8% and 19.3% [2].

PCO develops as a result of the proliferation, migration, and fibrotic transformation of residual lens epithelial cells, leading to clinical findings such as decreased visual acuity and contrast sensitivity, glare, and impaired visual quality [3]. Treatment thus becomes necessary in symptomatic cases.

In this process, the material, surface properties, and optical design of the IOL play a decisive role [4]. Increased adhesion between the IOL and the posterior capsule reduces cell migration, while hydrophobicity and low surface roughness support this effect. Additionally, a sharp posterior optical edge mechanically blocks cell passage, thereby limiting PCO development; however, the optical-haptic junction areas may constitute weak points in this barrier [5].

Nd:YAG laser capsulotomy has long been recognized as the gold standard for the treatment of PCO and is widely preferred due to its non-invasive nature and ability to provide rapid visual recovery [6]. However, despite the procedure's high efficacy and safety profile, complications such as increased intraocular pressure, cystoid macular edema, and, rarely, retinal tears and detachments have been reported [7].

Recent advancements in imaging techniques and clinical studies provide a more detailed understanding of the effects of Nd:YAG capsulotomy not only on visual acuity but also on high-order aberrations [8]. Nevertheless, significant differences persist among clinical practices regarding procedural techniques, optimal timing, and postoperative management [7].

An earlier overview published in this journal in 2014 summarized the then-available evidence on Nd:YAG laser capsulotomy [6]. The present updated narrative review expands on that work by incorporating evidence published through 2026, including recent large cohort studies, systematic reviews and meta-analyses, contemporary guideline-based recommendations, newer intraocular lens technologies, and updated evidence on procedural techniques and complications.

METHODS

An updated narrative literature review was conducted using PubMed/MEDLINE, Scopus, and Web of Science databases, supplemented by Google Scholar screening, to identify relevant studies on Nd:YAG laser posterior capsulotomy and to update and expand the evidence summarized in the earlier 2014 review [6]. The review primarily focused on studies published between 2010 and 2026, but landmark and historically important earlier publications describing the fundamental mechanisms, historical development, and early clinical applications of Nd:YAG capsulotomy were also included when relevant. The final literature search was performed on 23 April 2026.

Primarily English-language publications were included, though highly relevant studies published in other languages were also considered. The search strategy was based on combinations of the keywords “Nd:YAG capsulotomy”, “posterior capsule opacification”, “photodisruption”, “intraocular pressure”, “retinal detachment”, “cystoid macular edema”, “capsulotomy size”, and “intraocular lens”.

Titles and abstracts were screened for relevance, followed by full-text evaluation of eligible studies. Original articles, clinical studies, systematic reviews, meta-analyses, guideline-based publications, and selected case reports addressing the mechanisms, indications, techniques, clinical outcomes, and complications of Nd:YAG laser posterior capsulotomy were reviewed. Duplicate publications, conference abstracts without accessible full text, and studies with insufficient clinical or methodological information were excluded. Additional relevant publications were identified through manual screening of reference lists.

RESULTS and DISCUSSION

YAG Laser Capsulotomy

Nd:YAG laser is one of the most commonly used laser systems in ophthalmology. The application of Nd:YAG laser capsulotomy for the treatment of PCO, described by Aron-Rosa and Fankhauser in the early 1980s, quickly became the standard treatment method [9, 10].

The Nd:YAG laser is a solid-state laser operating at a wavelength of 1064 nm and exerting its effect through the principle of photodisruption. Nd:YAG laser systems used in clinical practice typically operate using Q-switched or mode-locked technology [11]. While Q-switched systems produce pulses with high peak power at the nanosecond level,

mode-locked systems generate shorter pulses nearly at the picosecond level [11]. These high-energy short pulses initiate the photodisruptive effect in the target tissue. Photodisruption begins with the sudden ionization and plasma formation in the tissue caused by the concentration of laser energy at a small focal point. The rapid expansion of the resulting plasma creates shock waves and cavitation bubbles, leading to mechanical tissue fragmentation. This effect is non-thermal and enables high-precision cutting with minimal damage to surrounding tissues [12–16].

In Nd:YAG laser posterior capsulotomy, various patterns have been described for creating the capsular opening, including cruciate, circular, inverted-U, spiral, T, and H [16] (Figure 1). The literature comparing pattern selection in Nd:YAG posterior capsulotomy has largely focused on the cruciate and circular techniques [17].

