

Enucleation

It is important to note that manipulation of the globe can result in an oculocardiac reflex. The oculocardiac reflex is a reflex resulting in severe bradycardia caused by traction applied to the extraocular muscles or pressure on the globe.

One should be careful not to put too much traction on the globe to prevent this reflex and potential blinding of the fellow eye. A stethoscope should be used to assess the heart rate of the animal throughout the enucleation procedure; If the heart rate reaches 30 beats per minute or lower, emergency atropine should be administered to increase the heart rate.

Transconjunctival/ Subconjunctival Enucleation

Advantages:

- The subconjunctival approach results in less postoperative discomfort because fewer tissue planes are traversed.

Step 1:

Subconjunctival enucleation is initiated by placement of an eyelid speculum or sutures to hold the eyelids open for the procedure. A minor lateral canthotomy is performed to allow better access. (The lateral canthus is crushed with hemostats for 0.5–1 min, and the skin and conjunctivae are cut with a blade or surgical scissors.)

The bulbar conjunctiva is infiltrated with 2% lidocaine. The conjunctiva is then grasped and an incision 360 degrees around the globe, approximately 5 mm caudal to the limbus is performed using Steven's tenotomy scissors. (A complete peritomy is performed.)

Step 2:

The extraocular muscles are identified and isolated with a strabismus (muscle) hook. The muscles are incised near or at their attachment to the sclera, permitting free rotation of the globe. The retractor bulbi muscles attach more posteriorly, and are more difficult to visualize. They are incised somewhat blindly.

A curved or angled hemostat is used to crush the optic nerve and associated vessels.

The globe is removed and may be submitted for histologic examination.

Step 3:

After the globe is removed, the eyelid margins, nictitating membrane, gland of the third eyelid and any remaining conjunctivae are removed.

The remaining orbital contents should be examined to ensure that all diseased tissue has been removed. The orbit should be flushed with dilute povidone–iodine. The orbital space may be packed with sterile gauze sponges. Infusion of antibiotic solution should be considered if the

orbit was contaminated during the procedure. A surgical drain (Penrose) through the ventral orbit should also be considered in a contaminated surgical site.

Routine Closure is then performed.

Simple continuous suture along the length of the defect is done. Midway through the suturing, the sterile gauze sponges are removed. Finally, if there are gaps between the suture made, simple interrupted sutures can be used to close them.

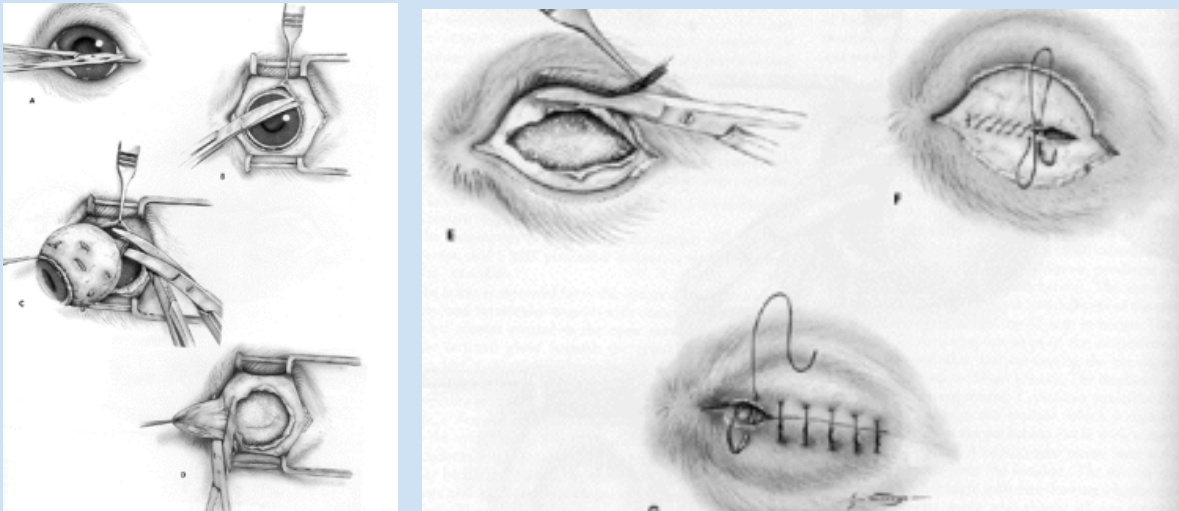


Image 1 and 2: Subconjunctival Enucleation

Transpalpebral enucleation

After the eye and periorcular tissue are prepared for aseptic surgery, the eyelids are sutured tightly with 2-0 or 3-0 nylon, in a Ford interlocking or simple continuous pattern, leaving the suture ends long. Large hemostats or Allis tissue forceps can be placed on the sutures at each end of the eyelid fissure to provide identification and traction during the procedure.

Step 1:

A full-thickness skin incision is made 6–8 mm from the eyelid margins. Tissue planes are then bluntly dissected to separate the skin from the tarsal layer. The separation is extended to the periorbital margin with caution to prevent perforating the tarsal layer and contaminating the orbit.

The medial canthal ligament and lateral canthal attachments are cut with a surgical blade. Additional dissection will separate the globe from the orbital connective tissue. Extraocular muscles are dissected and excised.

