

A case of anterior iris cyst in an Akbash dog

M. SAROGLU, K. ALTUNATMAZ, Y. DEVECIOGLU

Surgery Department, Faculty of Veterinary Medicine, Istanbul University, Avcilar, Istanbul, Turkey

ABSTRACT: In this case presentation, an uncomplicated anterior iris cyst encountered in an 8-year-old female Akbash dog has been discussed. While these structures may be congenital, they may also develop secondarily due to trauma or chronic inflammation. Following systemic examination, the iris cyst was diagnosed to be present in the 5–6 o'clock position and that it was attached to the pupillary margin on the anterior surface of the iris. There were no abnormalities in any of the intraocular structures. No intervention of treatment was made, since the anterior iris cyst in the patient did not cause either corneal opacity or an increase in intraocular pressure.

Keywords: iris cyst; uveal cyst; Anatolian Sheepdog; Akbash

While uveal cysts may be attached to the iris or corpus ciliare, they may also be free in the anterior chamber (Slatter, 1990; Corcoran and Koch, 1993; Crispin, 1993). These structures are oval and usually pigmented. They consist of a fluid-filled single cell membrane. They originate either from the neuroepithelium of the corpus ciliare or the pupillary margin (Corcoran and Koch, 1993). While they may originate from the posterior iris or the pupillary margin, unattached ones may also be located in the ventral half of the anterior chamber due to aqueous dynamics and gravity (Carter and Mausolf, 1970; Peiffer, 1977; Corcoran and Koch, 1993).

While uveal cysts may be congenital in dogs, they may also develop secondarily due to trauma or chronic inflammation (Bedford, 1980; Collins and Moore, 1991; Sapienza et al., 2000; Massa et al., 2002). Congenital cysts develop in the embryonic stage. The reason for this development is incompleteness of the apposition of two layers of neuroepithelium in the involution of the optic vesicle (Carter and Mausolf, 1970; Peiffer, 1977).

Due to the pigmentation of the cyst, uveal cysts must be distinguished from neoplastic formations, such as intraocular melanoma or epithelial tumours of the corpus ciliare (Bedford, 1980; Slatter, 1990; Corcoran and Koch, 1993; Crispin, 1993). During ophthalmic examination, uveal cysts can usually be easily differentiated from tumours. Cyst membranes

are usually transparent due to their single cell membrane property. Tumours, on the other hand, are usually solid and not transparent. (Peiffer, 1977; Diters et al., 1983). Intraocular tumours may also cause inflammation, hyphema and may increase intraocular pressure. (Corcoran and Koch, 1993). As long as uveal cysts do not cause destruction by making contact with the corneal endothelium and do not obstruct vision or the aqueous drainage at the irido-corneal angle, there is no need for medical or surgical treatment (Bedford, 1980; Slatter, 1990; Corcoran and Koch, 1993; Crispin, 1993). However, when treatment is required, a small cannula can be inserted through the limbus and the cyst content aspirated (Bedford, 1980; Belkin, 1983; Jones and Bedford, 1997). In human surgery, the cystic formation can also be destroyed by cryosurgery and laser (Shin et al., 2000; Haller et al., 2003).

In their study evaluating 28 cases with uveal cysts, Corcoran and Koch (1993) observed higher cyst development in Golden Retrievers, Labrador Retrievers and Boston Terriers compared to other breeds. Only one of these cases, a Boston Terrier, was treated using the aspiration method due to the cystic formation obstructing vision.

Iris cysts in Great Danes possess genetic properties and when present in large numbers, they may cause secondary narrow-angled glaucoma by exerting pressure on the root of the iris (Slatter, 1990).

DESCRIPTION OF THE CASE

The material of the study comprised an 8-year-old female Akbash dog. In the first systemic eye examination, a slightly pigmented oval sack was noticeable in the anterior chamber. This formation, which was described to be located in the 5–6 o'clock position in the right eye, was diagnosed as an anterior iris cyst due to its location and typical appearance (Figure 1). The examination was repeated 20 minutes after the midriatic agent tropikamide (Tropamid[®], Bilim, Istanbul, Turkey) was administered to the patient. In the second examination, the cystic formation was seen to have changed position towards the root of the iris in connection with the midriasis of the pupillary margin of the iris (Figure 2). This revealed to us that the cyst originated from the pupillary margin on the anterior surface of the iris and that it was not free in the anterior chamber. During examination of the patient, it was established that, the cyst was not in contact with the corneal epithelium and that no corneal edema had formed in relation. There was no pathological change in the patient to suggest increase in intraocular pressure. Pupillary blockage was not present. In order to understand whether or not there were any abnormalities in the intraocular structures of the eye with the iris cyst, the examination was continued using an indirect ophthalmoscope. Very slight senile nuclear sclerosis was observed in the lens of the patient. There was no pathological condition in either the anterior or posterior chamber or the *corpus vitreum*. The fundus of the patient could be seen comfortably.

No treatment was carried out since the anterior iris cyst in the patient did not cause corneal opacity or increase in the intraocular pressure.