Kara et al. showed that while visual and intraocular pressure outcomes were similar for both techniques, the circular pattern involved higher energy usage, more floater symptoms, and a more pronounced effect on macular thickness in the early period [18]. Kim et al. compared the cruciate pattern with a modified round pattern incorporating vitreous strand cutting; while they found no significant differences in visual acuity, intraocular pressure, refraction, and anterior segment parameters, they observed that the modified round technique involved significantly higher total energy and a higher number of pulses [19]. In their study evaluating the effect of the Nd:YAG capsulotomy pattern on optical quality, Li et al. evidenced that the circular capsulotomy was associated with lower intraocular light scattering compared to the cruciate pattern and resulted in less light sensitivity and higher patient satisfaction. However, no significant difference in visual acuity was observed between the groups [17].

In contrast, available data for other patterns such as inverted-U, spiral, T, and H are largely limited to technical descriptions and theoretical advantages [7]. Therefore, current evidence does not demonstrate a clear functional superiority between the cruciate and circular techniques—it suggests that pattern selection should be individualized based on energy requirements, risk of floaters, likelihood of IOL pitting, and the surgeon's experience.

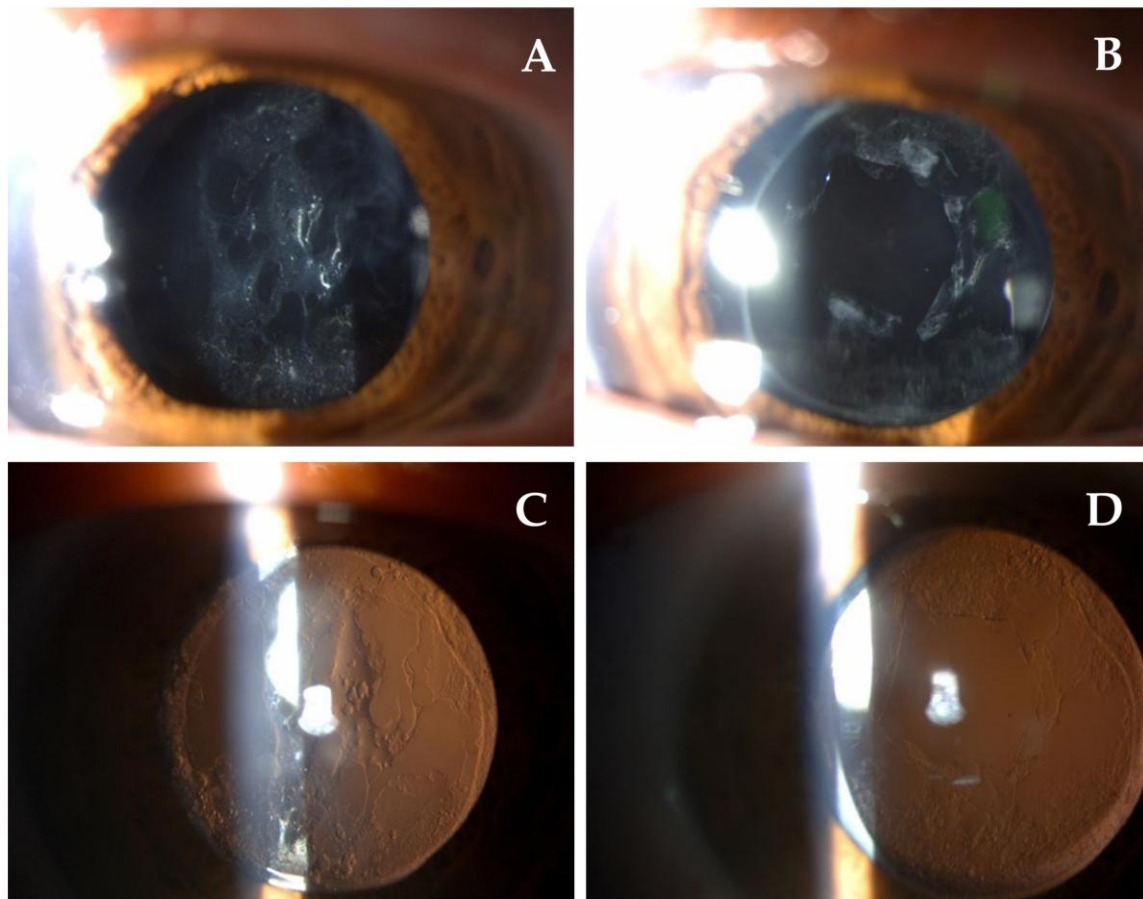


Figure 1. Clinical and retroillumination images before and after Nd:YAG laser posterior capsulotomy in a 63-year-old woman with posterior capsule opacification (PCO). (A) Slit-lamp photograph before treatment displaying dense fibrotic PCO involving the central visual axis. (B) Slit-lamp photograph obtained immediately after Nd:YAG laser posterior capsulotomy, showing a well-centered capsulotomy opening with restoration of the visual axis. (C) Retroillumination image before treatment highlighting extensive central PCO. (D) Retroillumination image after capsulotomy evidencing a patent central capsulotomy and marked clearance of the visual axis.

