Coenurus gaigeri cyst in the thigh of a goat and its successful management

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Abstract A 11 month old female goat was presented to Polyclinic, IVRI with the history of swelling in the left hind leg on the inner aspect of thigh and inguinal region. Physical and radiological examination revealed a large fluctuating fluid filled bladder with distinct dimension. The cyst was successfully removed along with its membrane and parasitological examination revealed it as a *Coenurus gaigeri*, the intermediate stage of *T. multiceps gaigeri*. The animal recovered completely by 10th post-operative day without any complications. This is being described in detail as under.

Keywords *Coenurus gaigeri* · Thigh of goat · Surgical management

Introduction

Coenurosis is caused by *Coenurus gaigeri*, affects caprine, ovine and bovine and occurs both solitary as well as a generalised cyst (Shastri et al. 1985; Dey et al. 1988 and Patro et al. 1997). However, solitary cystic involvement affecting thigh and inguinal region with unilateral affection are rare in literature. Metacestodes of other cestodes of goat such as *Coenurus cerebralis*, *Cysticercus tenuicollis*, *Cysticercus ovis*, and hydatid cysts are more common. *C. gaigeri* is reported in the thigh, neck muscle, diaphragm, heart, kidney, uterus, rectum and urinary bladder of

domestic goats (Varma and Malviya 1989), thigh muscle of Samba (Varma et al. 1994) and eye. Radiological diagnosis and surgical treatment of the condition in goats have been described (Ahmed et al. 1974; Ahmed and Haque 1975). Ramadan et al. (1973) described the clinic-pathological effect of a massive natural infection of *C. gaigeri* in a Sudanese goat affecting the intermuscular and subcutaneous connective tissues. This article presents a case of *C. gaigeri* in the thigh muscle of a non-descript goat and its successful surgical management.

Materials and method

A 11 month old female goat was referred to Polyclinic, IVRI with the history of swelling in the left hind leg on the inner aspect of thigh and inguinal region (Fig. 1) leading to dragging of the affected limb and unable to bear weight. On clinical examination rectal temperature (102.2° F), heart rate (70 per min) and respiratory rate (34 per min) were found within normal limits. Physical examination revealed a large fluctuating fluid filled bladder with distinct dimension. On aspiration a clear fluid was observed and radiography of the affected part confirmed the fluid filled structure as a clear demarcation from its surroundings (Fig. 2). On the basis of clinical signs and radiological diagnosis, it was decided to remove the cyst surgically.

Surgery was done under local infiltration with 2 % lignocaine hydrochloride solution (Xylocaine®, AstraZeneca) after aseptic preparation of the surgical site. Cyst was removed after separating it from muscular attachments (Fig. 3) and tincture of iodine was applied and the skin wound was closed by applying interrupted horizontal mattress sutures using braided silk. Postoperatively, the animal was injected with a combination of Amoxycillin

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Fig. 1 Gross swelling on the inner aspect of the *left* thigh region

Fig. 2 Radiographic appearance of coenurus cyst, (Arrow indicating clear line of demarcation between cyst and its surrounding structures)

and Cloxacillin (Vetmox[®], Geevet Remedies) 500 mg for 5 days and Meloxicam (Melonex[®], Intas Pharmaceuticals Ltd) @ 0.5 mg/kg body weight for 3 days along with antiseptic wound dressing of the operative site with povidone iodine for 10 days. Single dose of ivermectin (Hitek[®], Virbac Animal Health India Pvt Ltd) 1 ml was injected subcutaneously on 6th day postoperatively following antibiotic and NSAID coverage. An uneventful recovery was

noticed on 10th day and the sutures were removed on the 12th day postoperatively without any complications.

Results and discussion

Postoperatively the swelling subsided and the animal resumed normal posture and gait. The cyst was removed in intact and it was large bladder like having 22 × 13.2 cm dimensions containing large amounts of fluid with numerous macroscopic invaginated scolices (Fig. 4). Microscopic view of single scolex showed typical taenid hooks (Fig. 5) were characteristic of those of coenurus, and being extra cranial, the cysts were identified as *C. gaigeri*, the intermediate stage of *T. multiceps gaigeri*.

Coenurosis (gid or sturdy) has been principally a fatal disease of ungulates, especially sheep, caused by larval forms of *Taenia multiceps*. The cystic larvae (*C. cerebralis*) essentially develop in the brain or spinal cord and predominantly affect normal functioning of the central nervous system (CNS) of the parasitized host including man (Aiello and Mays 1998; Sharma and Chauhan 2006). Contrary to above, occasionally aberrant sites of predilection of the metacestode, especially in goats, with an alternate name (*C. gaigeri*), have been documented (Bhalla and Negi 1962; Sharma et al. 1995; El-Sinnary et al. 1999; Sharma and Chauhan 2006). Despite of similarity in their morphological features and resulting adult worms from them, conflicting views exist on their specification (Elowni et al. 1990; Varma and Malviya 1989; Patro et al. 1997).

In a majority of coenurie affected goats, the cysts anchor, develop, mature and cause asymptomatic focal lesions in extra cranial aberrant sites. The lesions often persist throughout the life span of the host (Sharma and Chauhan 2006). This seems to be governed by multiple factors, including the quantum and periodicity of infection

Fig. 3 Intraoperative view of membranous covering of the cyst freed from its muscular attachment

Fig. 4 Coenurus cyst containing scolices in clusters along with its membranous covering

Fig. 5 Microscopic view of coenurus cyst showing a single scolix with hooks

intake, subsequent in situ ongoing events of the host-parasite interaction, age and acquired immune status of the goat, etc. Chronic infections are more prevalent in the goats, aged between one to two years, as reported herein (Palmer 1976; Sharma et al. 1998). Such animals are potentially important source of the disease in growing animals and/or of zoonotic significance. Animals slaughtered between one to two years of age are preferred for human consumption. Poor awareness about the use of

incinerators for disposal of contaminated carcass left over further aggravates the situation in a majority of South Asian countries. Goats, being intermediate host usually get the infection from the dog's excreta therefore the treatment of dogs in and around the farms for tapeworm should be made. Entry of street dogs to goat peddocks should be prevented for control of this ailment.

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