

# Conjunctivitis in Dogs

(Inflammation of the Moist Tissues of the Eye)

## Basics

### OVERVIEW

- Inflammation of the moist tissues of the eye (known as the “conjunctiva”); the conjunctiva is the vascularized moist tissue (mucous membrane) that covers the front part of the eyeball or globe, up to the edge of the cornea (known as the “bulbar conjunctiva”) and lines the lids and third eyelid (known as the “palpebral conjunctiva”)

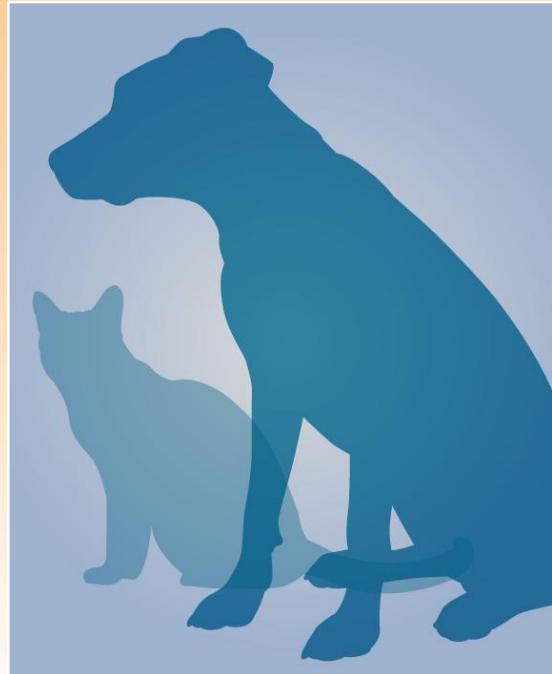
### SIGNALMENT/DESCRIPTION OF PET

#### Species

- Dogs

#### Breed Predilections

- Breeds susceptible to allergic or immune-mediated skin diseases (such as “atopy”) tend to have more problems with allergic inflammation of the moist tissues of the eye (conjunctivitis) or “dry eye” (known as “keratoconjunctivitis sicca” or KCS); “atopy” is a disease in which the dog is sensitized (or “allergic”) to substances found in the environment (such as pollen) that normally would not cause any health problems



### SIGNS/OBSERVED CHANGES IN THE PET

- Squinting or spasmodic blinking (known as “blepharospasm”)
- Redness of the moist tissues of the eye (known as “conjunctival hyperemia”)
- Discharge from the eye(s); may be clear or may contain mucus and/or pus
- Fluid buildup (known as “edema”) of the moist tissue covering of the eyeball (bulbar conjunctiva), around the cornea (condition known as “chemosis”)
- Follicle formation; the “follicles” are accumulations of lymphoid tissue located at the moist tissue surface of the third eyelid and the eyelids, causing a “cobblestone” appearance; lymphoid tissue contains lymphocytes, a type of white blood cell that are involved in allergies and response to irritants

## CAUSES

### Bacterial Causes

- Primary condition (that is, not secondary to another condition such as “dry eye” [keratoconjunctivitis sicca or KCS])—rare

- Newborn inflammation of the moist tissues of the eye (conjunctivitis)—accumulation of discharge, often associated with a bacterial or viral infection; seen before the eyelids separate or open

### **Viral Causes**

- Canine distemper virus
- Canine herpesvirus-1
- Canine adenovirus-2

### **Immune-Mediated Causes**

- Allergic conjunctivitis—especially in atopic pets; “atopy” is a disease in which the animal is sensitized (or “allergic”) to substances found in the environment (such as pollen) that normally would not cause any health problems
- Follicular conjunctivitis—inflammation of the moist tissues of the eye (conjunctivitis) characterized by accumulations of lymphoid tissue located at the moist tissue surface of the third eyelid and the eyelids, causing a “cobblestone” appearance; lymphoid tissue contains lymphocytes, a type of white blood cell that are involved in allergies and response to irritants; especially in dogs younger than 18 months of age, secondary to long-term (chronic) antigenic stimulation (that is, the substance to which the immune system is responding and producing antibodies)
- Plasma-cell conjunctivitis—inflammation of the moist tissues of the eye (conjunctivitis) characterized by the presence of plasma cells (a specialized type of white blood cell; plasma cells are lymphocytes that have been altered to produce immunoglobulin, an immune protein or antibody necessary for fighting disease); especially in German shepherd dogs
- Related to generalized (systemic) immune-mediated diseases—such as pemphigus, in which the body attacks its own tissues

