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History and clinical presentation

A 1-year-old, intact, male rough collie was presented to the Veterinary Referral Clinic of Mississauga for a Canine Eye Registry Foundation examination. This examination assesses an individual for hereditary eye disease and allows for genetic counselling. The patient's eyes were examined with a transilluminator (Welch Allyn, Mississauga, Ontario), a slit-lamp biomicroscope (Osram, Carl Zeiss Canada, Don Mills, Ontario), and an indirect ophthalmoscope (Omega 200, Heine Instruments, Kitchener, Ontario). The anterior segment of both eyes was normal. The posterior segment of each eye was affected by focal choroidal hypoplasia, superotemporal to the optic disc. Photographs of the fundus of the left eye are presented for your evaluation (Figures 1 & 2).

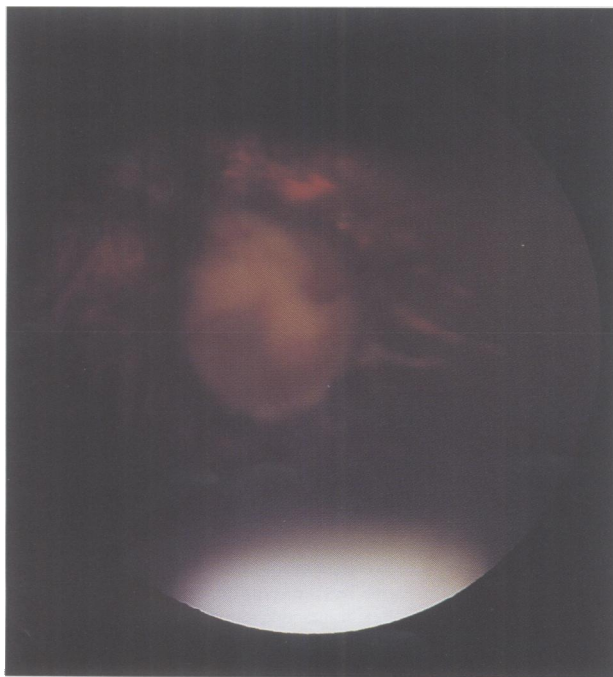
Your diagnosis and recommendations?

Figure 1. Fundus of the left eye of a 1-year-old collie with collie eye anomaly, optic nerve pit, and adjacent retinal detachment.

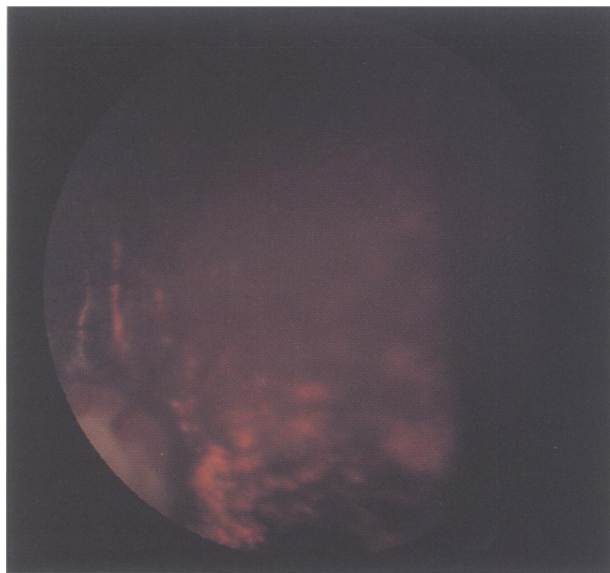


Figure 2. Fundus of the same eye (as in Fig. 1) highlighting the serous retinal detachment.