Step 2:

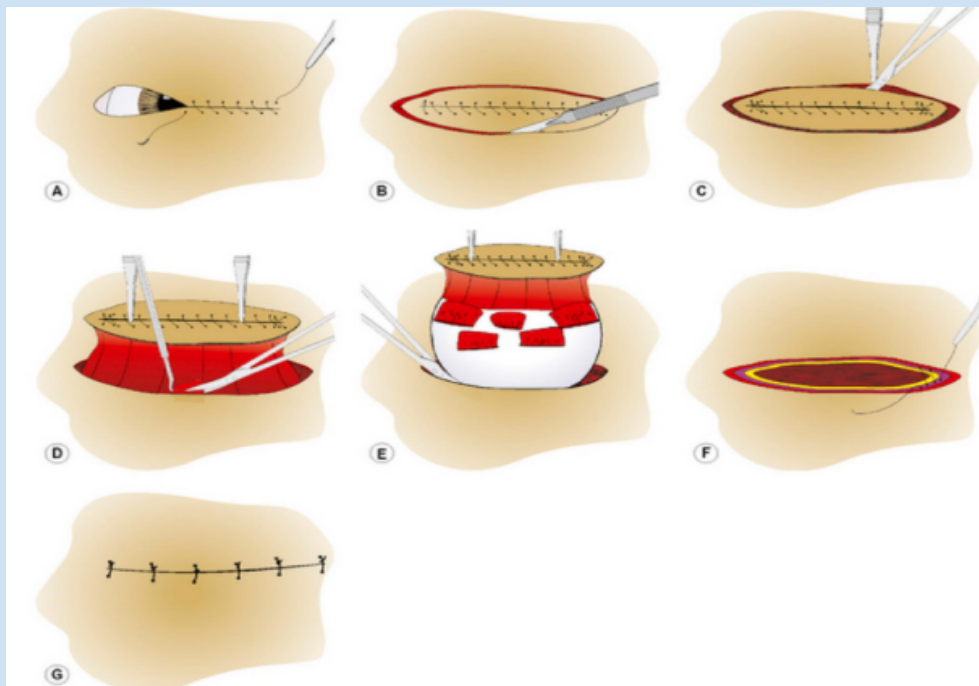
The optic nerve or optic cone is clamped with curved forceps or Carmalt forceps. A ligature may be placed around the optic cone and tightened if desired. The optic nerve is resected anterior to the clamp or about 0.5–2 cm from the globe.

Step 3:

The orbit should be packed for 5 minutes and bleeding blood vessels should be ligated. (An orbital prosthesis can be placed in some animals e.g. horses.) Palpate the remaining orbital tissue and orbital bone for additional evidence of neoplasia.

Closure:

- 1) First the subcutaneous tissue is closed using 2-0 absorbable suture and a simple continuous suture pattern.
- 2) Secondly, the skin is closed using 0 non-absorbable suture and an interrupted horizontal mattress suture pattern.



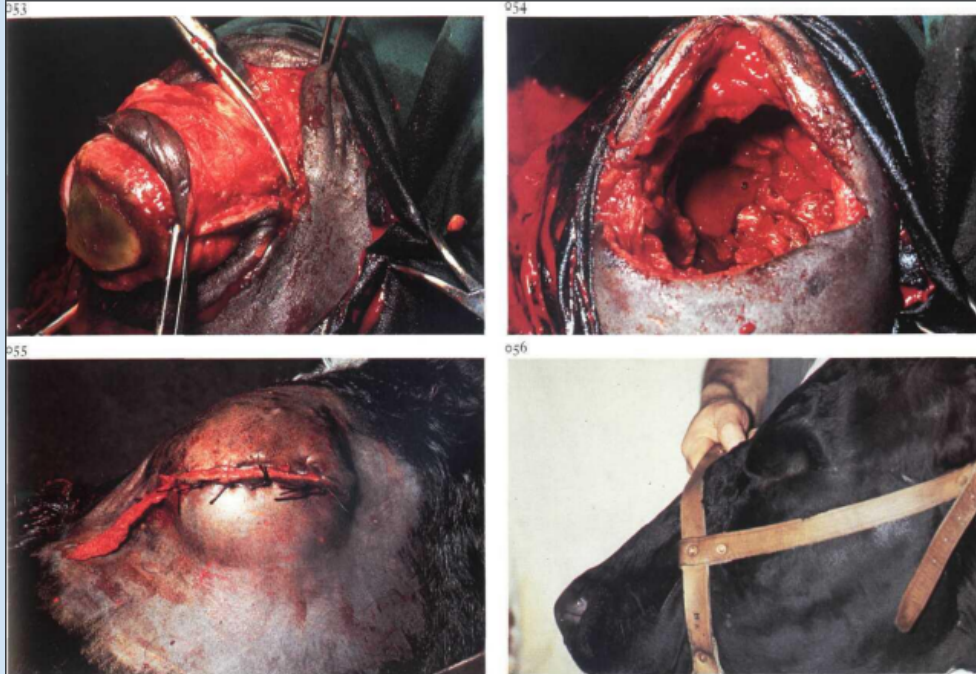


Image 3 and 4: Transpalpebral Enucleation

Transpalpebral enucleation in the dog: <https://www.youtube.com/watch?v=-Cgh9IPHxkM>
(similar technique used)