Clinical Cases of Glaucoma in Yankasa Sheep

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Abstract

Three clinical cases of unilateral glaucoma in Yankasa breed of sheep are reported. The clinical signs mostly shown by the sheep included anorexia, emaciation, fever, pain, ocular discharges, enlargement of the globe, shallow anterior chamber, corneal edema, conjuctival congestion, visual acuity and loss of vision.
Examination of the affected eyes showed negative pupillary light reflex test, some degree of tension was established by digital palpation and there was no reaction of animal to moving objects. Management of the cases included chemotherapy (antibiotic and adrenergic agonists) and operative procedure (eye enucleation).

Keywords: Glaucoma, Unilateral, Sheep

Introduction

Increase in intraocular pressure in ruminants is generally the result of an impairment in the outflow of the aqueous humour from the anterior chamber. The condition could be caused by a narrowing, a closure or a blockade of the angle of the eye (Watson *et. al.*, 1972; Jensen, 1973; Rufini, 1974). When the mechanism is faulty due to blockage the fluid being formed in the ciliary bodies has no outlet and accumulates in the anterior and posterior chambers of the eyes. This will eventually lead to corneal edema, conjuctival and episcleral congestion and inflammation, pain and vascularisation. Increase in body temperature is evident in secondary glaucoma with progressive body weight loss if not controlled early enough. The representative case histories, physical examination findings, diagnosis and management of the condition are presented.

Materials and Methods

Case one

A ten month-old Yankasa ewe was presented to Usmanu Danfodiyo University Veterinary Teaching hospital (UDUVTH) for emergency treatment because she was suspected to have problem of vision in one eye. She was said to have ocular discharges, rubbing the affected eye against objects and

staggering movements. The condition was noticed two days previously and the animal weighed 12kg.

Physical examination revealed rectal temperature 40.0oC, respiration 32/minute, pulse 105/minute, pain, ocular discharges, enlargement of the globe, corneal edema and conjuctival congestion.

An approximation of intraocular tension was carried out using digital palpation. With the two index fingers placed upon the upper lid, the globe was palpated by an alternating rolling motion of the fingers. Some degree of tension was detected by comparison with the other eye. Glaucoma and traumatic injury to the eye were suspected. A diagnosis of glaucoma was made based on the above clinical signs. The animal was placed on topical application of 2% epinephrine once daily and terramycin injection 4mg intramuscular for three days.

Two weeks later, the sheep was presented again to the VTH with no improvement in vision. The rectal temperature was 39.5°C, pulse 102/minute and respiration 32/minute. Further examination revealed enlargement of the globe, pain and conjuctival congestion. Enucleation was suggested.

Enucleation was carried out with the animal on sternal recumbency under ophthalmic nerve regional anaesthesia. This was achieved by infiltration of 3.0ml of 2% xylocaine at the lower eyelid and medial canthus. An elliptical incision of 1cm from and parallel to the margin of the eyelid was made through the skin and palpebral muscle. By blunt dissection in the direction of the orbital ridge, the orbit was entered. The retrobulbar tissues and intraocular muscles were dissected bluntly and transected as close to the globe as possible. The retractor bulbi muscle, optic nerve and vessels were doubly ligated with chromic catgut size 2/0 and transected. The eyelids were sutured with interrupted sutures using size 3/0 silk. Procaine penicilin (400,000 I.U.) was administered for three days and animal was discharged healthy.

Case two

A one year old Yankasa ram was presented at the UDUVTH because he appeared to have difficulty in vision. The owner also noticed a watery discharge from the left eye for about two weeks. Furthermore, there was change in eating habit and general lethargy.

A physical examination revealed weak emaciated animal weighing about 15kg. The mucosae were pink, rectal temperature 40.5°C, pulse 106/minute, respiration 30/minute, ocular discharges, shallow anterior chamber and cloudy cornea.

On the clinic floor, the test conducted was by observation of the animal reaction to moving objects. When the animal's normal eye was covered with a drape and restraint on standing position and a cotton ball was dropped a few feet ahead of the animal, there was no reaction. In the dark room, a pupillary light reflex test was performed with an overhead lamp directed into the affected eye. There was no pupillary response to light. Thelaziasis, trauma and glaucoma were suspected. Thelaziasis was ruled out because of high body temperature 40.5°C. With the absence of recent wound on the eye trauma was eliminated. Glaucoma was then diagnosed.

Chloramphenicol injection 4mg, intramuscular was given once to the animal. Topical application of 2% epinephrine once daily for three days

and vitamin B complex injection 3mls was administered as a single dose.

Ten days after treatment the animal was presented again to the VTH. The client has observed no improvement of the animal condition; temperature was 38.5°C, pulse 102/minute and respiration 32/minute. Enucleation was considered an option for permanent solution. Details of enucleation procedure has been described in case one. The animal's condition improved considerably and the sheep was sold out two months post surgery.

Case three

A five-month-old female Yankasa sheep was presented to the Veterinary Teaching Hospital with the chief complaint of swollen left eye and poor vision. She was said to have reduced in feeding habit and frequently on sternal recubency. A consistent ocular discharge was observed by the client. No history of trauma was realised by the client.

Physical examination findings showed temperature 41.0°C, pulse 105/minute, respiration 32/minute, body weight of 10kg. Anorexia, pain excessive lacrimation, inflammation of the conjuctiva, low visual acuity and enlargement of the globe.

In the dark room, a pupillary light reflex test was conducted on both eyes. When light source was introduced directly with an overhead lamp into each of the eyes independently, the right eye pupil increased in size while there was no pupillary response to light by the left eye. Based on the clinical findings a diagnosis of glaucoma was made.

The sheep was placed on 400,000 I.U. procaine penicillin daily for five days. Topical application of 2% epinephrine, Vit. B-complex 5mg was given for three days. On the fifth day post-treatment the animal started eating regularly but no improvement in vision. Enucleation was performed to solve the problem permanently. Details of enucleation procedure has been described in case one above. Three months later the client reported that the animal was doing fine and pregnant.

Results and Discussion

Glaucoma in man or animal is not in itself a disease entity. It consists of a variety of groups of conditions which have as their common feature an abnormal elevation of intraocular pressure. This group may be referred to as glaucoma (Uberreiter, 1959; Magraine, 1977; Kersjers, 1985). Glaucomas that cannot be controlled by medication may require surgery (Jensen, 1973). The clinical signs shown by the animal in cases one and two described above are typical of those seen in glaucoma. This is further confirmed by the pupillary light reflex test, digital palpation and the animal reaction to moving objects. There were no pupillary response to light in all cases. In cases one and two, when the globe was palpated by an alternating rolling motion of fingers, some degree of tension was established when compared with the other eye. None of the three animals reacted to the objects during this test, thus indicating partial blindness. Examination of the eye is of course difficult in animals. A true evaluation of pain, light and dark adaptation of field of vision and percentage of vision is consequently impossible. Veterinary clinicians then should not be guilty of assuring the client that this animals is blind (Uberrieter, 1959, Teng, 1964; Kersjets, 1985; Lavach, 1990). The rationale for use of epinephrine in the

control of ocular discharges was based upon its vasoconstrictor effect. Tropically applied epinephrine in all the three cases produced a gradual ceasation of ocular discharges.

In all cases, enucleation of the eyeballs seemed to be effective as it involved the removal of the globe together with the bulber and palpebral muscles, conjuctiva, nictating membrane and lacrimal gland. After surgery the animal's health status and feeding habits increased considerably and stitches were removed. Enucleation is not a substitute in treatment of glaucoma. It is employed as a last resort when medical treatment fails and it is usually chosen for the economic convenience of the owner.

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