Figure 1. Appearance of the cyst before midriatic administration

DISCUSSION AND RESULT

While uveal cysts may be attached either to the iris or the corpus ciliare, they may also be freely present in the anterior chamber (Slatter, 1990; Corcoran and Koch, 1993; Crispin, 1993; Jones and Bedford, 1997). The cyst in our case originated from the anterior surface of the iris and the pupillary margin. In accordance with literature (Bedford, 1980; Slatter, 1990; Corcoran and Koch, 1993; Crispin, 1993) the cyst was partially pigmented. Since the appearance of the cyst was typical (Slatter, 1990; Corcoran and Koch, 1993; Crispin, 1993), it was easily distinguished from intraocular tumours. The tissue of origin was determined by administration of tropikamide, a midriatic. Iris cysts may develop in relation to trauma or uveal inflammation (Slatter, 1990; Corcoran and Koch, 1993; Crispin, 1993). However, since there was no such history in our case, the cyst was assumed to have developed in the congenital stage and grown through the years.

Iris cysts may cause cornea edema by making contact with the endothelial surface of the cornea. When they are large either in size or in number, they can cause an increase in intraocular pressure by obstructing the drainage of humour aqueous from the irido-corneal angle (Bedford, 1980; Belkin, 1983; Slatter, 1990; Corcoran and Koch, 1993; Crispin, 1993). In such cases, the cyst content may be emptied by aspiration (Bedford, 1980; Belkin, 1983; Slatter, 1990; Corcoran and Koch, 1993; Crispin, 1993; Jones and Bedford, 1997). As with human surgery, destruction using cryosurgery or laser surgery is also a treatment option (Shin et al., 2000; Haller et al., 2003). Since there was no such complication in our case, the cyst was left alone.



Figure 2. Appearance of the cyst after midriatic administration

Although there are reports on uveal cysts encountered in dog breeds such as Labrador Retrievers (Bedford, 1980; Corcoran and Koch, 1993), Golden Retrievers, Boston Terriers (Corcoran and Koch, 1993), Great Danes (Slatter, 1990) and Staffordshire Bull Terriers (Bedford, 1980) since there are no previous reports on the Akbash breed, we aimed to present to veterinary practice this case of uncomplicated iris cyst encountered in an Akbash dog.

REFERENCES

- Bedford P.G.C. (1980): Anterior uveal cyst as an unusual cause of corneal pigmentation in the dog. *J. Small Anim. Pract.*, 26, 97–101.
- Belkin P.V. (1983): Iris cysts in cats. *Feline Practice*, 13, 12–18.
- Carter J.D., Mausolf F. (1970): Clinical and histological features of pigmented ocular cyst. *J. Am. Anim. Hosp. Assoc.*, 6, 194–200.
- Collins B.K., Moore C.P. (1991): Diseases and surgery of the canine anterior uvea: In: Gelatt K.N. (ed.): *Veterinary Ophthalmology*. 3rd ed. Lippincott/Williams and Wilkins, Philadelphia. 755–795.
- Corcoran K.A., Koch S.A. (1993): Uveal cysts in dogs: 28 cases (1989–1991). *J. Am. Vet. Med. Assoc.*, 203, 545–546.
- Crispin S.M. (1993): The uveal tract. In: Peterson S.M., Crispin S.M. (eds): *Manual of Small Animal Ophthalmology*. BSAWA, Kingsley House. 173–191.
- Diters R.D., Dubielzig R.R., Augirre G.D. et al. (1983): Primary ocular melanoma in dogs. *Vet. Pathol.*, 20, 379–395.
- Haller J.A., Stark W.J., Azab A., Thomsen R.W., Gottsch J.D. (2003): Surgical management of anterior chamber epithelial cysts. *Am. J. Ophthalmol.*, 135, 309–313.
- Jones R.G., Bedford P. (1997): Abnormal appearance. In: Peiffer R.L., Peterson-Jones S.M. (eds.): *Small Animal Ophthalmology: A problem-oriented approach* W.B. Saunders Company. London. 43–84.
- Massa K.L., Gilger B.C., Miller T.L., Davidson M.G. (2002): Causes of uveitis in dogs: 102 cases (1989–2000). *Veterinary Ophthalmology*, 5, 93–98.
- Peiffer R.L. (1977): Iris cyst in a cat. *Feline Practice*, 7, 15–17.
- Sapienza J.S., Domenech S.F.J., Sapienza A.P. (2000): Golden Retriever uveitis: 75 cases (1994–1999). *Veterinary Ophthalmology*, 3, 241–246.
- Shin S.Y., Stark W.J., Haller J., Green W.R. (2000): Surgical management of recurrent iris stromal cyst. *Am. J. Ophthalmol.*, 130, 122–123.
- Slatter D. (1990): Uvea. In: *Fundamentals of Veterinary Ophthalmology*. 2th ed. Philadelphia, W.B. Saunders Company. 305–337.

Received: 03–09–12

Accepted after corrections: 04–08–25

Corresponding Author

Dr. Murat Saroglu, Istanbul Universtiy, Faculty of Veterinary Medicine, Surgery Department, 34851-Avcilar, Istanbul, Turkey
 Tel. +90 212 4737070, fax +90 212 4737241, e-mail: muratsaroglu@yahoo.com
