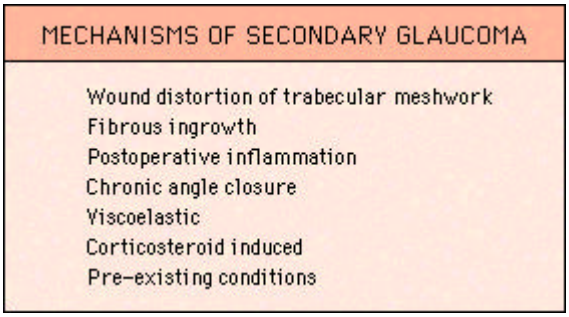
Glaucoma post PK

- Secondary glaucoma is a common complication of PK
- occurs with increased frequency in aphakic and pseudophakic patients, and in those who have repeat grafts.



- Pre-existing conditions, wound distortion of the trabecular meshwork, and chronic angle closure are the most common causes of long-standing glaucoma in these patients.
- PK 1-year survival rate is 80-90%
- Postkeratoplasty glaucoma occurs more frequently in patients affected by pre-existing glaucoma.
- Aphakic and pseudophakic bullous keratopathy are the most common indications for penetrating keratoplasty, at rates of 20-70% and 18-53
- One study indicated no early or late glaucoma in patients who had PK for keratoconus, and <2% incidence in patients who had Fuchs' corneal endothelial dystrophy treated using PK
- The leading cause of enucleation in PK patients is secondary glaucoma, at 46%
- The most common mechanisms for glaucoma after PK are distortion of the trabecular meshwork secondary to graft-wound closure and angle closure.
- Incidences of clinical glaucoma after keratoplasty for pseudophakic and aphakic bullous keratopathy are 18-53% and 20-70%, respectively.
- graft clarity is reduced significantly when postkeratoplasty glaucoma is present
- postkeratoplasty glaucoma not only affects visual function, but also graft integrity.
- In early postkeratoplasty glaucoma, epithelial edema is found along with stromal thinning and compression.
- Such findings are noted before endothelial damage occurs
- Progressive angle closure from peripheral synechial formation is a warning sign for potential glaucoma in postkeratoplasty patients.
- Some studies demonstrated that peripheral anterior synechiae are present in all eyes that showed elevated IOP after keratoplasty
- One major study in which routine gonioscopy was conducted, however, found progressive synechial closure was a plausible explanation for only 14% of eyes that had elevated IOP
- The role of corticosteroids and their influence on postoperative glaucoma must be addressed.

- The use of potent corticosteroids at frequent intervals was reported to reduce the rates of early IOP elevations
- In contrast, certain IOP elevations may be related to corticosteroid responders.
- Secondary to corticosteroid use, reported IOP rates are 5-60
- This shows the two-edged sword of corticosteroids. First, the need to use them to minimize postkeratoplasty inflammation and, second, their possible influence on postkeratoplasty glaucoma.
- medical control, trabeculectomy, seton procedures, and cyclodestructive procedures.
- The initial treatment of choice is medical therapy. However, in the presence of significant synechial closure, drugs that influence outflow facility (i.e. miotics) may have limited action.
- Similarly, the future role of latanoprost in this type of glaucoma and its influence on graft survival and graft clarity is uncertain.
- Dorzolamide has been shown to decrease corneal endothelial function and increase corneal thickness, and reported causes of graft failure have been attributed to its use.
- The setons (i.e. Ahmed, Krupin, Molteno, Baerveldt, Schocket) have been found useful in the control of IOP of patients who have had difficult previous surgeries
- 29% of patients progressed to failure after Molteno implantation, and 20% after insertion of Schocket's tube
- The reason for these failure rates is unknown, but some investigators speculate that the cause may be chronic inflammation or a breakdown in the blood-ocular barrier.
- The valved implants cause less inflammation and may be better tolerated.
- Filtration surgery shows success rates of 27-80%
- Aphakic eyes have a lower success rate than pseudophakic or phakic eyes.
- Graft failure at 3 years after trabeculectomy is in the range 11-20%
- Cyclodestructive procedures have proved to lower IOP effectively after penetrating keratoplasty.
- The use of cyclocryotherapy shows a success rate in the range 38-100%
- Numerous side effects occur with cyclocryotherapy and present a risk to both graft survival and the eye itself.
- Laser cycloablation shows less danger to the eye and visual acuity, with the benefits of a lower IOP, and success rates in the range 50-100% have been reported.
- Graft failure has been reported with laser cyclophotoablation