When the recommendations of the Royal College of Ophthalmologists (RCOphth) and the American Academy of Ophthalmology (AAO) are considered together, the indication for Nd:YAG laser capsulotomy should be individualized according to the patient's functional visual needs and clinical findings [20, 21]. The AAO Preferred Practice Pattern framework emphasizes individualized clinical decision-making based on the patient's functional needs, ocular findings, and overall clinical circumstances [21]. The RCOphth similarly states that the indication should be determined by the patient's symptoms rather than the presence of biomicroscopic PCO; complaints such as blurred vision, glare, dysphotopsia, and loss of contrast are primary concerns, and the severity of PCO does not always correlate with visual acuity [20]. Overall, these recommendations support a patient-centered approach that considers functional symptoms and the individual risk–benefit balance [20, 21].

A survey conducted by Goma and Liu indicates that while physicians widely adopt certain basic approaches in the practice of Nd:YAG laser capsulotomy, there is significant variability in terms of technique and postoperative management. In clinical practice, while most physicians prefer pupil dilation (98.5%) and the use of contact lenses (87.9%) prior to the procedure, different approaches are followed for the capsulotomy creation technique, with the cruciate pattern being the most common (47%). Although the capsulotomy incision is generally planned to exceed pupil diameter (64.4%), there is no clear consensus on postoperative management strategies. Goma and Liu reported postoperative steroid use in 42.4% of cases, with 61.8% of clinicians prescribing steroids for one week. Similarly, postlaser intraocular pressure-lowering agents were used by approximately half of clinicians, most commonly as a single-stat dose (85.1%). A heterogeneous approach was also observed regarding follow-up, which was not performed routinely in approximately 60% of cases; half of the remaining cases were reviewed one month after laser treatment [22].

These findings indicate that, despite Nd:YAG laser capsulotomy being a common and relatively standard procedure, there is significant heterogeneity in clinical practice. These differences can be attributed to factors such as the limited nature of current guidelines on technical details and postoperative management (which are often based on low-level evidence), reliance of many recommendations on expert opinion, clinicians placing greater emphasis on their individual experience due to generally low complication rates, and variability in patient population [23–25]. Additionally, time constraints in busy clinical practice and organizational differences specific to the healthcare system can also influence follow-up and treatment choices [22]. Hence this discrepancy between guideline recommendations and real-world practice underscores the need for studies with higher levels of evidence and standardized practice protocols.

Complications

Retinal Detachment and Tears

Retinal tears and retinal detachment following Nd:YAG laser posterior capsulotomy are rare but clinically significant complications. In their 2017 large population-based cohort study, Wesolosky et al. [26] found 90-day risks of 0.21% for retinal tear and 0.60% for retinal detachment. The cumulative risk for retinal detachment reached 1.39% at 12 months; the increased risk of retinal detachment was concentrated within the first 5 months post-procedure, returning to a baseline plateau thereafter. In that same study, they summarized results from older studies—mostly from the 1980s and 1990s—reporting retinal detachment ranges of 0–3.6%.

Furthermore, meta-analysis data indicate that the risk of retinal detachment increases by approximately 1.5-fold following Nd:YAG laser capsulotomy. However, the presence of moderate heterogeneity suggests that this association may not hold true for all patient groups and that concomitant ocular risk factors may play a significant role [27].

The proposed mechanism is explained by changes in the vitreous structure resulting from the effects of the Nd:YAG laser on the posterior capsule and anterior hyaloid surface, leading to increased vitreoretinal traction. Indeed, it has been shown that an increased number of pulses and total laser energy are associated with anterior hyaloid damage and may raise the risk of retinal complications [28].

Although acute retinal detachment following Nd:YAG laser posterior capsulotomy is rare, it has been reported, notably with high myopia [29, 30].

