

Hypertensive Retinopathy

Ophthalmology Service



Michigan Veterinary
Specialistssm

www.michvet.com

We Can Help

LOCATIONS:

29080 Inkster Rd.
Southfield, MI 48034
(248) 354-6660

3412 E. Walton Blvd.
Auburn Hills, MI 48326
(248) 371-3713

1425 Michigan St. NE
Grand Rapids, MI 49503
(616) 284-5300

Pathophysiology of Retinal Changes

The retina is a very thin tissue at the back of the eye (behind the iris and lens) that is closely associated with many small blood vessels which supply it with oxygen and nutrients. When systemic blood pressure rises to over approximately 180mm Hg changes start to become evident in the retinal vessels. First, the vessels appear more tortuous. This is analogous to high pressure water flowing through a very small diameter soaker hose. With elevated pressure the hose becomes stiff (torturous) and if the pressure stays high the hose either continuously leaks excessive amounts of water or could burst. The same scenario happens to the vessels at the back of the eye where either burst causing areas of retinal hemorrhage or continuously leak too much fluid. In both cases the fluid or blood lifts the retina away from its normal supply of oxygen and nutrients (called a retinal detachment). The amount of vision loss the pet experiences correlates with the amount of the retina that has become detached and ranges from complete to partial.

Examination

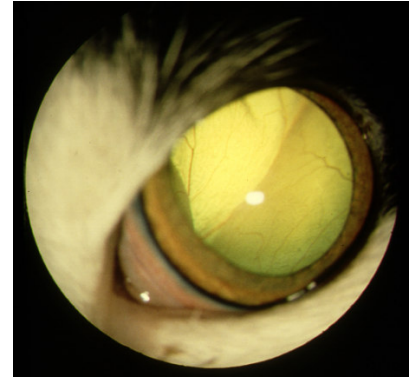
- In the majority of cases of hypertensive retinopathy cases Schirmer tear tests, fluorescein staining, and intraocular pressures will be within normal limits.
- Slit-lamp examination of the front portion of the eye may reveal poor to absent response of one or both pupils to light.
- Indirect ophthalmoscopy to look at the back of the eye may reveal changes to the retinal vessels or complete to partial retinal detachment

Further Diagnostics and Treatment

Blood pressure must be measured to ensure that the ocular changes are attributable to hypertension and to establish a reference point prior to starting therapy. Blood work including a complete blood count, serum chemistry analysis (with thyroid levels in cats), and urinalysis are also essential to determine if there is an underlying cause for the blood pressure elevation. Although systemic hypertension often presents as an ocular problem, it has major impacts on other organs (such as the kidneys, heart, and brain) and the affects on these organs can be life-limiting if not controlled.

Prognosis

The prognosis for return of vision is fair. Once the hypertension is controlled the fluid or hemorrhage causing the retinal detachment is slowly reabsorbed and the retina will often reattach sometimes with partial return of vision. The overall prognosis varies depending on what the underlying cause of the hypertension is and how well the hypertension is able to be controlled. Most causes of hypertension require life-long management with medications and routine monitoring of blood work and blood pressure with an internal medicine specialist or general practitioner.



Symptoms

- Vision loss which may be progressive or sudden. With sudden vision loss owners are more likely to see their pet bumping into objects.
- One or both pupils may appear large or dilated in all light conditions
- If only one eye is affected then the pet may seem wary of stairs or misjudge distance when jumping on to objects
- Difficulty finding treats or toys