### **Cancer or Pseudocancer Causes**

- Tumors involving the moist tissues of the eye (conjunctiva)—rare; include melanoma, hemangioma, hemangiosarcoma, lymphoma, papilloma, and mast-cell tumors
- Lesions that appear to be cancer, but are not cancerous (known as “pseudocancer”—inflammation of the border between the cornea (the clear part of the eye, located in the front of the eyeball) and the sclera (the white part of the eye, it is composed of a tough covering that protects the eyeball) characterized by the presence of nodules (condition is known as “nodular episcleritis” [also-called “fibrous histiocytoma,” “ocular nodular granuloma,” and “conjunctival pseudotumor”]; most commonly seen in collies and mixed collies; believed to be immune-mediated; usually appears as a pink mass

### **Secondary to Disease of the Tissues Surrounding the Eye (Known as “Adnexa,” Such as Eyelids, Third Eyelid, and Tear Glands)**

- Lack of normal tear film (known as “aqueous tear film deficiency”); “dry eye” (KCS)
- Lid diseases (such as “entropion,” in which the eyelid curls inward, allowing facial hair to rub the eye; “ectropion,” in which the eyelid is turned outward) and lash diseases (such as “distichiasis,” in which two rows of eyelashes are present on a single eyelid; “ectopic cilia,” in which one or more eyelashes grows in an unusual location [may grow through the conjunctiva, leading to irritation of the eye])—may lead to clinical signs of inflammation of the moist tissues of the eye (conjunctivitis)
- Secondary to blockage of the outflow portion of the drainage system that normally moves tears to the nasal passages (known as the “nasolacrimal system”), such as an obstructed nasolacrimal duct or lack of normal openings on the eyelids into the tear drainage system (known as “imperforate puncta”)

### **Secondary to Trauma or Environmental Causes**

- Foreign body located in the moist tissues of the eye
- Irritation from dust, chemicals, or eye medications

### **Secondary to Other Eye Diseases**

- Disorder of the cornea (the clear outer layer of the front of the eye) characterized by the presence of ulcers, with or without inflammation (condition known as “ulcerative keratitis”)
- Inflammation of the front part of the eye, including the iris (known as “anterior uveitis”)
- Disease of the eye, in which the pressure within the eye is increased (known as “glaucoma”)

### **Other Causes**

- Ligneous conjunctivitis (inflammation of the moist part of the eye, characterized by thick, opaque conjunctiva)—

young, female Doberman pinschers

## RISK FACTORS

- Exposure to dogs with canine distemper virus, herpesvirus-1, or adenovirus-2 infections

## Treatment

### HEALTH CARE

- Primary—often outpatient
- Secondary to other diseases (such as inflammation of the front part of the eye, including the iris [anterior uveitis] and corneal ulceration, with or without inflammation [ulcerative keratitis])—may need hospitalization while the underlying problem is diagnosed and treated

### ACTIVITY

- Primary—usually no restriction
- Suspected contact irritant or sudden (acute) allergic disease—prevent (if possible) contact with the agent causing the irritation or allergy
- Do not expose pets to other dogs to decrease risk of spread of infectious causes (such as canine distemper virus) or inflammation of the moist tissues of the eye (conjunctivitis)

### DIET

- Suspected underlying skin disease and/or food allergy—food elimination diet recommended; “elimination diet” is a diet that does not contain substances that the animal normally eats and is free of additives