Intraocular Lens Movement and Refractive Changes

Findings on IOL rotation and refractive changes following Nd:YAG laser posterior capsulotomy vary. Many studies report that refractive changes following Nd:YAG laser posterior capsulotomy are not significant and that refractive stability is generally maintained [31–34].

A 2022 meta-analysis by Tan et al. found no statistically significant short-term changes in spherical equivalent, cylindrical error, or anterior chamber depth following Nd:YAG laser posterior capsulotomy, suggesting that refractive stability is

generally maintained in the early period in pseudophakic eyes. However, subgroup analyses indicated that procedural factors, particularly laser energy and type of capsulotomy, may contribute to heterogeneity of results. Furthermore, the fact that the study included only short-term results (up to one month) and that certain advanced IOL types (e.g., extended depth of focus [EDOF] and trifocal lenses) were not included in the analyses may limit generalizability of the findings [35].

One author in the present study (EK) previously observed a more pronounced hyperopic shift in patients with larger capsulotomy incisions—a change found to progress for up to four weeks. Based on these findings, it has been recommended that the prescription of glasses be delayed for at least one week or up to four weeks in cases where a wide capsulotomy is performed [36].

Uzel et al. reported that intraocular lens tilt and decentration increased in both meridians in the presence of PCO; this condition is thought to be related to fibrotic contraction and traction forces developing in the capsular bag. Following Nd:YAG laser posterior capsulotomy, a significant decrease in tilt values was observed, with no significant change in decentration detected [37].

It is reported that changes in the position of toric intraocular lenses may occur following Nd:YAG capsulotomy. Cinar and colleagues observed a statistically significant increase in toric IOL rotation, an increase in decentration, and a decrease in tilt values following capsulotomy—hence they reported small but significant changes in cylindrical power. It has been noted that these refractive changes remain clinically limited. Additionally, it is shown that the timing of the capsulotomy affects IOL stability, and rotation may be more pronounced in capsulotomies performed in the early postoperative period [38].

Uveitis and Iritis

When evaluating inflammatory side effects following Nd:YAG laser posterior capsulotomy, studies present varying rates [31, 39, 40]. Das et al. report the incidence of iritis/uveitis in the early postoperative period as 10% on day 1 and 8% by the first week [39]. Given the limited sample size of that study, these estimates should be interpreted with appropriate uncertainty.

In contrast, in Johnson et al.'s large-scale study involving 389 patients, despite the frequently observed presence of debris in the anterior chamber it was noted that this was not typically associated with significant inflammatory findings, and clinically significant iritis requiring treatment was a rare occurrence, developing in only three patients [40]. This finding suggests a possible distinction between biomicroscopic anterior chamber reactions and clinically significant uveitis.

The prospective study by Parajuli et al. reported no patients developing an anterior chamber reaction or clinically significant inflammation [31]. The absence of inflammatory complications in this study may be related to patient selection criteria and energy levels applied.

When these studies are evaluated together, it is evident that the incidence of uveitis and anterior chamber reaction following Nd:YAG laser capsulotomy varies from study to study; while some report rates of 8–10%, in others the incidence is quite low or not observed at all [31, 39, 40]. It is also noteworthy that an anterior chamber reaction does not always correlate with clinical uveitis, and subclinical inflammatory findings may be more common [41].

Kolli and colleagues did not observe uveitis flare-ups following Nd:YAG laser capsulotomy in patients with uveitis [42]. In contrast, Rajpoot and colleagues evidenced that recurrent uveitis developed in 31.5% of cases in a large series encompassing various types of uveitis [43]. These findings suggest that uveitis reactivation following Nd:YAG capsulotomy may vary depending on inflammation control, the etiology of uveitis, and the laser energy used.

Intraocular Lens Damage/Pitting

Although Nd:YAG laser posterior capsulotomy is the gold standard method for treating PCO, one of the most common complications is IOL damage, particularly IOL pitting. IOL pitting refers to microscopic defects in the lens optic caused by misdirected laser energy [44]. In clinical studies, reported rates of IOL pitting vary considerably, ranging from 7.8% to 36.9%, although the upper estimate refers specifically to central IOL pitting in a resident-performed capsulotomy series [45–47]. Although the visual impact of small pits is generally considered limited, experimental studies have shown that Nd:YAG damage can reduce contrast sensitivity, increase light scattering, and lead to glare and halo formation. These effects are particularly related to the number, size, and proximity to the optical axis of the pits. Therefore, preventing IOL damage through the use of low energy and proper focusing is of great importance [48, 49].

