Short Communication

MANAGEMENT OF RETROBULBAR COENURUS CYST IN NELLORE BROWN SHEEP

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ABSTRACT

An adult Nellore brown sheep was presented to Veterinary hospital with a history of swollen unilateral protrusion of left eyeball with congestion of conjunctival mucous membrane, exophthalmos condition since 5-6weeks. Clinical examination revealed blindness due to chronic keratitis and on palpation found a large fluid filled cyst in the left eye. With the surgical intervention the cyst was removed successfully along with its membrane from the retrobulbar region of the left eye and on parasitological examination it was diagnosed as Coenurus gaigeri cyst. Surgical intervention-involved treatment coupled with antibiotic therapy was proven to be an efficient way of managing retrobulbar coenurus cases.

Key words: Coenurus cyst, Exophthalmos, Retrobulbar region, *Taenia multiceps gaigeri*

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INTRODUCTION

Coenurus gaigeri is the larval stage of *Taenia multiceps gaigeri*, which belongs to the class Cestoda of the family Taenidae and genus Multiceps (Soulsby, 1982). These parasitic infections result in asymptomatic focal lesions which often persist throughout the life span of the host (Sharma and Chauhan 2006). Coenurosis caused by *Coenurus gaigeri* is commonly reported in shoulder, thigh (Madhu *et al*., 2014), neck, diaphragm, heart, kidney, uterus, rectum, spleen, urinary bladder, lumbar region (Oge *et al*., 2012) and lower eyelid (Raidurg and Reddy 2009). Coenurosis is a major parasitic disease in small ruminants throughout the world (Sadarnashipur and Lalgola 1991; Oryan *et al*., 2010). Surgical management of coenurosis in a goat has been described by (Ahmed and Haque 1975; Nandi and Pal 2001, Gahlot and Purohit 2005, Biswas 2013). The cystic fluid provides nutrients that are necessary for the

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larval development and plays an important role in the life cycle of tape worm (Juyi *et al*., 2013). Important biochemical constituents of cystic fluid include aminoacids, organic elements like calcium, sodium, potassium, zinc, selenium and biochemical substances like urea, creatinine, uric acid, cholesterol, glucose and triglycerides (Roberts *et al*., 2013, Pakala *et al*., 2016).

This article describes the diagnosis and management of retro-bulbar cyst of *Coenurus gaigeri* in Nellore Brown adult sheep.

MATERIALS AND METHODS

An adult Nellore brown sheep was presented to Veterinary Dispensary Peddaputta of Kadapa district with the history of unilateral protrusion of left eyeball, blepharitis, and congestion of conjunctival mucus membrane (Fig.1). Physical examination of left eye region revealed presence of a large fluctuating fluid filled cyst with distinct dimensions. With the surgical intervention the cyst was removed. The cyst contained huge number of white clusters of scolices. (Fig.2 and Fig.3). The fresh and unstained scolices of the cyst were examined under microscope after applying sufficient cover-slip pressure to force the hooks to lie flat. Microscopic view of a single scolex revealed the characteristic rose-thorn shaped hooks (Fig. 4). The collected cyst was examined to confirm the identity and to measure their morphological characteristics. The morphological characteristics of each cyst was measured. Initially the volume of cyst was measured by placing it in a measuring cylinder filled with tap water. Later, the cyst was laid on a flat surface to count the number of scolices and their arrangements in clusters. For final confirmation, a piece of larval membrane containing a cluster of scolices was placed on a glass slide pre-added with saline drops, tight pressed with coverslip, and examined under light microscope. The metacestode was identified as coenurus larvae as per the descriptions of Soulsby (1982).

RESULTS AND DISCUSSION

The coenurus cyst found in the present study was medium sized with few scolices. The observed ranges of average volume of cysts, number of scolices, mean intensity of cysts, and no. of clusters per cyst are in complete agreement of the results of Christodoulopoulos *et al.* (2015). The cerebral coenurosis in sheep can reach 95 cm3 in size and can contain up to 700 scolices (Schuster *et al*., 2010). Similarly, Schuster *et al.* (2010) found that the cyst sizes vary between 1 and 40 cm3 with the diverse number of scolices per cyst. The gross cytoplasmic appearance of the retrobulbar cystic fluid was foamy. The location of coenuri outside of the central nervous system suggests that there may be a different strain or genetic variant of *Taenia multiceps* (Varcasia *et al*., 2022).

