



Published Articles and Clinical References

Tran, Mermoud et al.	Goniowash : a new surgical approach combined with cataract surgery to lower intraocular pressure in pseudoexfoliation syndrome	Int. Ophtalmology	2020
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This study evaluated the long-term effectiveness of "Goniowash," a surgical technique designed to lower intraocular pressure (IOP) by removing pseudoexfoliation material from the irido-corneal angle. Conducted on 122 patients (190 eyes) with pseudoexfoliation syndrome undergoing cataract surgery, the study found significant improvements in best-corrected visual acuity, with values increasing from 0.60 to 1.0 and remaining stable over 5 years. Average IOP reduced from 26.4 mmHg pre-operatively to 15.9 mmHg after one year and stabilized around this level through 5 years. Additionally, the average need for ocular hypotensive medication dropped by 75%. No severe adverse effects were reported. These results suggest that Goniowash is a safe, effective, and lasting option for managing elevated IOP in patients with pseudoexfoliation syndrome.

<https://doi.org/10.1007/s10792-020-01459-5> (Internal Reference PACR-2024_Pub002)

Tran et al.	Washout of pseudoexfoliation material combined with cataract surgery: a new surgical approach to lower intraocular pressure in pseudoexfoliation syndrome	Int. Ophtalmology	2014
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Pseudoexfoliation (PEX) material and pigmented cells in the trabecular meshwork and irido-corneal angle can obstruct aqueous humor outflow, raising intraocular pressure (IOP) and potentially causing glaucoma or ocular hypertension. This study assessed a new technique using a specialized washout procedure combined with cataract surgery to lower IOP and reduce the need for hypotensive drugs in 11 patients (13 eyes) with PEX glaucoma. Over an average follow-up of 34.4 months, visual acuity improved from 0.37 to 0.89, IOP decreased from 32.8 mmHg to 15.1 mmHg, and drug usage was reduced by 87%. No PEX recurrence or complications were noted. The technique showed promising results, but further research with a larger sample is recommended to confirm its efficacy.

<https://doi.org/10.1007/s10792-014-9934-8> (Internal Reference PACR-2024_Pub001)

Vallée et al.	Predictive biomarkers of intra-ocular pressure decrease after cataract surgery associated with trabecular washout in patients with pseudo exfoliative glaucoma	Int. Ophtalmology	2024
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This study examined potential biomarkers for intraocular pressure (IOP) reduction in patients with pseudoexfoliative (PEX) glaucoma who underwent cataract surgery with trabecular washout (Goniowash). Conducted from 2018 to 2021 with 54 eyes (35 patients), the study measured IOP, visual acuity, endothelial cell count, and corneal thickness over a 16-month follow-up. Results showed a significant IOP reduction at 1 month post-surgery and sustained throughout follow-up. Higher baseline IOP (IOPBL) was a strong predictor of IOP reduction (AUC 0.85–0.94), with thresholds of ≥ 15 mmHg correlating with high sensitivity (82.1%–96.8%) and specificity (75.0%–84.2%). Patients with above-average baseline IOP showed a reliable and lasting postoperative decrease in IOP.

<https://doi.org/10.1038/s41598-024-53893-5> (Internal Reference PACR-2024_Pub003)

Burgmüller et al.	Assessment of long-term intraocular lens (IOL) decentration and tilt in eyes with pseudoexfoliation syndrome (PES) following cataract surgery	Arch. For Clinical and Experimental Ophtalmology	2018
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This study assessed long-term intraocular lens (IOL) decentration and tilt in patients with pseudoexfoliation syndrome (PES) after cataract surgery, using Visante OCT and iTrace. It included 64 eyes, with 34 having PES and 30 as controls, followed for an average of 69 months post-surgery. Results showed that PES eyes had significantly higher horizontal coma and greater horizontal and vertical tilt than controls ($p=0.037$, $p=0.035$, and $p=0.039$, respectively). In PES patients, IOL tilt correlated with capsulorhexis size ($p=0.011$), indicating a forward tilt of the IOL's superior edge. The study concludes that PES patients are at increased risk for long-term IOL tilt and decentration, potentially impacting visual quality.

<https://doi.org/10.1007/s00417-018-4132-4> (Internal Reference PACR-2024_Pub004)

Kristianslund et al.	Does cataract surgery reduce the long-term risk of glaucoma in eyes with pseudoexfoliation syndrome?	Acta. Ophtalmologica	2016
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This study evaluated long-term glaucoma development and intraocular pressure (IOP) changes after cataract surgery in patients with and without pseudoexfoliation syndrome (PEX). Fifty-one PEX patients were compared with 102 controls approximately 76 months after surgery. Only one new glaucoma case developed in each group, with low incidences: 0.47 per 100 person-years in the PEX group and 0.17 in controls, showing no significant difference ($p=0.53$). IOP decreased significantly in both groups, with no significant difference in IOP reduction between them. A postoperative IOP spike (≥ 6 mmHg) was associated with increased glaucoma risk in both groups. The findings suggest cataract surgery particularly benefits PEX patients, reducing IOP and glaucoma risk over time
<https://doi.org/10.1111/aos.12945> (Internal Reference PACR-2024_Pub005)

Dinslage et al..	Combined phacoemulsification with trabecular aspiration in pseudoexfoliation glaucoma with different initial pressures - a retrospective study	Klinische Studie	2011
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This study assessed the IOP-lowering effects of combined cataract surgery and trabecular aspiration in eyes with pseudoexfoliation. The retrospective analysis involved 104 patients, defining success as a $\geq 20\%$ IOP reduction, an absolute IOP ≤ 20 mmHg, stable or reduced medication, and no need for additional pressure-lowering surgery. After one and two years, the success rates were 68% and 64%, respectively. In eyes with uncontrolled preoperative IOP (> 20 mmHg), IOP significantly decreased from 25.4 to 17.0 mmHg after two years. For eyes with controlled preoperative IOP, the pressure reduction was smaller (from 17.1 to 15.9 mmHg) but involved a significant decrease in medication. The study concludes that this combined approach is effective for reducing medications and stabilizing IOP, especially in eyes with IOP in the low twenties
<http://dx.doi.org/10.1055/s-0031-1282014> (Internal Reference PACR-2024_Pub006)

Rodriguez-Una et al..	Early Lensectomy in Patients With Pseudoexfoliation: Long-Term Effectiveness and Safety Outcomes	J Glaucoma	2023
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This study evaluated the long-term effectiveness and safety of early cataract surgery (lensectomy) in patients with asymmetric pseudoexfoliation syndrome (PXF). The retrospective study involved PXF patients who received phacoemulsification with intraocular lens implantation in both eyes, with at least 5 years of follow-up. Patients were divided into symmetric ($n=102$) and asymmetric ($n=59$) PXF groups. After surgery, both groups showed good visual acuity, with 95–96% of eyes achieving within ± 1.00 D of refractive target. Over an 8.5-year follow-up, intraocular pressure (IOP) decreased in the asymmetric group ($p=0.004$) with fewer medications needed in both groups ($p<0.001$). The symmetric group showed more visual field loss and higher complication rates, including intraoperative complications (3.4%) and late intraocular lens dislocations (4.9%). The study concludes that early cataract surgery in asymmetric PXF patients offers safe, effective, and predictable long-term outcomes
<https://doi.org/10.1097/IJG.0000000000002158> ((Internal Reference PACR-2024_Pub007)