

Intra-operative considerations

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Financial Disclosures

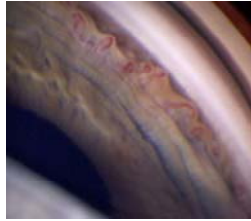
- Research Grants: Allergan, Glaukos, Olleyes, Santen, Nicox, Equinox
- Consultant: Allergan, Glaukos, Quidel





Prevention: The View Is Everything

- Avoid limbal blood vessels
- Safe entry practices
 - Don't go where you can't see
- High magnification
- Avoid visible vessels in the angle
- Bias maneuvers towards anterior TM
 - Remember that pigmented TM is posterior
- Reverse Trendelenberg
 - Especially in patients on blood thinners, OSA, obese

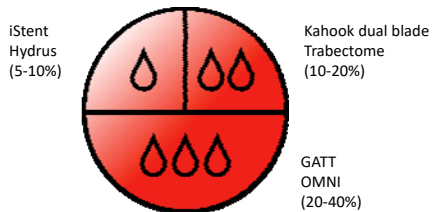


Intra-operative Hemorrhage

- Most common complication
- Complicates procedure
- Significant visual disturbance to patients
- Sometimes associated with IOP spikes
- Mechanisms
 - Backflow from downstream aqueous outflow pathway
 - Damage to highly vascular uveal tissue
 - Peripheral iris – Anterior synechiae, iris processes, circumferential vessels
 - Ciliary body
 - Damage to intrinsic vessels in TM (rare)



- The risk and extent of hemorrhage is proportional to amount of meshwork being incised



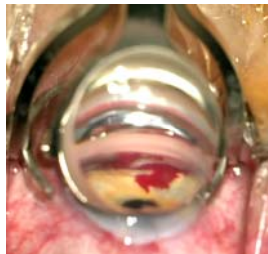
Mitigating Maneuvers: Pressurize & Elevate

- Same principles for skin wounds
- Maintain an elevated intracameral pressure
 - Fill AC with viscoelastic or air
 - Wait...
 - Pre-hydrate wounds to minimize hypotony
- Irrigation may wash away clotting factors
- Keep head of bed elevated
- Consider leaving a small amount of viscoelastic in the eye



Cyclodialysis Clefts

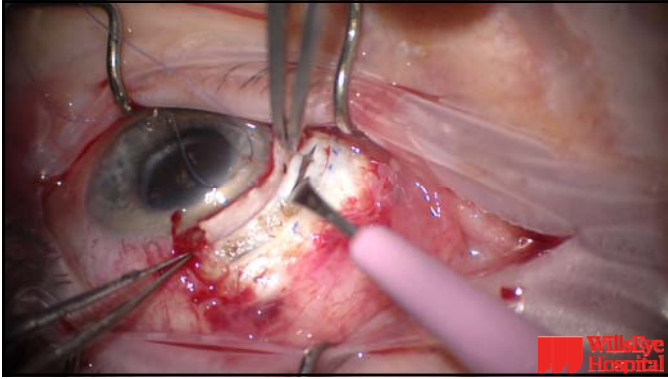
- Increasing incidence with the advent of MIGS
- Maximally unhappy patients
- Be careful in patients with pale trabecular meshwork
 - Pre-operative evaluation
 - Consider staining with vision blue
- Tell tale signs
 - Patient feels pain
 - Often accompanied by bleeding
 - Angle appears deeper

