



Case Report

Multiple Subcutaneous Cysts (*Coenurous gigari*) in a Goat

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ABSTRACT

Coenurus gaigeri is a cyst forming tape worm of goats, and it located in the subcutaneous tissue of the animals. A six-month-old, non-descriptive female goat was referred with the history of subcutaneous swelling in all over the body since one month. Soft fluid filled edematous swelling was noticed on submandibular region, both sides of the neck and thoracic wall, last two intercostals space of the right side and behind the sternum. Microscopic examination of aspirated cystic fluid revealed motile larvae of *Coenurous gigari*. Thus, the disease is concerned to zoonotic importance periodical deworming, proper disposal of faces, and examination of carcass and appropriate cooking of meat can prevent the acquiring disease by human.

Key words: *Coenurus gaigeri*, Goat, Subcutaneous cyst, *Taenia spp.*

INTRODUCTION

Goats are affected by different parasites; each parasite has its own preferred location within an animal and causing specific damage to the host. Some of the endoparasites were decrease the economic values of the animal. Coenurosis are not only zoonotic but are also important parasitic disease which cause severe tissue damage, reduction in production, losses in breeding and considerable economic loss due to condemnation of the infected organs of the herbivorous animals and even death of the animals in cases of heavy infestations (Radfar *et al.*, 2005). Similarly, *Coenurus gaigeri* cause subcutaneous cyst and affects meat and hide values of the animals. *Coenurosis* is caused by *Coenurus gaigeri* affects caprine, ovine and bovine, and it arise both solitary and a generalized cyst (Shastri *et al.*, 1985; Dey *et al.*, 1988; Patro *et al.*, 1997). *Coenurus gaigeri* is a larval stage of *Taenia multiceps gaigeri* in goats (Oryan *et al.*, 2010). Adult stage of *Taenia multiceps* lives in the small intestine of the dogs (Soulsby, 1982) and the larval stage affect the central nervous system (CNS), particularly the brain of sheep, goats and sometimes cattle, i.e. known as *Coenurus cerebralis*. However, the cysts may also reach maturity in other organs like subcutaneous and intramuscular tissues (Bhalla and Negi, 1962; Sing and Sing, 1972; Sharma *et al.*, 1995). Presences of cyst in intramuscular and/or subcutaneous tissues are referred to as *Taenia multiceps gaigeri* (Boch and Supperer, 1983) or *Multiceps gaigeri*

(Hago and Abu-Samara, 1980) or *C. gaigeri* (El Sinnari *et al.*, 1999). Cysts located in muscles may cause muscular pain or impaired function of the organs, which are involved in the body. The morphological features of the coenuri occurring in the brain and the other tissues have been reported to be similar (Soulsby, 1982). *C. gaigeri* and *C. cerebralis* are not a different species, i.e. *C. gaigeri* being synonyms for the larval stage of *T. multiceps* in goat. Because the present case had multiple subcutaneous cyst i.e. *Coenurous gigari*, it was aimed to report in a goat.

Case presentation

A six-month-old female non-descriptive goat was referred to Teaching Veterinary Clinical Complex, Veterinary College and Research Institute Orathanadu Thanjavur District with the history of swelling was noticed on the skin one month back and it was gradually spread to the body surface since one month. Owner also reported the animal was grazing in free ranging system. On clinical examination, vital parameters found to be normal. On palpation soft fluid filled swelling (approximately 5 to 15 cm diameter) was noticed in submandibular, thoracic, behind the sternum, both sides of prescapular and last two intercostals space of right side (Fig. 1). By aspiration of cystic fluid are clear transudate nature with plaques was noticed. Collected cystic fluid having numbers of small size white colour plaques and the plaques was placed on the clean microscopic slide, cover

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Fig 1: Cysts on prescapular, shoulder and submandibular (A) and Cyst in prescapular, shoulder and thoracic (B)

slip was placed and examined under 10x and 40x magnification. On microscopic examination motile larvae of *Coenuri* (Fig. 2) with multiple scolex (Fig. 3) was noticed. Based on the morphological feature of the coenuri in the present case was confirmed as *Coenurus gigari* in a goat.

DISCUSSION

Over a period various authors reported the presence of *Coenurus* cyst in the muscle and subcutaneous tissue in goat as *Taenia gaigeri* (Boch and Supperer, 1983), *Multiceps gaigeri* (Hago and Abu-Samara, 1980) and *C. gaigeri* (El Sinnari *et al.*, 1999). Previously, it was thought that there were different species involved in the pathogenesis of *Coenurus* cyst formation in CNS and muscles and subcutaneous tissue, but Reza Kheirandish *et al.* (2012) reported *C. gaigeri* and *Coenurus cerebralis* are not different species because both them having similar morphological feature. Soulsby (1982) and Desouky *et al.* (2011) said that the scolex has four cup shaped suckers and bears a rostellum which has two rows of hooks. The number of hooks in each scolex is variable, ranging from 22 to 32. Although *T. gaigeri* is morphologically similar to *T. multiceps* but its scolex has one rostellum with a double crown of 24 to 28 hooks. The adult stage of *Taenia multiceps* lives in the small intestine of dogs (Soulsby, 1982) and the larval stage *Coenurus* is commonly affects the central nervous system (CNS), particularly the brain and gives rise to the neurological



Fig 2: Larvae of *Coenurus gigari* – multiple scolex (10X).



