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Ophthalmology Snapshot

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History

A 10 year-old female mixed breed dog had been diagnosed with bilateral cataracts. She had bumped into objects while walking around the house for a few years. Two years ago, her vision regained. Soon after, the owner notices that the dog's right eye appears very bright especially at night. She is worried if the dog would be blind again. The dog is presented to the Ophthalmology clinic, Animal Teaching Hospital, Faculty of Veterinary Science, Chulalongkorn University for investigation.

Figure 1 A photograph of the right eye of the mixed breed dog.
(For better quality of photographs, please visit the TJVM website)

Question

1. Give the diagnosis
2. What is the explanation of the "bright" eye?

Please turn to next page for the answer.

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Answer

1. Morgagnian cataract (hypermature cataract with severe lens resorption)
2. The brightness of the eye is from fundus reflection.

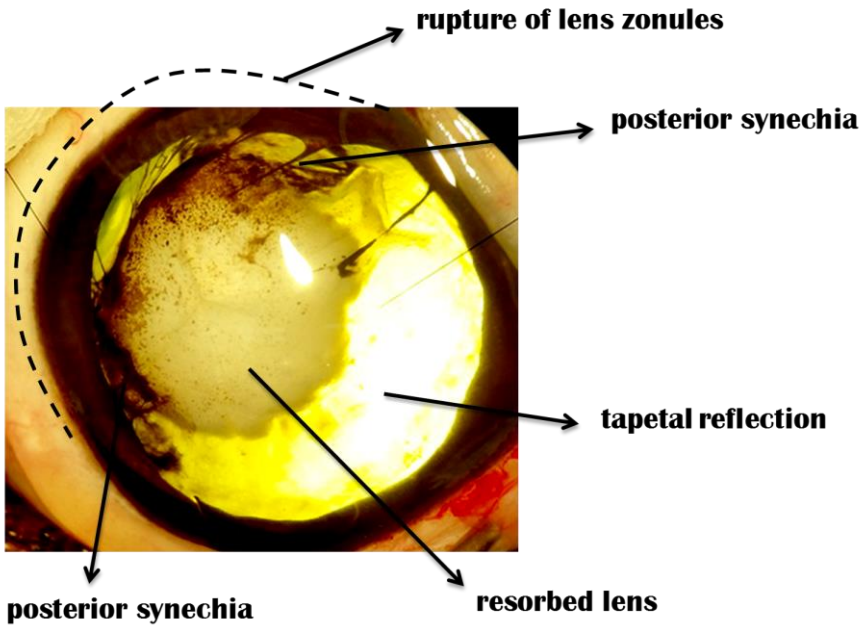

Figure 2 Photographs of the right eye revealing reduction of lens volume, wrinkle of lens capsule, focal adhesion of iris to lens and tapetal reflection.

Comments

Cataract is a group of ocular disorder that involves loss of lens transparency. If classified according to maturation or degree of opacity, there are four types of cataract; incipient, immature, mature and hypermature. Hypermature cataract is the latest stage that lens has become resorption via proteolysis.

When lens undergoes significant proteolysis, disintegration of lens cortex occurs more rapidly than nucleus. Morgagnian cataract is a terminology described characteristics of this advanced stage of lens resorption, which lens nucleus freely remains in liquefied (milky) lens cortex. Degraded lens protein leaks through lens capsule into the anterior chamber, triggering immune-mediated inflammatory response against lens antigens, so called lens-induced uveitis (LIU). High level of circulatory antibodies against lens protein, resulted from a breakdown of blood-aqueous barrier, is a major cause of LIU in canine mature and hypermature cataracts.

If vision has not been lost as a consequence from LIU, extensive change of lens structure or loss of lens protein somehow allows dogs to regain vision.

Reference

Ofri R, 2013. Lens. In: Slatter's Fudamentals of Veterinary Ophthalmology. 5th ed. DJ Maggs, PE Miller and R Ofri (ed.). St. Louis: Elsevier. 276-283.

Renzo R, Ribeiro AP, da Silva ML, da Silva GA, Ortencio KP, Barros Sobrinho AAF, Mineo TWP and Laus JL, 2014. Intraocular pressure, specular microscopy, and prostaglandin E2 concentration in dogs with mature and hypermature cataract. 17(4): 280-285.