When presenting a pet for a physical ailment, owners often provide vague descriptions of clinical signs and misleading theories about their causes. It is the job of veterinary professionals to help decipher the underlying problem through detailed history taking and examination so that patients can be treated appropriately.

Ocular problems are often described as “red” and “irritated” eyes. Myriad problems can present as “red eye.” Commonly missed causes of red eye are irritants that arise from the eye itself. Surprisingly, in practice, it seems that the most common causes are not external irritants or trauma, but rather abnormal hairs arising from the eyelids or periorcular region. Taking a thorough history and performing an ocular examination help determine whether the hair irritant is normal hair growth in an abnormal position or abnormal growth (misplaced hair).

NORMAL HAIR GROWTH

Sometimes, normal hairs from the eyelid tissue can evert or roll inward, irritating the cornea. This is called entropion. It can either be caused by a primary, hereditary condition or develop secondary to pain and spasticity of the eyelids. When it is a primary problem, surgical correction is needed to reposition the eyelids.

When it is a secondary problem, such as from a corneal ulcer, fixing the primary problem often corrects the spastic entropion.

Another source of irritation is trichiasis, which refers to a normal hair that is misplaced and touches the cornea or conjunctiva, causing irritation. Trichiasis can arise from any point along the eyelid or nasal fold region and is most commonly observed in brachycephalic breeds. If the irritation arises from the nasal folds, grooming may fix the issue, but nasal fold resection may be needed.

To examine for medial canthal trichiasis, position the patient to the side to enable a lateral view of the medial canthus; then locate the medial caruncle, a small raised area of conjunctival tissue where the upper and lower eyelids join deep within the medial corner of the eye. Medial canthal trichiasis often arises from hair follicles in the caruncle.

Once it is confirmed that hairs are emerging from the caruncle, treatment options can be considered. These hairs are a constant source of

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Shannon says, “I couldn’t be happier in the field I have chosen. I get to have animals as patients throughout the day, aiding in their care, and also get to come home to my personal 4-legged kids. Life in the veterinary medicine field, in my opinion, is as good as it gets.”
irritation and predispose the patient to corneal irritation and possible ulceration. For patients that are poor candidates for anesthesia or whose owners have financial concerns that preclude a surgical option, periodic epilation can relieve some or most of the irritation. It is important to educate clients that the hairs regrow and the process will need to be repeated.

For owners who want to pursue a more permanent treatment, surgical options include cryosurgery and medial canthoplasty. Cryosurgery tends to be less invasive and does not alter the pet’s conformation, but the potential for hair regrowth remains. In this procedure, which requires general anesthesia, a probe is used to freeze the region from which the hair arises, which discourages regrowth. Medial canthoplasty is a permanent fix. The caruncle in the medial canthus containing the trichiasis is surgically excised, and the inner corner of the eyelids is reformed. This procedure shortens the eyelid margins and can alter the patient’s appearance, but the irritant will be permanently removed. The choice of procedure typically depends on the client’s comfort level, and both options are adequate. Some clients prefer to start with cryosurgery; if the trichiasis regrows, medial canthoplasty can be pursued. These procedures are routinely performed by veterinary ophthalmologists.

**ABNORMAL HAIR GROWTH**

**Distichiasis**

Abnormal or aberrant hairs are often missed as a cause of ocular irritation. Distichiasis is an aberrant hair growth in which abnormal cilia (distichia) arise along the eyelid margin, originating from the meibomian glands. These glands are designed to supply the ocular surface with an oily substance that protects the surface of the eye by preventing evaporation of the tears. Hairs are not supposed to arise from these glands. FIGURE 2 shows a canine eyelid margin with distichiasis. Distichia tend to be soft, but they rub and irritate the cornea as the pet closes its eye.

Distichiasis can range from mild to severe, and certain breeds tend to have higher degrees of distichiasis. Depending on the severity, a variety of clinical signs may be noted, including hyperemia, epiphora, and/or blepharospasm. The important task is to determine the best way to treat the underlying problem. If there are only a few stray hairs, they can be epilated fairly easily, but this is not a permanent fix and the hairs typically grow back at various rates. Cryosurgery offers a more permanent...
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solution, typically for patients that have multiple distichia on more than one eyelid. There is still the chance that a few hairs may grow back, but generally not enough to cause the degree of irritation initially noted. After cryosurgery, some mild to moderate swelling is to be expected, and the potential for some eyelid depigmentation exists; both should resolve in time but can be startling to the owners at first. Veterinary technicians should therefore prepare owners for these temporary effects.

Resection of the affected area of eyelid is another procedure to treat clusters of distichia; however, because of the potential scarring and loss of functional eyelid margins, this tends not to be the preferred treatment. The decision of how to treat distichiasis varies among veterinarians but is often based on the severity of the problem.1

Ectopic Cilia
Ectopic cilia (FIGURE 3) are another type of abnormal hair growth that can cause irritation. These cilia arise from the palpebral conjunctiva, most commonly on the upper eyelid. Whereas distichia tend to brush the cornea, ectopic cilia are more perpendicular to the cornea. Ectopic cilia tend to be sharper than distichia and, because of their location and orientation, contact the cornea more directly and aggressively. As a result, ectopic cilia typically cause corneal abrasions.

To discover ectopic cilia on examination, it is important to rotate/evert the eyelid margin outward and look along the conjunctiva. Sometimes, ectopic cilia are not as obvious as distichia. The tissue around the cilium can become irritated, causing conjunctival swelling that can obscure and hide the cilium. If this is the case, ectopic cilia can be missed. If ectopic cilia are suspected, it is important to palpate the

FIGURE 2. Distichia contacting a cornea. Image courtesy of Portland Veterinary Specialists
area in question under topical anesthetic using a sterile cotton swab. Often, veterinary technicians may observe a raised red area and occasionally a small spot of pigment. Ectopic cilia are often noted in younger dogs, especially in retriever breeds, but can be seen in any breed. Surgical excision is needed to provide relief from an ectopic cilium. Some veterinarians choose to apply cryosurgery to the site after the cilia are removed, but such decisions are made on a case-by-case basis. Ectopic cilia tend to be a more hidden source of ocular irritation but should remain on the differential diagnosis until the cause of irritation is determined.

**CONCLUSION**

Determining the source of ocular irritation can be a frustrating battle, especially when dealing with abnormal hairs. It is important to conduct a thorough examination, taking into account the animal’s breed and age. The eye and its supporting structures are complex, and irritation can come from numerous sources.

**References**


**FIGURE 3.** Ectopic cilium arising from palpebral conjunctiva after eversion of eyelid. Image courtesy of Portland Veterinary Specialists