Ophthalmology Snapshot

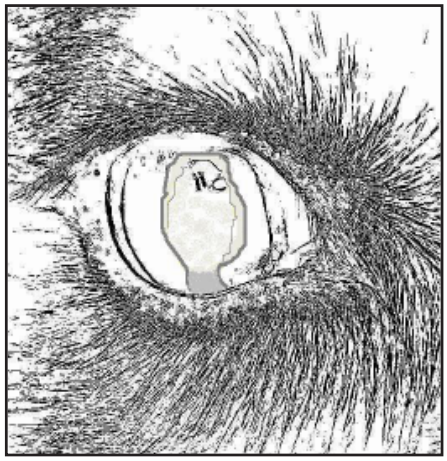
Nalinee Tuntivanich

History

A one year and 2 months old, female Siberian husky was referred to the Small Animal Teaching hospital, Faculty of Veterinary Science, Chulalongkorn University with a complaint of persistent cloudy eyes (Figure 1). History taking revealed that ocular cloudiness had initially been noticed by the owner since the dog was 6 months of age. No evidence of visual deficit was noted.

Menace responses, dazzle reflexes and pupillary light responses were bilaterally positive. The dog performed well on maze tests under light and dark conditions. Schirmer tear test and intraocular pressure values were within normal limits. Both corneas were examined with a focal light source. Pupils were dilated for further ophthalmic examinations.

1 A



1 B

Figure 1. A front-view photograph (1A) and a schematic diagram (1B) of the right eye revealing a vertically oval opacity in the central portion of the eye in the Siberian husky. More intense opacity appears at 6 o'clock position. Note that the red reflection of fundus is due to a full dilation of the pupil.

Questions

1. How do you differentiate the location of the lesion (cornea or lens)?
2. What is your tentative diagnosis?

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

Please turn to the next page for answers .....

Ophthalmology Clinic, Department of Surgery, Faculty of Veterinary Science, Chulalongkorn University, Bangkok 10330, Thailand

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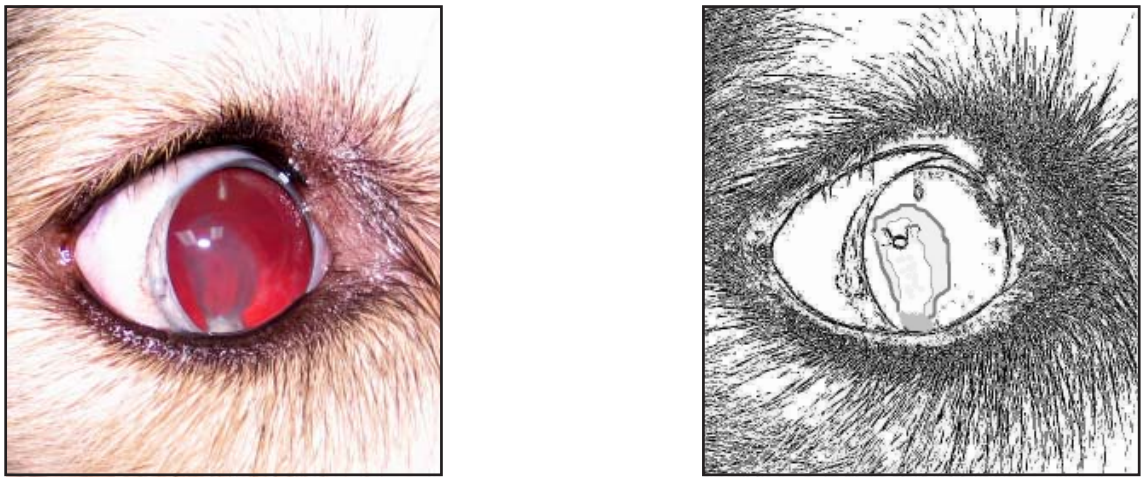
Answers

1. Normal cornea and lens are crystal clear structures. Corneal lesion can be examined with focal light source directly and obliquely pointing into it. With a strong, focal light beam, lesion on the lens will easily be seen. To distinguish position of the lesion on the lens, an eyeball should be swung to different direction. Lesion on the cornea or anterior part of the lens follows to the same direction of the eyeball. Lesion on the posterior part of the lens, on the other hand, goes to the opposite direction (Figure 2). With a slit-lamp biomicroscopy, the first reflection of a slit beam is on the cornea, the second is on the anterior lens capsule and the last is on the posterior lens capsule.



2 A **2 B**

Figure 2. An oblique-view photograph (2A) and a schematic diagram (2B) of the right eye swung nasally, revealing that the ocular lesion is displaced toward the temporal region.

2. Juvenile/hereditary cataract

Comments

Hereditary or juvenile cataract usually appears in puppy or young adult Siberian husky between 6-12 months of age. The lesion commonly begins in the posterior axial region of the lens. Progression is variable, thus vision can be mildly reduced or rapidly progress. Because this is genetic disorder, an attempt is underway to identify gene responsible for the disease in this breed. While research is in progress to develop DNA-based test to identify dogs carrying this gene, annual ophthalmic examination is imperative. Opacity on an axial part of the posterior lens capsule in hereditary cataract can be misdiagnosed with persistent hyperplastic primary vitreous (PHPV) in Siberian husky. Ocular ultrasonography can be used to diagnose PHPV by changes in retrolental space.

References

Gentilini, F., Rovesti, G.L. and Turba, M.E. 2008. Known insertion/deletion mutations in exon 9 of heat shock transcription factor 4 are not responsible for juvenile hereditary cataract in Siberian Husky dogs. Anim. Genet. 39(5): 575-576.

Ori, J., Yoshikai, T., Yoshimura, S. and Takenaka, S. 1998. Persistent hyperplastic primary vitreous in two Siberian Husky dogs. J. Vet. Med. Sci. 60(2): 263-265.

Siberian Husky Club of America, Inc 1996. [Online] Available: http://www.shca.org