### SURGERY

- Blockage of the outflow portion of the drainage system that normally moves tears to the nasal passages (known as the “nasolacrimal system”), such as an obstructed nasolacrimal duct—surgical repair is difficult; treatment often not recommended
- Cancer involving the moist tissues of the eye (“conjunctival cancer”)—may involve surgical removal of the tumor followed by radiation therapy; freezing (known as “cryotherapy”); or heating of the tissues using radiofrequency waves (known as “radiofrequency hyperthermia”); may involve surgical removal of the eyeball and associated tissues (known as “enucleation”), depending on the type of tumor and the extent of involvement

## Medications

Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive

### BACTERIAL INFECTIONS

- Antibiotics based on bacterial culture and sensitivity results
- Antibiotics may be applied directly to the moist tissues of the eye (“topical treatment”) or may be given by mouth (“systemic treatment”)
- Initial treatment—broad-spectrum topical antibiotic or specific antibiotic based on results of microscopic examination of discharge and/or conjunctival scraping, while waiting for bacterial culture and sensitivity results; may try treatment based on experience with other cases of conjunctivitis, performing a bacterial culture and sensitivity only if the pet does not respond to selected treatment
- Topical triple antibiotic or chloramphenicol—if cocci (general type of bacteria) seen on microscopic examination of discharge and/or conjunctival scraping
- Gentamicin or tobramycin—if rods (general type of bacteria) seen on microscopic examination of discharge and/or conjunctival scraping
- Ciprofloxacin or other quinolone antibiotics—may be useful for severe bacterial inflammation of the moist tissues of the eye (conjunctivitis)
- Systemic antibiotics—occasionally indicated, especially for more generalized disease (such as inflammation of the moist tissues of the eye [conjunctivitis] associated with skin infection characterized by the presence of pus [known as “pyoderma”])

## **NEWBORN CONJUNCTIVITIS**

- The veterinarian will open the lid margins carefully, establish drainage of discharge, and treat with topical antibiotic

## **IMMUNE-MEDIATED CONJUNCTIVITIS**

- Depends on severity
- Topical steroids— applied directly to the moist tissues of the eye; 0.1% dexamethasone; improve clinical signs of allergic, follicular conjunctivitis (characterized by accumulations of lymphoid tissue located at the moist tissue surface of the third eyelid and the eyelids, causing a “cobblestone” appearance), and plasma-cell conjunctivitis (characterized by the presence of plasma cells); improvement often temporary
- Treatment of any underlying disease (such as atopy) often improves clinical signs; “atopy” is a disease in which the animal is sensitized (or “allergic”) to substances found in the environment (such as pollen) that normally would not cause any health problems
- Other steroids—1% prednisolone acetate; betamethasone; hydrocortisone

## **Follow-Up Care**

### **PATIENT MONITORING**

- Recheck shortly after beginning treatment (at 5–7 days); then recheck as needed

### **PREVENTIONS AND AVOIDANCE**

- Treat any underlying disease that may make the eye disease worse—allergic or immune-mediated skin disease; “dry eye” (KCS)
- Vaccination against canine distemper virus

### **EXPECTED COURSE AND PROGNOSIS**

- Bacterial infection/inflammation of the moist tissues of the eye (conjunctivitis)—usually resolves with appropriate administration of antibiotics; if an underlying disease is found (such as “dry eye” [KCS]), resolution may depend on appropriate treatment and resolution of the disease
- Immune-mediated diseases—diseases tend to be controlled, not cured; may require long-term (chronic) treatment with steroids at the lowest dose possible

## **Key Points**

- If a large amount of discharge is noted, gently clean the eyes before administering treatment
- If both eye solutions and eye ointments are prescribed, apply the solution(s) before applying the ointment(s)
- If several eye solutions are prescribed, wait several minutes between treatments
- Call for instructions if the condition worsens, which indicates that the condition may not be responsive to treatment or may be progressing or that the animal may be having an adverse reaction to a prescribed medication
- An Elizabethan collar should be placed on the pet, if self-trauma occurs