GLAUCOMA DRAINAGE DEVICE IMPLANTATION TECHNIQUE

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No Financial Disclosures
Steps in procedure

- Wound opening
- Plate priming and inspection
- Suturing
- Tube in the eye
- Flap Raising
- Closure
Wound Opening

- Conjunctival peritomy at least 90°
- More if using Baerveldt to sling muscles, less w/ Ahmed.
- Wide excision compulsory
- Open at least a quadrant
- Ensure haemostasis and conjunctival integrity (no buttonholes)
Plate Priming

- Look at plate for defects
- Inject fluid into tube and ensure it exits the plate end. (Spray your assistant)
- Insert the rycroft cannula well into the tube and hold it with a blunt forceps firmly. Inject BSS forcefully to see fluid going down the tube.
Suturing Plate to Globe

- Recommend a non absorbable 8.0 nylon on a non cutting needle
- Suture must pickup enough sclera to be secure without perforating.
- Distance behind the limbus is critical.
- Suture point not more than 10 mm and not less than 8.5 mm from the limbus.
Tube in the Eye 1

- Site of entry is crucial: Where?
- Far from the cornea but not such the iris will occlude tube mouth.
- If tube is bevelled forwards then mild iris contact is not an issue.
- Cut the tube outside the eye 1mm shorter than actual desired length as shorter radius of curvature will make tube longer.
Tube in the Eye 2

- The tube enters just at base of and in front of iris root.
- Angle of 23 gauge needle is critical. Point at pupil and not posteriorly or anteriorly but parallel to the iris plane.
- Keep entry wound tight and resist enlarging it. Insert tube with two handled technique. Keep tube straight to encourage entry.
Push the tube all the way in with eye looking straight.

Check position of tube and sweep any hooked iris off.

Suture tube to eye w/ 10.0 nylon X 3 sutures far enough apart to avoid swivelling of tube. Tube ligation if needle is with an 8.0 vicryl.
Flap Raising

- Additional material or half thickness flap?
- Depends on the bed status. Thinned bed or tissue defect needs material. Eg. Previous surgery or trauma, scleral melt previous MMC use, high myopia.
Ligature suture

- Objective: Strangulate tube to hourglass shape to decrease outflow early post op.
- Absorbable 8-0 vicryl. Position where you can do laser suture lysis easily.
- Alternatively use a rip cord to pull out when needed.
- Useful in cases where low IOP post op is an issue: aphakia, rubeosis, choroidal effusion.
Tube Side Slits

- Sherwood Slits
- Allow outflow alongside tube when ligatured. This prevents too high an IOP post op.
- Used mainly in Baerveldt and Molteno but not necessary in Ahmeds where there is a valve.
Closure

- Place flap on the eye and ensure that flap edges are in contact with scleral bed.
- Suture closure in 1 or 2 layers with 10-0 nylon. Conjunctivae should not be too taut or retraction may tear conjunctiva at the limbus.
- If needed, do a relieving conjunctival incision to decrease tension. Tissue glue may help in conjunctival closure.
Thank You!