

A Common Problems Of Dog Eyes (A Review)

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Abstract: Eye problems in all animals should be addressed as a priority. Early examination by the veterinarian can save corneal scarring, pain and inflammation, vision, and even loss of the eye itself. Moreover, Canine ophthalmology research was always highlighted the main important problems of canine eyes whether they are infectious or non-infectious, However, canine eyes are an immune-privileged organ that is provided with systems to prevent and control the local immune response, which could have a detrimental impact. A dog's eyes perform a nearly miraculous function converting reflected light into nerve impulses that the brain uses to form images of the world. To do this well, all the various parts of the eye must be healthy. Unfortunately, several diseases can disrupt the way a dog's eyes function.

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I. Cherry eyes (Haws)(Prolapsed Third Eyelid Gland)

Is a common term for prolapse of the third eyelid gland. It's a Protrusion of the gland over the free edge of the nictitating membrane causing hypertrophy, hyperplasia, or adenoma and commonly termed as 'Cherry Eye(1).

Dogs have three eyelids, two that are readily visible and an extra one, called the third eyelid, that normally hides from view below the inner corner of the eye. The third eyelid is home to a tear-producing gland. Normally, this gland is also invisible, but some dogs have a congenital weakness of the ligaments that hold it in place. When these ligaments fail, the gland pops out of its normal location and looks a bit like a "cherry" stuck at the inner corner of the eye. Because this condition often has a genetic basis, both eyes are usually affected over time(2).

Prolapse of the third eyelid gland appears as a red swollen mass on the lower eyelid near the nose or muzzle. The "cherry eye" may be large and cover a significant portion of the cornea or it may be small and appear only periodically(3).



Treatment

Attach the gland back in a more normal position. The dog was pre-medicated with Atropine sulfate at 0.04mg/kg b.wt. and followed by Xylazine hydrochloride at 0.5 mg/kg b.wt. intramuscularly and later anesthetized using Ketamine hydrochloride at 5 mg/kg b.wt intravenously. The mass was completely exteriorized by applying traction to the third eyelid while maintaining traction, a small incision was made on the palpebral surface of the conjunctiva, which encircled gland. Through the incision, the gland was exteriorized and a row of hemostatic sutures was placed at its base using catgut No. 2/0. The gland was excised just above

the suture line The conjunctival incision was sutured over a nictitating membrane using silk No. 2. Post-operatively, the owner was advised to instill a combination of Gentamycin eye drops thrice daily for a week.

Canine glaucoma

Glaucoma means increase intraocular pressure which permits normal visual functions which leads to permanent retinal degeneration and blindness. Since, Within the eye, the production and drainage of fluid are precisely balanced to maintain a constant pressure. Glaucoma occurs when this balance is disrupted and pressure within the eye increases(4).

Genetics, aging, vascular, immunologic, and environmental factors all contribute to optic nerve degeneration.

Symptoms include pain, eye redness, increased tear production, a visible third eyelid, corneal cloudiness, dilated pupils, and in advanced cases, an enlarged eye(5).



Elevation of intraocular pressure (IOP), when sustained, destroys intraocular structure and function, resulting in blindness. The elevated intraocular pressure occurs mainly with developmental abnormalities or disease processes affecting the intraocular circulation and especially the drainage of aqueous humor from the eye through the irido-corneal angle(4).

Treatment.

- Medical therapy
- Surgical therapy for visual eyes
- Surgical therapy for blind eyes

Medical therapy...

Parasympathomimetic agents

Cholinergic Agents:

Carbachol - 0.75%-3%

Pilocarpine - 20, 40 inserts Pilocarpine HCl Gel - 4%; Pilocarpine HCl - 0.25%-10%

Cholinesterase Inhibitors:

Physostigmine - 0.25 & 0.5%

Demarcarium bromide - 0.25% & 0.5%

Echothiophate iodide - 0.03%, 0.06%, 0.125%, 0.25%.

Sympathomimetic agents

Dipivephrine HCl - 0.1%

Epinephrine borate - 0.5%, 1% , 2%

Epinephrine HCl 0.5%, 1%, 2%

Beta-adrenergic blocking agents

Betaxolol HCl 0.25%, 0.5%

Carteolol HCl 1%

Levobunolol HCl 0.25%, 0.5%

Metipranolol 0.3% Timolol hemihydrate 0.25%, 0.5%

Timolol maleate .25%, 0.5% Timolol maleate (long-acting)0.25%, 0.5% **Hyperosmotic agents**

Mannitol 5-20% 0.5-2g/kg IV 30-60 min/6 h

Glycerin 100% .33 cc/lb. p.o. • 1-2 h/8 h

Carbonic anhydrase inhibitors

Dichlorphenamide – 5mg/kg orally twice daily

Acetazolamide - 10mg/kg orally twice daily

Eye worm Disease (Thelaziasis) in Dogs

Thelazia callipaeda (Spirurida, Thelaziidae), eye worms, are known as the causative agents of thelaziasis, initially described in Asia and, later on, over the last decade(6). It's an arthropod-borne disease caused by a nematode that infects, at both the adult and larval stages, the eyes of domestic dogs and cats and wild carnivores and humans. In the infected animals, the presence of worms may induce different degrees of

Clinical signs, ranging from

- lacrimation
- conjunctivitis
- keratitis
- epiphora
- eyelid edema
- corneal ulcers and blindness



Treatment ..

