



**Posterior Capsule Opacification Observed During Cataract Surgery:  
Surgical Management and Outcomes Using Primary Posterior  
Capsulorhexis**

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**Abstract**

*Posterior Capsule Opacification (PCO) can occur intraoperatively in rare cases, particularly in advanced cataracts. This study describes a surgical approach involving primary posterior capsulorhexis (PPC) during cataract extraction, aimed at achieving immediate visual rehabilitation and avoiding delayed Nd:YAG laser capsulotomy. A total of 170 patients with mature cataracts underwent phacoemulsification with PPC between 2008 and 2015. The technique proved effective and safe, providing immediate postoperative visual improvement with minimal complications.*

**Keywords:**

*Posterior Capsule Opacification, Cataract Surgery, Primary Posterior Capsulorhexis, Phacoemulsification.*

**Introduction**

Posterior Capsule Opacification (PCO) is caused by the proliferation of residual lens epithelial cells following cataract extraction. Despite thorough cortical clean-up, a small number of cells may remain on the capsule, leading over time to fibrous or cloudy deposits that impair visual acuity. In rare cases, however, the posterior capsule may already be opacified or fibrotic before cataract surgery and becomes apparent only during phacoemulsification. Such pre-existing opacities are more common in mature cataracts and may be associated with chronic intraocular inflammation, prior ocular surgery, or trauma.

**Objective**

To evaluate the outcomes of performing a primary posterior capsulorhexis (PPC) during cataract surgery in patients with pre-existing posterior capsule opacification, aiming to improve visual outcomes and reduce dependence on Nd:YAG laser capsulotomy.

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## Methods

A prospective case series was conducted between 2008 and 2015 at the Eye Teaching Hospital. Patients with advanced (mature) cataracts underwent phacoemulsification with the described PPC technique. After lens removal, the posterior capsule was filled with viscoelastic to create positive pressure and prevent vitreous prolapse. A posterior capsulorhexis approximately 2 mm smaller than the anterior capsulorhexis was created. In cases of vitreous prolapse, an anterior vitrectomy was performed, followed by intraocular lens (IOL) implantation in the bag. Miocol was injected to constrict the pupil, and viscoelastic was aspirated before sealing the incisions. Demographic data and perioperative outcomes were recorded and analyzed.

## Results

A total of 170 patients (98 males and 72 females) with a mean age of 68 years (range: 65–70 years) were included. Postoperative outcomes showed immediate visual improvement in all patients.

Complications included transient intraocular pressure elevation in two cases and retinal detachment in one case. No significant intraoperative complications were observed.

## Discussion

Performing primary posterior capsulorhexis (PPC) during cataract surgery in cases with pre-existing posterior capsule opacification provides several advantages. It eliminates the need for delayed Nd:YAG laser capsulotomy, offers immediate visual rehabilitation, and prevents further capsule fibrosis. While the risk of vitreous prolapse exists, careful technique and viscoelastic management minimize this complication. The results of this case series align with previous reports highlighting the safety and efficacy of PPC in selected cases.

## Conclusion

Primary posterior capsulorhexis during cataract surgery is a valuable technique for patients with intraoperatively discovered posterior capsule opacification. It provides immediate improvement in vision, reduces the need for Nd:YAG laser treatment, and carries minimal risk when performed carefully.

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