In addition to laser energy and focusing accuracy, intraocular lens material and IOL design may also influence the severity and characteristics of Nd:YAG-induced pitting. Experimental studies have suggested differences in the morphology and depth of Nd:YAG-induced defects between hydrophobic and hydrophilic IOL materials [44]. Recent reports involving premium and small-aperture IOLs show that laser-induced damage may be more pronounced in lenses containing specialized optical components, such as carbon-black filter rings [50, 51]. In these lenses, incorrect focusing or laser application near the

filtering component may lead to substantial structural damage, optical disturbances, and even IOL exchange [50]. These findings suggest that both IOL material composition and optical design should be considered among the factors affecting the clinical impact of Nd:YAG-related IOL damage.

Rise in Intraocular Pressure

It is thought that the increase in intraocular pressure (IOP) following capsulotomy may also be related to procedural factors. The same author in this study (EK) also saw a greater increase in IOP in patients who underwent larger capsulotomies. The release of more capsular fragments during larger capsulotomies may be the cause of this rise [36]. Similarly, higher energy levels show association with more pronounced and longer-lasting increases in IOP [46, 52, 53]. Hence using the lowest effective energy level possible during Nd:YAG laser capsulotomy may be important for minimizing postoperative IOP elevation.

The effect of Nd:YAG laser capsulotomy on IOP control in glaucoma patients who have undergone filtration surgery is inconsistent. While Zeyen et al. did not detect any significant changes in bleb function or treatment requirements, Lin et al. reported that loss of IOP control is common following capsulotomy—though it remains unclear whether this is due to the laser effect or the natural progression of the disease [54, 55]. In contrast, Diagourtas et al. reported postoperative deterioration in bleb morphology and an accompanying increase in IOP in blebs that had previously functioned well. These patients achieved IOP regulation with the Ahmed glaucoma valve [56]. The conflicting results indicate that the current evidence remains at the level of association rather than causation; however, the morphological changes developing postoperatively, particularly in blebs that previously functioned well, suggest that the effect of Nd:YAG laser capsulotomy on filtration dynamics should not be overlooked [56].

Cystoid Macular Edema

Although Nd:YAG laser posterior capsulotomy is an effective and widely used method for treating PCO, it is associated with complications that can threaten vision, such as cystoid macular edema (CME) [6]. Post-laser inflammation and related inflammatory mediator release may contribute to the development of CME after Nd:YAG laser posterior capsulotomy [57]. Indirect evidence from Nd:YAG laser vitreolysis also suggests that inflammatory mediator release following laser treatment may be associated with CME in another ocular indication [58]. The precise mechanism of CME after Nd:YAG posterior capsulotomy remains uncertain, with vitreous-related effects and the capsulotomy opening itself proposed as possible contributors [59].

Reported incidence rates of macular edema following Nd:YAG laser capsulotomy are generally low. In Steinert et al.'s large series, this rate was 1.23% [59]. In the larger population-based French YAG2 study, however, macular edema was one of the most common complications following Nd:YAG laser treatment, with an approximate rate of 5%, particularly within the first three months [60]. In contrast, Yilmaz et al. reported no significant postoperative increase in central macular thickness during 12 months of follow-up after low-energy Nd:YAG laser capsulotomy [61]. These differences may reflect variations in patient characteristics, time elapsed since surgery, laser parameters, and follow-up methods.

Steinert et al. reported an interval between Nd:YAG capsulotomy and diagnosis of CME ranging from 3 weeks to 11 months, with a mean time to diagnosis of 4.8 months [59]. However, a recent case report documented acute CME developing as early as two days after Nd:YAG laser capsulotomy [57]. In the French YAG2 study, among patients who experienced at least one adverse event of interest 68.4% of the adverse events occurred within the first 3 months after Nd:YAG laser capsulotomy [60].

When evaluated in terms of risk factors, Nd:YAG laser capsulotomy performed within the first year following cataract surgery is reported to increase the risk of CME development [60]. The presence of diabetes is a significant risk factor for the development of macular edema [60]. Furthermore, some studies have found an association between higher total laser energy and greater postoperative macular thickening [52].

CME following Nd:YAG laser treatment is an uncommon but clinically significant complication [59]. Post-capsulotomy rates are generally low, at 1–5% in large studies [59, 60]. Therefore, awareness of patient-related risk factors and appropriate postoperative follow-up may facilitate early diagnosis in higher-risk patients, while the lowest effective laser energy remains a reasonable procedural principle. The reported complication frequencies and risk estimates across the cited studies are summarized in Table 1.