The remaining sheep in the flock were administered with Fenbendazole and Praziquantel @ 7.5 mg/kg body wt. orally and herbal liver tonics to relieve stress and increase immunity. Affected sheep was treated with Ceftriaxone @ 10 mg/kg. body wt. and Meloxicam @ 0.2 mg/kg. body wt. was

administered for 3 days post operatively and local antiseptic dressing for surgical wound with dilute liquid povidone was done for one week. The animal recovered in 15-20 days. As per the recommendation of Venkatesan *et al.* (2018), the coenurosis control program should include, deworming the stray dogs, and community dogs management, stray dog control programs etc.

Coenurosis has emerged as a major parasitic disease of zoonotic importance in developing nations due to inadequate measures for proper disposal of contaminated carcasses (Kheirandish *et al*., 2012). Chronic parasitic infections are more commonly seen in adult animals and these animals are the source of infection for other animals and human beings. *Coenurus cerebralis* cysts are often localised in the nervous system including brain and spinal cord (Haridy *et al*., 2013; Soundararajan *et al*., 2016). However, their occurrence in the sub cutaneous and muscular tissues and other organs has also been recorded in goats (Oryan *et al.,* 2010). As the function of the vital organs was affected in non-cerebral form of coenurosis, it often results in stunted growth and wasting in small ruminants (Ramadan *et al*., 1973).

CONCLUSION

The present study, surgical removal of the retrobulbar coenurosis cyst followed by treatment with Ceftriaxone (Monocef) @ 10 mg/kg. body wt. and Meloxicam @ 0.2 mg/kg. body wt. provided to be effective for the surgical and therapeutic management of retrobulbar coenurosis in sheep.

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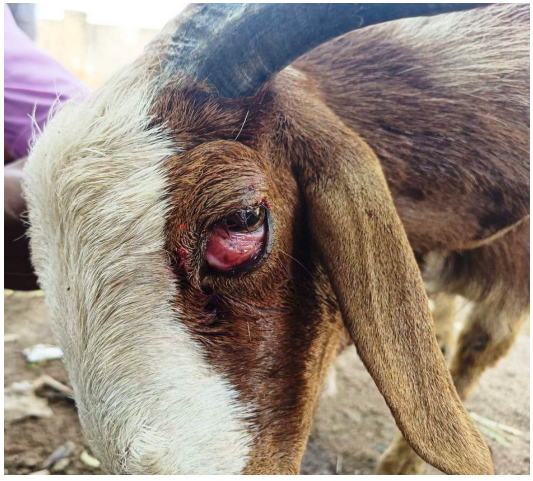

Fig. 1. Congestion of left eye with Unilateral protrusion of eyeball

Fig. 2. Removed Retro bulbar cyst

Fig. 3. Cyst showing clusters of scolices

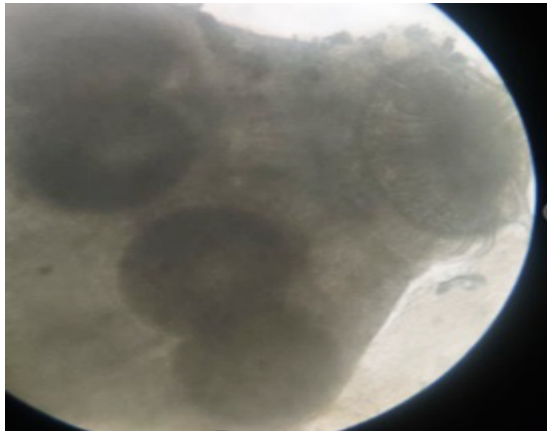

Fig. 4. Microscopic view of scolex with rose thorn shaped characteristic hooks