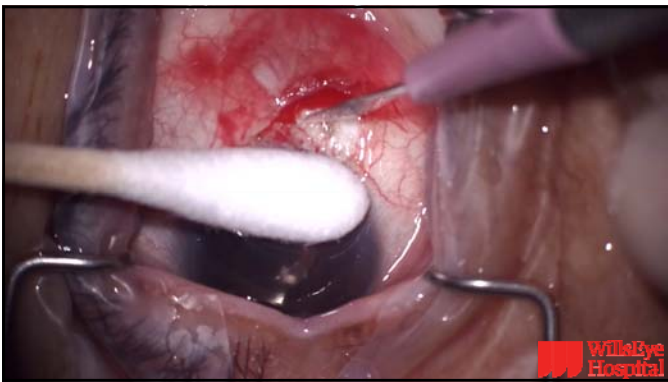


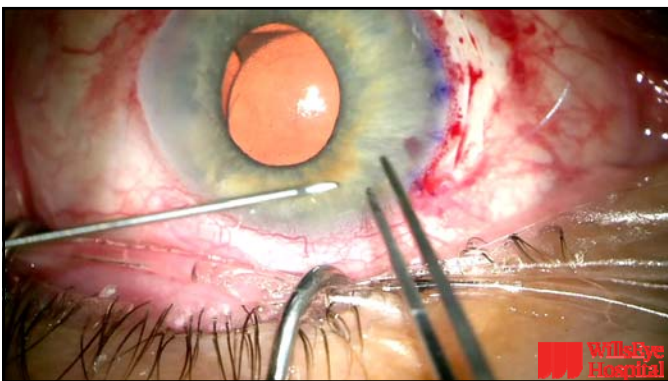
Surgical Management of Clefts

- Management may depend on extent of damage
- Small clefts (<1 clock hour) often can close with medical management alone
- Larger clefts usually need surgical intervention
- Early intervention is preferable in glaucoma patients
 - Delayed cleft closures are often accompanied by severe IOP spikes



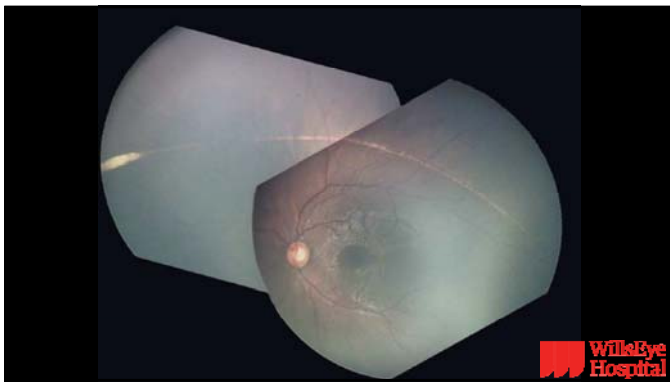


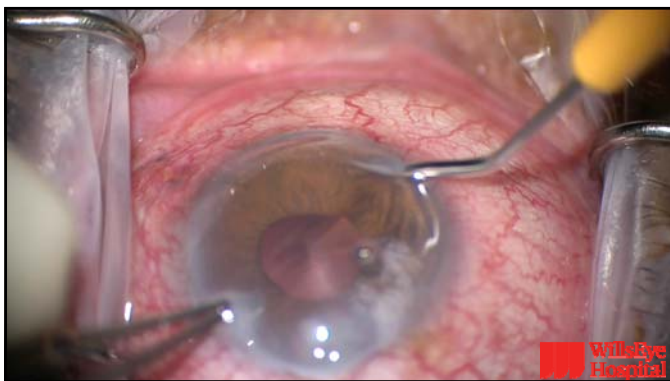




Trouble Shooting the Schlemm's Canal







Stent Troubles: iStent Inject

- Maintain focus on the trocar
- Perpendicular insertion and removal
 - Reduces likelihood of pulling out implanted stent
- Repositioning a stent
 - Option 1: Use injector sleeve to push back into TM
 - Option 2: Recannulate stent with trocar and inject elsewhere





Stent Troubles: iStent Inject

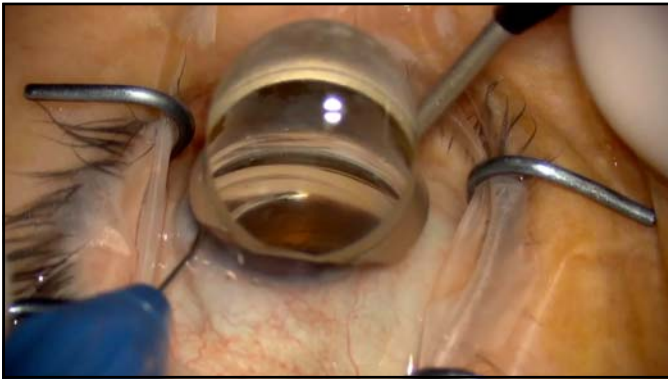
- Over-implantation is less of an issue with "W"
- Wider flange should be taken into consideration
 - Stents tend to extend close to the ciliary body
 - Place trocar in anterior aspect of PTM
- Implantation into ciliary body
 - Best to leave alone unless easily accessible
 - Attempts to retrieve may cause bleeding and clefts



Stent Troubles: Hydrus

- Entry of device through a separate paracentesis
- Device encounters blockage or enters suprachoroidal space
 - Adjust the angle– Flat approach or anterior angled approach
 - Implant stent from superior approach
 - Use of non-dominant hand to go in opposite direction





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