Implantation of an-vision an-GlauDrain



Stefan Kindler, Dr. med. vet
FTA Surgery, ZB & WBE Ophthalmology
Adj Prof. Ophthalmology
Small Animal Clinic, Justus Liebig-University Giessen
AniCura Specialty Veterinary Center

Tel: +49-611-1885815
Fax: +49-611-1885814
mail: drkindler@tierarztpraxis-kindler.de

Recommended Instrumentation:

- Lid speculum
- Colibri forceps
- Stevens tenotomy scissors
- Westcott scissors (optional)
- Wet-field or high temperature cautery
- Blunt-tipped 27 G cannula
- Microsurgical needle holder for 8/0 suture
- Small needle holder for 6/0 suture
- Tying forceps
- Vannas capsulotomy scissors

- Adhesive ophthalmic surgical drape
- Absorbent sticks and/or spears
- 22 G cannula
- 8/0 monofilament non-resorbable suture with spatula needle
- 6/0 PGA

- BSS with epinephrin and heparin added
- epinephrine
- TPA
- Mitomycin C (0.2%)
- Triamcinolone (preservative free)
- OVD (optional)
- Intracameral antibiotic (e.g. cefoxurim - optional)

Scan to view an-GlauDrain implantation presentation - with videos -



Location of Implant:
I prefer dorso-temporal quadrant for ease of implantation, other quadrants are possible. Other surgeons report good results for implantation in ventro-nasal quadrant.

Lasercycloablation (TSCP, ECP):
If indicated, should be performed prior to shunt implantation. I will often place only a gonioimplant at the first surgery and do photocycloablation + gonioimplantation if a second procedure is necessary. This results in less trauma and – in my hands –less fibrin and scar tissue formation.

Tying off / stenting the tube: in my hands after many years of implanting both valved and non-valved implants, this is rarely – if ever – necessary (except in Baerveldt shunts). I have never seen post operative hypotension unless tube implantation takes too long, allowing too much aqueous humor to egress.

Procedure:

- Surgical preparation of eye including disinfection and draping; do not clip hair!
- Thoroughly irrigate ocular surface including cul de sac
- Apply 1-2 drops of epinephrine to ocular surface / conjunctiva to blanch blood vessels
- Incision of conjunctiva and tenon 5-8 mm from limbus, parallel to limbus, 7-10 mm
- Blunt dissection on sclera posteriorly at least to equator, creating a pocket for gonioimplant
- If hemorrhage occurs, use epinephrine and/or careful cautery
- Insert implant into pocket, folding if necessary, to control depth and width of pocket.
- Remove implant, insert spear / stick previously soaked with mitomycin C (MMC)
  - alternatively: prior to incision subtenon injection of MMC to create a bleb
- Insert blunt cannula into end of tube, flush tube with BSS towards plate to ensure patency (priming), then fill tube with TPA
- After 5 minutes, remove MMC soaked sponge and irrigate thoroughly.
- 2 8/0 monofilament non-resorbable sutures can be preplaced in the implant at this time.
- Place implant into pocket as far caudally as possible, avoiding placement on top of extraocular muscles. Aim for post equatorial placement.
- Suture implant to sclera with 2 8/0 monofilament non-resorbable non-penetrating sutures, if possible using the holes in the anterior part of the implant.
- Place tube on cornea to estimate required length, tube should protrude into anterior chamber 3-4 mm when in situ.
- Shorten tube to required length, creating a bevel using Westcott or Vannas scissors.
- Use a 22 G cannula on a syringe filled with TPA to tunnel through the sclera into the anterior chamber through the iridocorneal angle, avoiding the iris and the cornea, beginning approx. 2-3 mm posterior to the limbus.
- Inject 0.3 ml TPA and 0.3 ml triamcinolone, slowly withdraw cannula (if possible have assistant do this)
- Optionally inject intracameral antibiotic (in cases of prolonged surgery times) and/or small amount of OVD (smoother and easier tube insertion) while slowly withdrawing the cannula (if possible have assistant do this)
- Grab tip of tube with tying forceps and insert into created opening.
- Tube can be gently sutured to sclera, tying off is not necessary
- Suture conjunctiva and tenon (!) 1 or 2 layer continuous 6/0 PGA suture.

Post-operative treatment

Topical carboanhydrase inhibitor +/- beta blocker bid
Topical combination antibiotic / steroid tid
Systemic nonsteroidal
Systemic antibiotic (optional)
Elizabethan collar or optivizor