- Ivermectine 0.2 mg/kg WB S/C or oral treatment with 0.5 mg/kg milbemycin oxime and 2.5 mg/kg afoxolaner.(7).

Canine Cataract

Its cloudy or opaque appearance of the lens (meaning an opacity of the lens or lens capsule)which block light from reaching the back of the eye resulting in poor vision or blindness, depending on their severity(8).

Cloudiness in cataractous lens scatters light as it enters the eye which initially only results in a blurry image, but may progress to cause blindness. It is very similar to a glass window that is fogged with vapor. The more of the lens is affected the worse will be the visual impairment(9).



Causes

- Traumatic
- Metabolic – diabetes, hypocalcemia
- Toxins –DMSO, DNP
- Nutritional – arginine, vitamin D3
- Secondary to inflammation –uveitis
- Idiopathic

Treatment...

Surgical correction

Keratoconjunctivitis Sicca (KCS) or Dry Eye

In this disease, the tear glands produce fewer (little) tears than normal. As tears perform important functions like removing potentially damaging material from the surface of the eye and nourishing corneal tissues. However, a lack of tears can cause big problems including corneal ulcers, chronic drainage of mucus from the eyes, and pain(10).

There are a few different causes of dry eye. The most common is a fault in the immune system that causes the body to attack and destroy the tear glands. The outlook for a dog with dry eye tends to be good if the condition is noticed early and treatment is continued for life(11).

Symptoms of dry eye include:

- Sticky eye
- Dried discharge around the eye
- Red-eye
- Cloudy eyes
- A lack of shine in the eyes
- Eye infections (that comes back quickly after treatment)
- Rubbing the face and/or eyes
- Closing the eyes or blinking more than usual



Treatment ...

- 1- Mild cases of KCS can sometimes be managed with frequent application of an artificial tear solution, but medications that stimulate tear production (e.g., cyclosporine) are usually necessary. Surgery that redirects a duct carrying saliva so that it moistens the eye surface.
- 2- Antibiotic eye drops aren't needed to treat the dry eye itself but might be needed from time to time if the dog develops an infection because of dry eye.
- 3- Eye wiping... A dog with dry eye is likely to have dried discharge around its eyes. This is irritating and provides a perfect place for bacteria to grow and infections to start. Therefore, Clean the fur around your dog's eyes using cotton wool pads soaked in warm water (at least daily). Make sure to wet the discharge and give it a chance to loosen before trying to remove it.

Conjunctivitis (Canine pink eyes)

It's an itchy inflammation of the tissue that coats the eye, conjunctivitis can affect one eye or it could spread to both. It may be acute or chronic and It may be linked up with systematic diseases(12).



Symptoms ...

- Squinting
- Sporadic blinking
- Discharge from eyes (and some time nose)
- Swelling of the eyes with Crustiness around eyes
- The eyelids sticking together
- Sneezing and /or Coughing

Causes

Bacterial and Viral infection (canine distemper), Allergies and tumors, Tear film deficiency and Obstruction of tear ducts, Eyelids abnormalities, Ocular parasites, Foreign material in eyes and Trauma

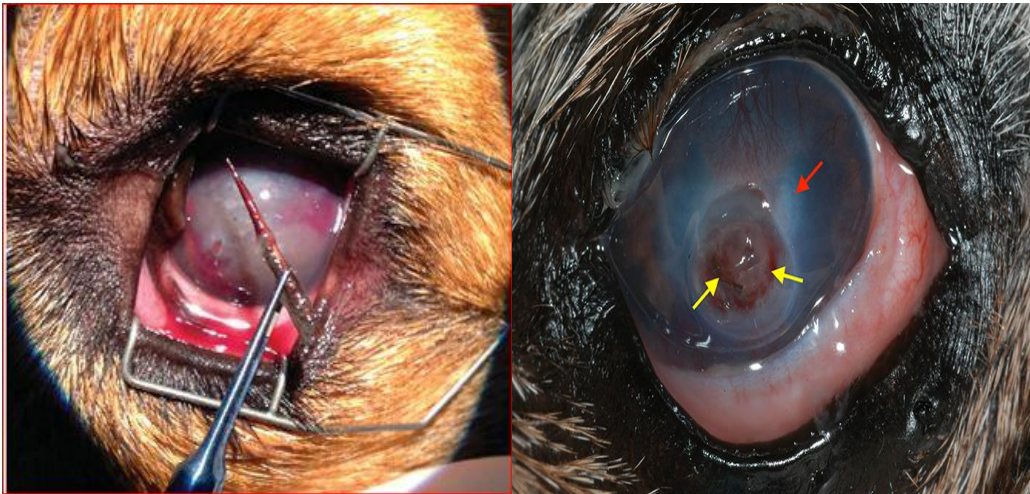
Treatment ...

