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Retinal degeneration in a goat

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### **Retinal Degeneration in a Goat**

A 4-MONTH-OLD female Toggenburg goat was examined because of blindness. The goat was one of triplets from a normal gestation and birth. It stayed close to its mother until weaned, at which time it bumped into objects and became unthrifty because it could not compete with the others for food. Examination revealed slight horizontal nystagmus and poor pupillary response to light. The tapetal areas surrounding the optic disks appeared hyperreflective. A tentative diagnosis of bilateral retinal degeneration was offered and, due to the poor prognosis, the goat was euthanatized. The globes were enucleated and prepared for histology.

Histologic abnormalities were limited to the retinas. Figure 1, top, illustrates normal retina from another young goat for comparison. In the abnormal goat, the photoreceptor layer was no more than one nucleus thick

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The author thanks Dr. James Sadwith, Edgartown, Mass, for sending the fixed globes.

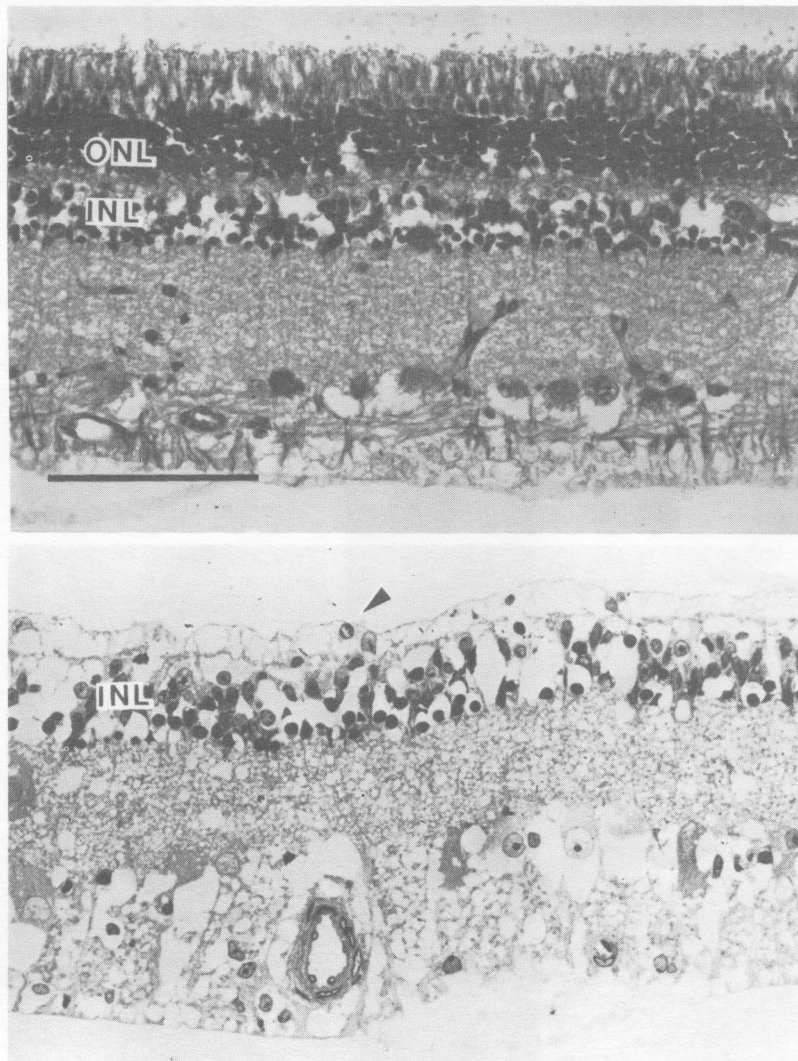


Fig 1—Top—Normal sensory retina from a young goat. Zenker's fixation, H&E stain. Bottom—Sensory retina from a goat with loss of most photoreceptor cells; arrowhead points to possible remaining rod nucleus. Most of the nuclear dropout and vacuoles in the inner nuclear and ganglion cell layers is fixation artifact. Formalin fixation, azure II-methylene blue stain. Both photomicrographs are oriented with receptor side at top. The bar in the top figure, lower left, equals 100  $\mu$ m for both figures. ONL = outer nuclear layer; INL = inner nuclear layer.

and sporadically present (Fig 1, bottom). The photoreceptor cells had no inner or outer segments. The outer plexiform layer was thin. There was nuclear dropout in the inner nuclear layer, but most of this was attributable to artifact. The rest of the sensory retina and the retinal epithelium were normal.

Although blindness prior to weaning was not diagnosed in this goat, its close following of the dam may have signified poor or absent vision. The animal's excellent health and lack of inflammatory changes seen histologically minimize the possibility of systemic disease as the cause of the retinal degeneration. The young age of the goat and the preferential loss of photoreceptor cells suggest the diagnosis of rod-cone dysplasia, as described in Irish Setters.<sup>1</sup>

At the time of writing, the affected goat's siblings and parents were apparently normal.—*Ned Buyukmihci, VMD, School of Veterinary Medicine, University of California, Davis, CA 95616.*

1. Aguirre GD, Rubin LF: Rod-cone dysplasia (progressive retinal atrophy) in Irish Setters. *J Am Vet Med Assoc* 166:157-164, 1975.