Other Complications

Several uncommon complications following Nd:YAG laser posterior capsulotomy have been described primarily in case reports, although such reports cannot establish their incidence. Gadde et al. observed a case of acute-onset neovascular

glaucoma developing within days after Nd:YAG capsulotomy in a vitrectomized diabetic eye with severe ocular and systemic ischemic comorbidities, which progressed to intractable NVG despite maximal medical and surgical treatment [62]. A large propensity-score-matched retrospective cohort study of patients with nonproliferative diabetic retinopathy found that Nd:YAG laser capsulotomy was associated with higher 1-year risks of proliferative diabetic retinopathy, vitreous hemorrhage, and tractional retinal detachment [63].

Rare complications originating from the anterior segment include iris epithelial detachment and associated hyphema [64]. Regarding intraocular lens stability, it has been reported on a case-by-case basis that intraocular lens subluxation may occur during Nd:YAG laser capsulotomy when a one-piece IOL is located in the sulcus rather than the capsular bag [65].

Effects on corneal structures are also documented. A decrease in endothelial cell density and changes in cellular morphology have been observed following Nd:YAG laser capsulotomy [66, 67]. This effect may be related to energy levels and possibly occur in the early stages [67]. Endothelial cell loss appears more pronounced in eyes with a history of penetrating keratoplasty and may place additional stress on the graft endothelium [68]. When considering all these findings together, it becomes clear that while Nd:YAG laser capsulotomy is generally a safe procedure, rare but potentially serious complications may occur, particularly in high-risk patient groups.

This narrative review summarizes current evidence on the indications, techniques, outcomes, and complications of Nd:YAG laser capsulotomy and highlights several important areas of clinical variability. However, the available literature remains heterogeneous in terms of study design, patient selection, laser settings, follow-up protocols, and reported outcome measures, limiting the ability to establish standardized clinical recommendations. In addition, many available studies are retrospective and primarily focused on visual acuity outcomes, while parameters related to visual quality and patient-reported outcomes remain insufficiently investigated. Future prospective and standardized studies are needed to better define optimal treatment timing, procedural protocols, postoperative follow-up strategies, and patient-related risk factors associated with complications and visual outcomes.

Table 1. Reported complications following Nd:YAG laser posterior capsulotomy and selected frequency or risk estimates across studies

Complication	Study type	Reported rate (%) / risk	Follow-up duration	Remarks
Retinal tear [26]	Retrospective cohort study	0.2%	90 days	Risk highest during the early postoperative period
Retinal detachment [26]	Retrospective cohort study	0.60% at 90 days; 1.39% cumulative risk at 12 months	90 days and 12 months	Increased risk concentrated within the first 5 months
Retinal detachment [27]	Meta-analysis	1.57-fold increased risk	Variable	Moderate heterogeneity reported
Cystoid macular edema [60]	Nationwide cohort study	Approximately 5%	3 months	Among the most common early postoperative complications
Cystoid macular edema [59]	Retrospective study	1.23%	Variable	Mean time to diagnosis: approximately 4.8 months
IOL pitting [46]	Prospective study	7.8%	Mean 22.9 ± 4.5 months	Silicone IOLs showed greater susceptibility to laser-induced damage
Iritis/Uveitis [39]	Retrospective study	10% (day 1), 8% (week 1)	1 week	Estimates based on a limited sample size
Clinically significant iritis [40]	Retrospective study	<1%	6 months	Rare cases required medical treatment
Neovascular glaucoma [62]	Case report	Not estimable from a case report	Early postoperative period	Occurred in a high-risk vitrectomized diabetic eye
IOL subluxation [65]	Case report	Not estimable from a case report	Intraoperative /postoperative	Associated with sulcus-placed one-piece IOL

CONCLUSIONS

Given the advancements in cataract surgery and intraocular lens technologies, approaches aimed at reducing or preventing the development of PCO may come to the forefront in the future. New-generation lens designs, surface properties, and biotechnological solutions have the potential to reduce the need for Nd:YAG capsulotomy. It is therefore believed that future research should focus not only on optimizing current treatments but also on strategies aimed at preventing the disease.

ETHICAL DECLARATIONS

Ethical approval: No ethical approval was required for this narrative review. The clinical images presented in [Figure 1](#) were obtained during the patient's care by the authors, and written informed consent was obtained from the patient for publication of the clinical details and images.

Conflict of interest: None.

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