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CASE STUDY

Surgical Management of Non-Cerebral Coenurosis in Local Goat

G. N. Bhadke[1], S. F. Nipane*[1] and V. B. Hatwar[1]
1Livestock Development Officer,
State Veterinary Dispensary Grade I Virsi, Sakoli, Bhandara
Taluka Veterinary Mini Polyclinic, Sakoli, Bhandara, Maharashtra, INDIA, 441902
***Corresponding Author:** dr_sureshvet12@rediffmail.com
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Abstract:

A goat with unilateral mandibular swelling presented with a history of weakness, dullness in appearance, pain, unable to chew since last 5 days. The visual examination and palpation revealed the presence of a coenurus cerebralis cyst. Both the cysts were removed with a surgical intervention using local anesthesia. The goat regained their body weight and recovered completely within 1 month period. Treatment coupled with antibiotic therapy was an efficient way of managing non-cerebral coenurosis cases. The removed cyst was identified as a non-cerebral coenurus cyst based on the characteristic morphological features, such as the presence of the transparent bag filled with watery fluid surrounded by a thin, fibrous, and semi-opaque transparent membrane with numerous scolices attached to its inner surface.

Keywords: Goat, Non-cerebral coenurosis, scolices.

Introduction:

The cestode *Taenia multiceps* is a causative agent for coenurosis in sheep and goat affect the central nervous system (CNS) particularly the brain of sheep and goats but rarely in the spinal cord also called *Coenurus cerebralis.* Coenurosis is a serious disease responsible for high economic losses in goat farm, in addition to its zoonotic impact. *C. cerebralis* considered as the principal cause for nervous manifestations in goats (Desouky *et al.,* 2011). The parasite responsible for non-cerebral coenurosis was initially named Teania *Multiceps* in goats. This case study reports the non-cerebral form of coenurosis in mandibular areas. Coenurosis, is a disease caused by the larval stages of *Taenia multiceps* cestodes that inhabits the small intestines of carnivores as definitive hosts. Coenurosis commonly occurs in two forms viz. cerebral form caused by invasion of the ovine brain by larval stages of *Taenia multiceps* and the non-cerebral form caused by the invasion of intramuscular and subcutaneous regions. The cystic larval forms of coenurus are found in the central nervous system of intermediate hosts, which include mainly sheep and goats. These species become intermediate hosts by ingesting the feed contaminated with Taenia

eggs. The term 'non-cerebral coenurosis' or 'muscular coenurosis' refers to the occurrence of coenurus cysts in locations of a host other than the brain and spinal cord (Christodoulopoulos *et al*., 2016).

Case History and Clinical Examination:

A goat aged 1 year was presented to State Veterinary Dispensary Grade I Virshi of Bhandara district with a history of painful and fluctuating swellings on left sides of the mandible region (Fig. 1). The clinical signs observed were dullness, weakness, and inappetence (difficulty in chewing the grass due to painful and palpable swellings of cysts in the mandibular region). The description of goat revealed no deworming history and the goat was not able to chew grass for 5 days. After visual examination and palpation, the swelling was identified as a cyst.

Surgical Intervention and Laboratory Observation:

This case study reports the non-cerebral form of coenurosis (mandibular region). Treatment was performed through surgical intervention by providing under 2% lignocaine hydrochloride local anaesthesia along with manual restraining and cysts were extracted by careful dissection of the surrounding tissues. The collected cysts were examined to confirm their identity and later, the cyst was laid on a flat surface to count the number of scolices and their arrangements in clusters (Fig. 2). 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) and Loos-Frank (2000).

Fig. 1 Skin having subcutaneous cyst

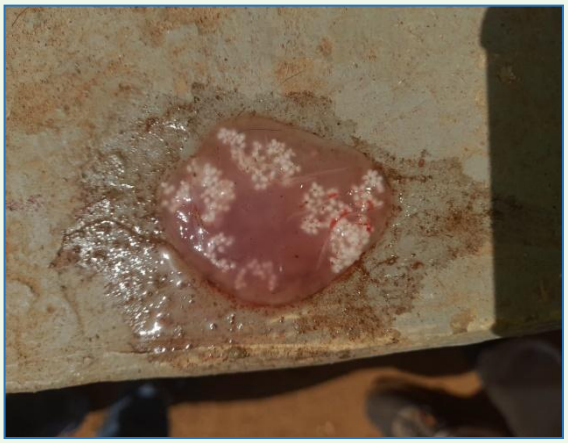

Fig. 2 Coenurous cyst (removed)

The identified coenurus cysts were fluctuating and found subcutaneously on the left mandibular regions. The removed cysts were identified as coenurus cysts based on characteristics like the presence of a bladder filled with watery fluid and a thin and transparent wall with numerous scolices attached to its inner surface (Soulsby, 1982). Likewise, Shiva Prakash and Reddy (2009) also found multiple subcutaneous cysts in the neck, pre-scapular region, abdomen, and limbs because of the extra-cranial location of these coenurus cysts.

Treatment:

Albendazole or combinations of anthelmintics (Fenbendazole and Praziquantel) were useful in coenurosis (Ghazaei, 2005). Goat was treated with suspension of Fenbendazole and Praziquantel @ 7.5 mg per kg body weight orally and liver tonics were given to increase the immunity as well as appetite. Albendazole or combinations of anthelmintics (Fenbendazole and Praziquantel) were useful in coenurosis (Ghazaei, 2005). A week later, a farm review verified that the goat was normal in terms of appetite and normal behavior.

Conclusion:

The primary clinical signs in non-cerebral coenurosis consist of weight loss, lethargy, and decreased appetite, accompanied by visible skin lumps resulting from subcutaneous cysts. The examination of the aspirated capsules under macroscopic analysis showed the presence of *Taenia* species. This case study demonstrates that surgical intervention combined with antibiotic treatment is an effective approach for managing non-cerebral coenurosis.

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