

Ophthalmology Snapshot

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History

A 5 year-old female Miniature pinscher presented with bilateral corneal opacity was referred from a private animal hospital to the Ophthalmology Clinic, Small Animal Teaching Hospital, Veterinary Science, Chulalongkorn University. Corneal opacity had initially presented on the left eye since last year. The owner noticed the other cornea became opaque 2 months ago. Previous treatment had not been made.

Routine ophthalmic examinations revealed positive neuro-ophthalmic reflexes, normal STT 1 values, normal IOP values and negative fluorescein staining on both eyes. Lesions that were bilateral and nearly symmetrical appeared circular and metallic. Slit lamp biomicroscopy could identify the depth of the lesion that was in the subepithelial layer of the paracentral cornea (Fig 1).

(On day of examination: dog's weight = 6 kg, fasting blood glucose = 92 mg%, cholesterol = 141 mg%, calcium = 9.5 mEq/L, phosphorus = 3.2 mEq/L).



Figure 1 Clinical appearance of bilateral corneal opacity in a Miniature pinscher.

(For better quality, figures can be viewed in the TJVM website)

Question

Give the tentative diagnosis.

Please turn to the next page for answers

Answers***Tentative diagnosis:***

Stromal corneal dystrophy
Lipid keratopathy

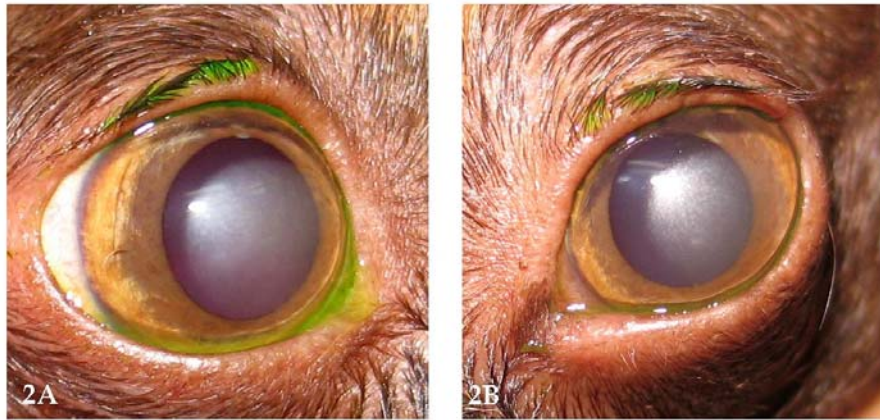


Figure 2 Close-up photographs of the right (2A) and left (2B) eye of a Miniature pinscher presented with silver, metallic opacity at paracenter of the cornea.

Comments

Stromal corneal dystrophy is an inherited ocular disorder reported in a number of dog breeds; for example, Beagle, Cavalier King Charles spaniel, Rough collie, American cocker spaniel, Siberian husky, and miniature pinscher. It is not accompanied by ocular surface inflammation or systemic abnormalities. Clinical appearance is a silver, crystalline or metallic opacity in the center or paracenter of the cornea. When it becomes chronic, lipid can be accumulated, which then induces inflammation.

Canine lipid keratopathy is associated with nutritional imbalance or systemic disorders; such as diabetes mellitus, hypothyroidism, hyperlipoproteinemia and pancreatitis. Corneal opacity can be unilateral or bilateral. Inflammation does not usually involve at early stage. However, corneal vascularization can occur with chronicity.

To differentiate between these two major disorders, serum chemistry panel, serum lipid profile (cholesterol, cholesterol ester, high-density and low-density lipoprotein, fasting blood glucose and triglyceride) as well as calcium and phosphorus level will be useful.

References

- Crispin, S. 2002. Ocular lipid deposition and hyperlipoproteinemia. *Progress in Retinal and Eye Research*. 21, 169-224
- Crispin, S. 1988. Crystalline corneal dystrophy in the dog. Histochemical and ultrastructural study. *Cornea*. 7 (2), 149-161
- Gilger, B.C. 2007. Diseases and surgery of the canine cornea and sclera. In: *Veterinary Ophthalmology*. 4th ed. K.N. Gelatt (ed). Ames: Blackwell Publishing. 725-730.