

UVEITIS

WHAT IS UVEITIS?

The outer layer that encloses the eye is composed of the clear cornea and the white sclera. Inside the eye, the innermost layer is the nerve layer called the retina. The middle layer of the eye called the uvea or uveal tract is the nutritional layer rich in blood vessels. It is made up of the iris (coloured portion inside the eye), the ciliary body (the part that produces the fluid inside the eye called aqueous humor), and the choroid which provides nutrition to the retina. When inflammation develops within the uveal tract, this is termed uveitis. As specific segments of the uveal tract are affected, uveitis is further classified depending on the affected structure:

- Iritis is inflammation of the iris
- Cyclitis is inflammation of the ciliary body
- Anterior uveitis or iridocyclitis is inflammation of both the iris and ciliary body
- Choroiditis or posterior uveitis is inflammation of the choroid
- Panuveitis is inflammation of the iris, ciliary body, and choroid

Due to its rich blood supply, the uveal tract is a natural target for diseases originating in other parts of the body. Because the cornea is normally clear, signs of disease may be seen inside the eye, often before signs develop elsewhere in the body. Additionally, uveitis can be caused from problems within the eye itself, such as cataracts or changes in the lens, corneal ulcers, or trauma.

HOW IS UVEITIS DIAGNOSED?

Uveitis is not a disease, it is a condition or syndrome which indicates inflammation inside the eye. It may cause vague clinical signs that may include blinking, squinting, watery discharge from the eye, and/or sensitivity to light without any obvious changes to the eye itself. Some obvious signs of uveitis include:

- red, swollen conjunctiva (the pink tissue around the eye)
- cornea appears dull or hazy blue
- iris becomes red or changes colour

Uveitis is diagnosed by an ophthalmic examination of the structures of the eye using instruments that magnify and illuminate. If it is suspected that the problem is being caused by another disease process elsewhere in the body (as opposed to the problems within the eye itself mentioned above), then blood profiles or other tests may be necessary to locate the cause. An ophthalmic examination consists of a visual inspection of the external and internal portions of the eye and the measurement of the pressure within the eye. Pressure inside the eye is maintained by fluid (aqueous humor) which is continually being produced by the ciliary body. This fluid flows forward, through the pupil, then drains into an opening (filtration angle) between the iris and the cornea where it leaves the eye. When the ciliary body is inflamed or damaged due to uveitis, fluid

production may decrease or cease entirely, causing the pressure in the eye to fall below normal. Alternatively, if the fluid production remains normal, but the filtration angle becomes blocked, the pressure inside the eye will increase (condition known as glaucoma). Causes of blockage include:

- cellular debris produced in uveitis can block the drainage angle and inhibit the outflow of the fluid
- the iris may adhere to the the lens, blocking the flow of fluid through the pupil

Once the uveitis resolves, glaucoma may still persist if the drainage structures were permanently damaged by the inflammation. For these reasons, regular recheck examinations with the ophthalmologist are important.

WHAT ARE THE CAUSES OF UVEITIS?

Uveitis can be caused by many different diseases. Diseases in the dog include lymphoma, bleeding disorders, ehrlichiosis, rocky mountain spotted fever, lyme's disease, and brucellosis. In the cat, causes include feline leukemia virus (FeLV), feline infectious peritonitis (FIP), feline immunodeficiency virus (FIV), toxoplasmosis and/or other diseases. In any animal, corneal ulcers, penetrating injuries, blunt trauma, or even a scratch may result in uveitis. The lens can also cause uveitis if it has leaked some of its contents inside the eye, or if a cataract is rapidly forming or dissolving. Uveitis can also occur after cataract surgery. Further possible causes include local bacterial infection, immune mediated diseases, cancer, and parasitic diseases. Treatment can be more specific if the actual cause of uveitis is known. **Unfortunately, in about 60% of cases, the cause of uveitis is never found.**

HOW IS UVEITIS TREATED?

Medical treatment of uveitis must be aggressive to prevent glaucoma, scarring of the structures inside the eye, and blindness. Different medications are used to control the original cause of the uveitis, if known, and to minimize the inflammation itself. Anti-inflammatories by mouth, eye drops, and corticosteroids minimize the inflammatory process. Corticosteroids may be administered by eye drops, injections under the conjunctiva, or orally depending on what structures in the eye are affected. Drops in the eye must be postponed if damage to the corneal surface (such as an ulcer) is present because the corticosteroids prevent healing and can cause the ulcer to worsen. If certain systemic diseases are suspected, oral corticosteroids may be postponed or avoided altogether. Topically applied NSAIDs (non-steroidal anti-inflammatory drugs) will help reduce the inflammation inside the eye. Drops or ointments that dilate the pupil and relax the muscles within the eye help to reduce adhesions and pain. This medication may not be used if glaucoma is present as it may further decrease the fluid drainage from inside the eye. Antibiotics are only used when the cause has been localized to a systemic infection such as ehrlichia, lyme's disease, toxoplasmosis, rocky mountain fever, etc.

WHAT IS THE PROGNOSIS?

The treatment of uveitis requires therapy to halt the inflammation of the uveal tract. Follow up examinations ensure optimal therapy is being given and guard against possible complications. Uveitis, if caught early and treated diligently and aggressively, will often resolve without serious consequences. Unfortunately, in certain individual patients the cause of uveitis is never determined and treatment may be **lifelong**. In other patients, uveitis is so severe that removal of the eye is necessary. Lastly, in occasional patients, uveitis is self-perpetuating (causes more uveitis). These patients are more difficult to control.

