Hotz Celsus

The Hotz–Celsus or Celsus–Hotz procedure and its modifications are the basic surgical techniques for the treatment of congenital, developmental, cicatricial, and senile entropion in animals. The technique can be used to correct entropion of the entire lower lid, the upper eyelid, and, with modification, the lateral canthus.

Step 1:
Clip lashes and periocular hair for about 2-3 cm around the eyelid margin. For central lower entropion defects, a crescent-shaped or elliptical area of skin and orbicularis oculi muscle is excised.

- To determine the amount of skin and orbicularis oculi muscle to be removed an ocular examination is performed before administering any sedatives or anesthetics to the animal. The eyelid is examined to witness the entropion. Following this, a blink response or palpebral reflex is induced and the eyelid is then re-examined.
- After the examiner is satisfied with this assessment, topical anesthetic (0.5% proparacaine) is applied to the cornea. This allows the eyelid to be re-examined without the blepharospastic component.
- This assessment allows the surgeon to visualize and measure the amount of skin and orbicularis oculi muscle to be removed in order to evert the eyelid margin. The animal is then anesthetized and the surgical site prepared for aseptic surgery (preoperative procedure).

The initial skin incision is parallel to the eyelid margin, usually 2 to 3 mm from the lid margin and where the pigmentation of the skin ceases and the eyelid hair begins. The incisions are done using a #15 blade.

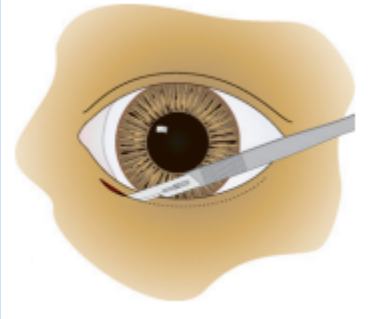

Image 1: First part of the incision

The length and shape of the skin–orbicularis oculi incisions vary, depending on the amount and area of entropion correction. However, the incision should extend approximately 1-2 mm beyond the entropic area.The lid may be held by an entropion clamp or held taut and the eye protected by a Jaeger eyelid plate.

Step 2:
The ends of the initial skin–orbicularis oculi incision are joined with a ventral elliptical incision, the width determined by the amount of tissue that needs to be excised to evert the eyelid margin into a normal position.

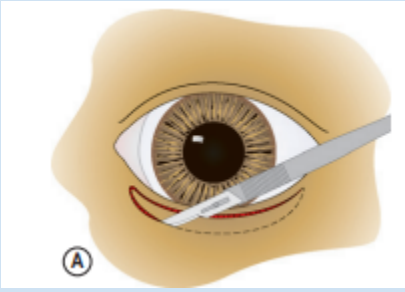

Image 2: Second part of the incision

Modification: If the lower entropion involves the medial and lateral one-third of the lid, but not the central section, two separate Hotz-Celsus procedures are performed.

- To stabilize the eyelid during these incisions, a thumb forceps may also be inserted at the lateral canthus to provide tension on the lids.
- The area of skin may also be outlined and slightly crushed by curved mosquito forceps. This technique is more traumatic, but provides some hemostasis.
- Hemorrhage is usually minor and occurs from the lateral and medial ends of the incisions. Temporary clamping of the larger blood vessels by hemostats or digital pressure is usually sufficient.

Step 3:
The incised area of eyelid skin and orbicularis oculi muscle is elevated by thumb forceps and excised by small curved Steven’s tenotomy scissors.

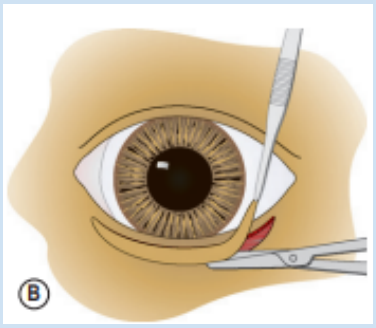

Image 3: Excision of tissue

Step 4:
The surgical wound is apposed with 4-0 to 6-0 simple interrupted non-absorbable (monofilament nylon) sutures placed about 2–3 mm apart. Placement of the sutures must accommodate the shorter eyelid margin wound and the longer distal incision. Suture placement starting from the central defect and working in each direction is recommended. After this, the surgeon must examine the sutured wound to ensure that there are no gaps left. If there are gaps, simple interrupted sutures can be placed to close them.

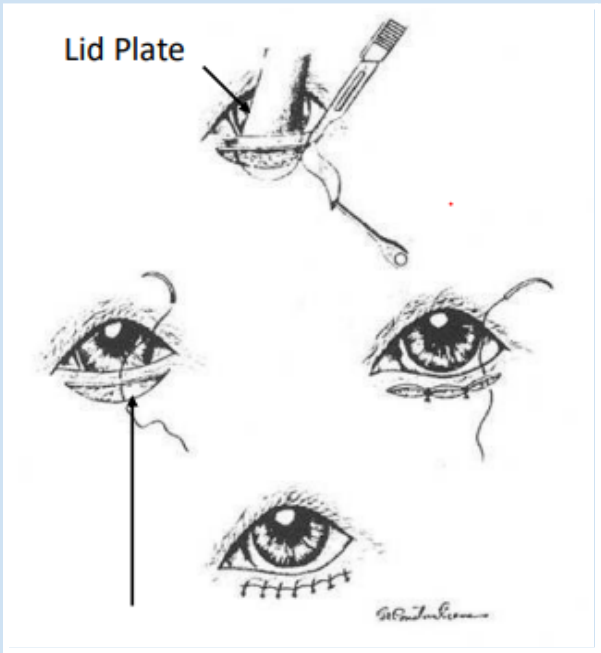

Image 4: Arrow indicating that the suture begins in the center and is worked outward

Hotz Celsus: https://www.youtube.com/watch?v=qaeWCtg1hzc