Treatment depends on the underlying cause. Sterile saline eyewashes are available over the counter and can be used to flush irritants from the eye. Bacterial eye infections usually resolve quickly when treated with an appropriate prescription antibiotic eye drop or ointment. The chances of catching the pink eye from the dog are very low but it only makes sense to wash your hands thoroughly after applying the dog's eye medications. Make a veterinary appointment if the dog's conjunctivitis worsens or fails to resolve over a day or two(13).

Corneal Wounds

The surface of the eye is covered with a clear, skin-like tissue called the cornea. Just like the skin, the cornea can be injured, and lacerations (cuts), punctures, and ulcers are all quite common in dogs. Trauma is often to blame, like when a dog runs through tall grass and gets poked in the eye. In other cases, problems with the eyes themselves (like poor tear production or abnormal anatomy) can put dogs at risk for corneal damage. A dog with a corneal wound will often rub at the affected eye and squint because of pain. The eye may also be red and have excessive drainage. Treatment for corneal wounds involves preventing or treating infections with

antibiotic eye drops or ointments, managing pain, and giving the cornea time to heal. In severe cases, surgery or other treatments may be needed to protect or repair the cornea and promote healing(14).

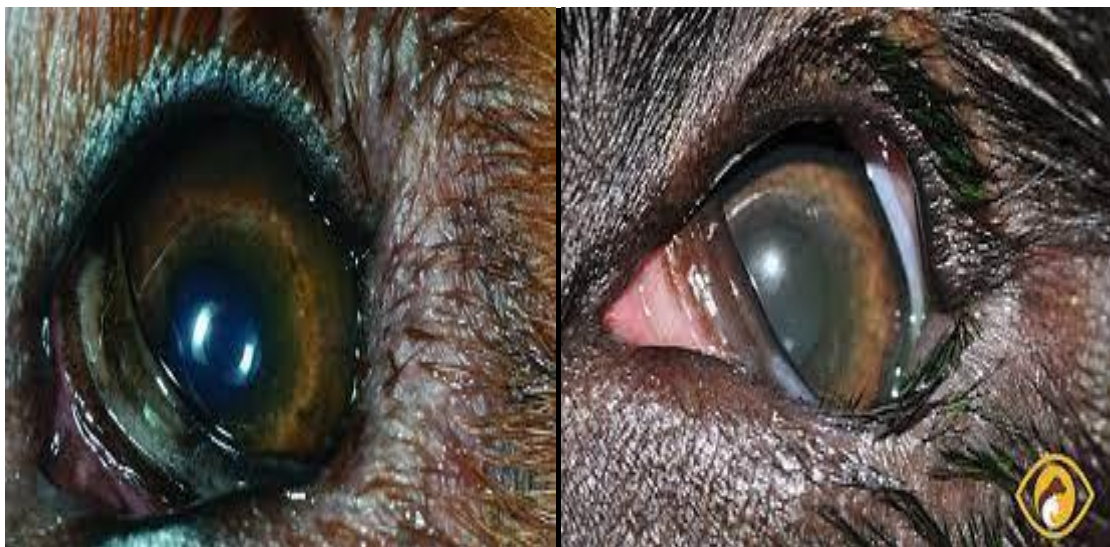


Corneal wounds

Entropion in dogs

Entropion is when an eyelid rolls in towards the eyeball, causing fur and eyelashes to rub the surface of the eye. It is very painful and often leads to problems such as conjunctivitis, infections, and ulcers. Left untreated, entropion can cause blindness or even loss of an eye. The condition is most common in dogs with excess skin/skin folds and dogs with short noses(15).

Pedigree dogs often inherit entropion from a parent but it's can also be caused by face shape, age, and chronic skin problems(16).



Symptoms included

- Weepy eye
- Closing eye
- Red-eye
- Rubbing face
- Recurring conjunctivitis
- Recurring eye infections
- Recurring eye ulcers

Causes

Entropion can develop because of:

Face shape/breed: Breeds at risk of entropion include those with lots of skin around their eyes such as the Shar-Pei, Chow, and St Bernard, and flat-faced breeds such as the Bulldog and Pug.

Pain : A painful eye often causes the eyeball to sink into its socket, which can cause entropion.

