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Pigmentary Uveitis

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Pigmentary Uveitis

Abstract

The recent report by Townsend and Gornik aims to provide more reliable data on the prevalence of two common but poorly understood ocular conditions of Golden Retrievers: uveal cysts and pigmentary uveitis (PU). The study is well designed in terms of patient selection and examination methods, and high degree of disease ascertainment and diagnostic consistency was obtained by having all examinations performed by a single board-certified veterinary ophthalmologist. Even though this and two other studies suggest that these two conditions may perhaps be part of a broader disease complex, there is, as yet, no conclusive evidence of such an association.

Disciplines

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Letters to the Editor

Pigmentary uveitis

The recent report by Townsend and Gornik¹ aims to provide more reliable data on the prevalence of two common but poorly understood ocular conditions of Golden Retrievers: uveal cysts and pigmentary uveitis (PU). The study is well designed in terms of patient selection and examination methods, and a high degree of disease ascertainment and diagnostic consistency was obtained by having all examinations performed by a single board-certified veterinary ophthalmologist. Even though this and two other studies^{2,3} suggest that these two conditions may perhaps be part of a broader disease complex, there is, as yet, no conclusive evidence of such an association.

That said, I worry that the authors' use of a common, and not fully specific, clinical finding as a diagnostic criterion for PU may have introduced some confusion. According to the report, "a diagnosis of PU required the presence of pigment on the anterior aspect of the lens capsule, either in a radial pattern or as multifocal zones," and the authors cited an earlier study by Sapienza et al² for this diagnostic criterion. I do not dispute that Golden Retrievers with PU (as evidenced by aqueous flare, pigmented and inflammatory cells in the aqueous humour, fibrin deposits, posterior synechia, and other findings) have radial pigment lines; however, many Golden Retrievers and many dogs of other breeds can have radial pigment lines on the anterior lens capsule throughout their lives without developing PU or any other ocular inflammatory disease. In my experience, radial pigment lines on the anterior lens capsule are a common finding in Standard Poodles, with an estimated prevalence of 10% to 15% in dogs > 2 to 3 years of age. As well, anterior capsular pigment in multifocal zones occurs with PU, but can also be an unrelated finding, as with implantation of free-floating iris cysts on the anterior lens capsule that subse-

quently become flat pigmented plaques or as a result of congenital capsular pigment defects associated with a variety of ocular defects.

From both the published literature and my clinical experience, it is clear that PU in Golden Retrievers is a complex disorder that is likely heritable. Complex disorders generally are not simple single gene defects and generally involve one or more genetic modifier loci and, possibly, environmental factors that result in a readily recognizable clinical phenotype. The aim of this letter is not to start a discussion as to what are or are not the hallmark clinical findings of PU—any such discussion would be based on conjecture and, sadly, not on an extensive body of peer-reviewed studies. My purpose is to suggest to the authors that rather than lumping PU into a single disease class based on the presence or absence of radial or multifocal pigment on the anterior lens capsule, they consider splitting the various components that supposedly make up this complex disease and analyze the prevalence of each. This will create less confusion for veterinarians, veterinary ophthalmologists, and dog owners and breeders. Such an approach would be extremely useful for future gene-mapping studies, in that it is likely that one of the components of the condition will be found to be associated with a genomic region, even if no association is identified for the disease itself,

as presently defined by its least-specific finding (ie, the presence of radial or multifocal pigment on the anterior lens capsule).

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1. Townsend WM, Gornik KR. Prevalence of uveal cysts and pigmentary uveitis in Golden Retrievers in three Midwestern states. *J Am Vet Med Assoc* 2013;243:1298–1301.
2. Sapienza JS, Simo FJ, Prades-Sapienza A. Golden Retriever uveitis: 75 cases (1994–1999). *Vet Ophthalmol* 2000;3:241–246.
3. Esson D, Armour M, Mundy P, et al. The histopathological and immunohistochemical characteristics of pigmentary and cystic glaucoma in the Golden Retriever. *Vet Ophthalmol* 2009;12:361–368.

The authors respond:

We thank Dr. Aguirre for his comments regarding our article on pigmentary uveitis (PU) in Golden Retrievers. It has not been the authors' clinical experience that radial pigmentation on the anterior lens capsule is a frequent finding in breeds of dogs other than Golden Retrievers, and radial pigmentation in other breeds is not reported in the most recent edition of *Ocular Disorders Presumed to be Inherited in Purebred Dogs*.¹ We did not evaluate

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the various components reportedly associated with this condition individually because a great deal of debate already exists in the veterinary ophthalmology community regarding the clinical findings required to make a diagnosis of PU in Golden Retrievers and we felt that splitting the various components would only cause further confusion for veterinarians, veterinary ophthalmologists, and dog owners and breeders. However, specific examination findings for each Golden Retriever participating in the study were recorded. In future gene-mapping studies of PU in Golden Retrievers, only those dogs that unequivocally have the condition (as evidenced by aqueous flare, pigmented and inflammatory cells in the aqueous humor, fibrin deposits, posterior synechia, and other findings) will initially be used. Once a genomic region is identified, then specific clinical components such as radial pigmentation on the anterior lens capsule will be analyzed individually for their association with this genomic region. A more precise phenotype for PU in Golden Retrievers will then be defined.

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1. *Ocular disorders presumed to be inherited in purebred dogs*. 6th ed. Meridian, Idaho: Genetics Committee of the American College of Veterinary Ophthalmologists, 2013.