Diagnosis and discussion

The fundus of the left eye has a coloboma (congenital pit) of the optic nerve, focal peripapillary detachment of the neurosensory retina, and choroidal hypoplasia. Choroidal hypoplasia, superotemporal to the optic disc, sometimes accompanied by optic nerve coloboma, is referred to as collie eye anomaly (1). This is a congenital defect with an autosomal recessive inheritance pattern. Puppies that are born with colobomas in their optic nerves may develop serous retinal detachments adjacent to these pits (2). The retinal detachment may be present as early as 6 wk of age, or may appear later in life. These small retinal detachments may proceed to complete detachment and blindness. The source of the subretinal fluid in the areas of detachment is thought to be from the vitreous space (3,4). It has been shown that the vitreous space communicates directly with the subretinal space in collies with optic nerve colobomas (5). Other potential sources of subretinal fluid include cerebrospinal fluid (6,7) and diffusion from the choroid (8). In a recent report, xenon arc photocoagulation was used in the treatment of serous retinal detachments in collies (2).

A similar mode of treatment was used on this patient. The pupil of the left eye was dilated with topical 1% tropicamide (Mydracyl, Alcon Canada, Mississauga, Ontario). General anesthesia was induced and maintained with oxygen and isoflourane (Aerrane, Ohmeda Pharmaceutical Products, Mississauga, Ontario). The eye was held in a central position with 4 scleral stay sutures of 5-0 braided nylon (Surgilon, Cyanamid Canada,

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Montreal, Quebec). The edges of the retinal detachment were irradiated with a diode laser (Oculight SL, Iris Medical Instruments, Mountainview, California), utilizing a binocular indirect ophthalmoscope delivery system. The retina was sealed to the underlying retinal pigment epithelium and choroid with focal applications of laser energy of 500 ms duration, and 500 mW power. The laser burns were placed in normal retina adjacent to the detachment to prevent further separation of the retina by subretinal fluid. The edge of the optic nerve coloboma was sealed to close the communication between the vitreous and subretinal spaces. The use of diode laser energy delivered via a binocular indirect ophthalmoscope has been reported for the treatment of various conditions (9-11).

This dog recovered without incident and was discharged. On recheck examination after 1 wk, the retinal detachment was found to be decreased in size, and the eye was sighted and comfortable. On examination at 6 mo post-treatment, the retinal detachment was found to be completely resolved.

This treatment modality is well suited to the treatment of early serous retinal detachments in any breed. However, the presence of a coloboma, which predisposes to retinal detachment, makes transpupillary diode laser retinopexy ideal in the collie.

References

1. Roberts SR, Dellaporta A, Winter FC. The collie ectasia syndrome. *Am J Ophthalmol* 1966; 62: 728-752.
2. Vainisi SJ, Peyman GA, Wolfe ED, *et al.* Treatment of serous retinal detachments associated with optic disk pits in dogs. *J Am Vet Med Assoc* 1989; 195: 1233-1236.
3. Brown GA, Shields JA, Goldberg RE. Congenital pits of the optic nerve head. *Ophthalmology* 1980; 87: 51-65.
4. Brochurst RJ. Optic pits and posterior retinal detachment. *Trans Am Ophthalmol Soc* 1975; 73: 264-288.
5. Brown GA, Shields JA, Goldberg RE. Congenital pits of the optic nerve head: Experimental studies in collie dogs. *Arch Ophthalmol* 1979; 97: 1341-1344.
6. Gass JD. Serous detachments of the macula. *Am J Ophthalmol* 1969; 67: 821-841.
7. Regenbogen L, Stein R, Lazar M. Macular and juxtapapillary serous retinal detachment associated with pit of optic disc. *Ophthalmologica* 1964; 148: 247-251.
8. Wise GN, Dollery C, Henkind P. The retinal circulation. New York: Harper & Row, 1971: 471-473.
9. Nissen M, Rosen R, Hu DN, *et al.* Indirect diode laser retinopexy disperses fewer viable pigment epithelial cells than cryopexy. *Assoc Res Vision Ophthalmol* 1992; 33(suppl): abstract #1817.
10. Benner JD, Huang M, Morse LS, *et al.* Comparison of photo-coagulation with the argon, krypton, and diode laser indirect ophthalmoscopes in rabbit eyes. *Ophthalmology* 1992; 99: 1554-1563.
11. Friberg TR, Eller AW. Pneumatic repair of primary and secondary retinal detachments using a binocular indirect ophthalmoscope laser delivery system. *Ophthalmology* 1988; 95: 187-193.

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