Age : Just like us, dogs develop saggy skin with age. Saggy eyelids are likely to roll inwards. Age-related entropion is very common in Cocker Spaniels.

Treatment

Surgical Correction of Entropion....

Several techniques have been suggestive for corrected entropion such as

- Temporary eyelid everting technique
- Celsus technique
- Modified Hotz-Celsus technique.

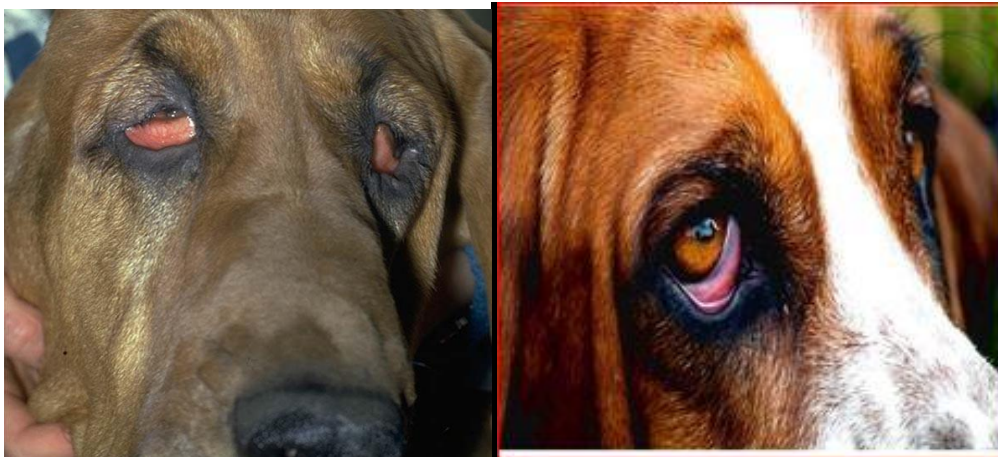
The dog may need more than one operation to cure the problem.

If the puppy has entropion, the Vet. is likely to suggest waiting until they are between 5-12 months old before correcting it. This is because it may improve as they grow. The Vet. may suggest a temporary procedure to hold the puppy's eyelids in a more natural position and protect their eyes while they grow. Left untreated, entropion can cause blindness. Eye drops It's likely the Vet. will prescribe eye drops to lubricate your dog's eye(s), reduce inflammation and treat any infections. If you have more than one eye drop to apply, you may find our medicine planner useful(15).

Ectropion: Outward Eyelid Problem

Ectropion is the outward rolling of the eyelid and usually involves the central part of the lower eyelid. It may also affect the upper lid. It occurs predominantly in the dog. It can be seen in any breed, but some breeds are predisposed.

Ectropion may be inherited and may develop early, However, Acquired ectropion may occur after eyelid trauma (especially lacerations or bite wounds) or eyelid surgery (such as overzealous entropion repair or removal of large lid tumors). Acquired ectropion may also develop in older dogs from decreased muscle tone of the eyelids and maybe noted temporarily in hunting dogs when they become tired. Ectropion may also occur with paralysis of the seventh cranial nerve, which activates the eyelid muscles(17).



Clinical signs

Many dogs have no clinical signs except for increased visibility of the conjunctiva of the lower eyelid. If the eyelid does not protect the nearby cornea or if ectropion is combined with entropion, then signs of corneal inflammation or ulceration (squinting, discharge, redness) may occur. Debris sometimes collects in the gap between the affected portion of the eyelid and the cornea and may be irritating to the eye(18).

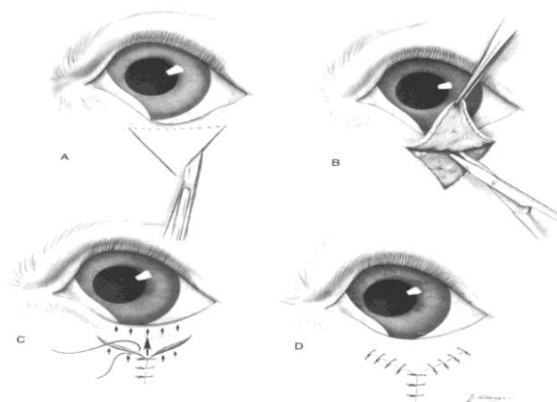
Treatment

Dogs with minimal clinical signs may be treated conservatively by flushing debris from the eye with eye-irrigating solutions and applying a protective ophthalmic lubricant (usually an ointment or gel).

Surgical treatment is usually reserved for those cases with corneal irritation or inflammation, persistent conjunctivitis, or concurrent entropion. A variety of surgical procedures have been developed to correct ectropion, such as

V-Y Blepharoplasty:-

- Making V-shape incision through ventral to and slightly wider than the everted area
- Remove scar tissue if present.
- Suturing incision creating the stem of the Y



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