Key Points:

- Most failures/complications associated with surgery of the eyelids are the result of poor suture selection and poor suture placement. Correct suture selection and placement will ensure a favorable outcome and prevent self-trauma.
- Magnification is essential to accurately repair and re-position adnexal tissue.
- Pre-operative NSAID’s will improve post-operative comfort and outcome.
- Following adnexal surgery, warm, moist compress of the sutures, keeping them free of debris will greatly improve outcome.
- The eyelids have only one purpose, to serve the cornea.

The majority of abnormalities associated with canine eyelid position begin with a problem of length, specifically macroblepharon. Failure to address the issue of length when correcting entropion, ectropion or their combination will often result in a less than satisfactory result and possible failure. As a surgeon, I have never surgically corrected abnormalities of eyelid position without first measuring and correcting the associated problem of macroblepharon. In general, most canine eyelids can be shortened to 24-26 mm using the technique of lateral canthoplasty and then the residual eyelid corrected for position. Remember, the eyelids are there to serve and protect the cornea and the medial to lateral length of the canine cornea is approximately 16 mm regardless of breed.

Abnormalities of position will include entropion, ectropion and a combination of both. First, measure the length of the eyelids using Jameson calipers. Perform a lateral canthoplasty to shorten the eyelids to the appropriate length and then for entropion a Modified-Hotz celsus may be performed to correct the remaining in-rolling of the upper and/or lower eyelids. For simple ectropion, the lateral canthoplasty alone may be sufficient to correct mild cases. For more severe ectropion, additional wedge-resection or other techniques may be required. For entropion/trichiasis of the medial canthus, as seen in the Pug, a medial canthoplasty may be indicated. While similar to a lateral canthoplasty, care must be taken to avoid trauma to the nasolacrimal ducts.

Entropion occurs when there is an in-turning of the eyelid resulting in corneal irritation and possible ulceration. Left untreated, it may result in corneal vascularization, pigmentation and fibrosis. While most veterinarians have no difficulty recognizing and diagnosing entropion, surgical correction is often less than satisfactory.

It must be first recognized that most, if not all canine entropion is also associated with macroblepharon and a weak lateral canthus. Failure to correct these will result in a less than acceptable surgical outcome and possible the need for a repeat surgical procedure. In addition, many surgeons fail to perform a modified Hotz-Celsius procedure in the correct location, instead making their incisions too far from the eyelid margin. Finally, incorrect suture selection may be associated with irritation, blepharitis and self-trauma.

In general, the normal canine eyelid when stretched will measure 23-26mm medial to lateral in length. Prior to entropion repair, the eyelid length should be measured using a Jameson caliper and a lateral canthoplasty performed to shorten the eyelid to the correct length OU. Many entropic eyelids will measure >35mm prior to shortening. Following the lateral
canthoplasty, a modified Hotz-Celsus procedure is performed with the initial incision parallel to and 2mm from the eyelid margin. Closure of both the lateral canthoplasty and the modified Hotz-Celsus procedure is performed using 6-0 monofilament, non-absorbable suture. These techniques will address the majority of canine entropion. For more severe entropion, as seen in the Shar-Pei and Chow Chow it may be necessary to resort to more aggressive procedures such as a brow-sling or stellate rhytidectomy.

When suturing eyelids, the smallest suture indicated should be used. This is typically 6-0 to 7-0 suture. For the deep layer, an absorbable suture such as polygalactin may be used. For the skin, the author prefers a monofilament polypropylene type suture as these are less reactive and will result in less inflammation and a better outcome. Sutures should be kept clean using a warm, moist compress and an E-collar worn.

Lateral Canthoplasty  Modified Hotz-Celsus  Modified Hotz-Celsus

In addition to abnormalities of position, abnormalities of hair such as distichia, ectopic cilia and trichiasis are also common. Depending on the severity these may or may not require treatment. Of these, ectopic cilia is the most common to require treatment and is more common in certain breeds such as the Shih Tzu. Treatment should be directed at not only removing the hair, but also destroying the hair follicle. This can be done using surgical excision, cryosurgery or laser ablation.

Eyelid agenesis is seen as a congenital abnormality in the cat. It most commonly affects the superior temporal eyelid and treatment is indicated if the health of the cornea is compromised. A lip to eyelid transposition is the most effective surgical treatment.

Eyelid neoplasia in the canine is most often benign while in the cat eyelid neoplasia may be more aggressive and can undergo metastasis. The most common eyelid neoplasms in the dog include Meibomian gland adenomas, melanomas, papillomas, mast cell tumors, histiocytomas and basal cell tumors. In the cat, mast cell tumors, fibrosarcomas and squamous cell carcinomas are most common. In general, up to 1/3 of the eyelid may be removed and a primary closure performed. This is provided the lesion involves the 12 or 6 o’clock positions. If a primary closure cannot be performed a grafting procedure such as an H-plasty, rotational graft, lip-eyelid or other such procedure may be considered.

Eyelid Wedge Excision
References