Fig 3: Larvae of *Coenurus gigari*- single scolex with hook (40X).

signs (Soulsby, 1982). In addition to infecting the brain, the larval stage also develops in the subcutaneous tissues, muscles and some times in the body cavities (Schuster *et al.*, 2010). The cysts are fluctuating, cool, and covered with hairless skin. Sometimes they feel firm rather than fluctuation distributed all over the body, including the face, but mostly in the thighs and shoulders. Depending on the cyst location, there may be impede with locomotion, feeding, or function of internal organs. The eggs are passed in the infected dogs feces, they are immediately infective and on ingestion by herbivores the oncospheres spread from the eggs. The oncospheres are carried in blood circulation to migrate to the brain, spinal cord and continue spread to intramuscular and visceral organs and subcutaneous tissues. The *Coenurus* cysts develop slowly over several months to become mature in six to eight months and result in the onset of clinical signs. As the cyst matures, it develops into a large, delicate, thin translucent fluid containing cyst, measuring commonly about 5-6 cm in diameter. The survival of the taenia eggs in pasture, distribution of the final host and grazing behavior of the intermediate hosts are factors that influence the rate of infection (Desouky *et al.*, 2011). In conclusion, being the diseases is concerned to zoonotic importance, periodical deworming, proper disposal of faecal material, examination of carcass and appropriate cooking of meat can prevent the acquiring disease by human.

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REFERENCES

- Bhalla NP and MS Negi, 1962. Occurrence of larval *Multiceps multiceps* over the heart of a goat. *Indian Vet J*, 39: 55-56.
- Boch J and R Supperer, 1983. *Veterinary Medicine Parasitology* 3rd edition, Paul Parey Berlin.
- Desouky EA, AI Badawy and RA Refaat, 2011. Survey on coenurosis in sheep and goats in Egypt. *Veterinaria Italiana*, 47: 333-340.
- Desouky EA, AI Badawy and RA Refaat, 2011. Survey on coenurosis in sheep and goats in Egypt. *Veterinaria Italiana* 47: 333-340.
- Dey PC, DC Nayak, DN Mohanty, S Nayak and GM Patnaik, 1988. A brief note on massive infection of *coenurus gaigeri* cysts in a desi goat. *Indian Vet J*, 65: 166.
- El Sinnari A, MH Tageldin and HS Sumri, 1999. Outbreak of coenurosis (*Taenia* species) in Anglonubian goats in the Sultanate of Oman. *Vet Rec*, 144: 296-297.
- Hago BED and MT Abu-Samara, 1980. A case of *Multiceps gaigeri* coenurosis in a goat. *Vet Parasitol*, 7: 191-194.
- Nooruddin M, AS Dey and MA Ali, 1996. Coenurosis in Bengal goats of Bangladesh. *Small Rum Res*, 19: 77-81.
- Oryan A, S Nazifi, H Sharifiyazdi and Ahmadnia, 2010. Pathological, molecular, and biochemical characterization of *Coenurus gaigeri* in Iranian native goats. *J Parasitol*, 96: 961-967.
- Patro DN, B Suhani, DK Sahoo, SK Nanda, PK Pradhan and BC Nayak, 1997. Incidence of generalised *Coenurus gaigeri* infection in a goat farm. *Indian Vet J*, 74: 68-69.
- Radfar MH, S Tajalli and M Jalalzadeh, 2005. Prevalence and morphological characterization of *Cysticercus tenuicollis* (*Taenia hydatigena cysticerci*) from sheep and goats in Iran. *Vet Arhiv*, 75: 469-476.
- Reza Kheirandish, M Sami, S Azizi and M Mirzaei, 2012. Prevalence, predilection sites and pathological findings of *Taenia multiceps coenuri* in slaughtered goats from south-east Iran. *Onderstepoort J Vet Res*, 79: 1-5.
- Schuster RK, S Sivakumar and T Wieckowsky, 2010. Non-cerebral coenurosis in goats. *Parasitol Res*, 107: 721-726.
- Sharma DK and PPS Chauhan, 2006. Coenurosis status in Afro-Asian region: A review. *Small Rum Res*, 64: 197-202.
- Sharma DK, NK Sanil, MK Agnihofri and N Singh, 1995. Subcutaneous coenurosis in Barabari goat. *Indian Vet J*, 72: 1203-1205.
- Shastri UV, MA Ghaffor and MA Ghaffor, 1985. A note on a massive natural infection of *coenurus gaigeri* cysts in a goat. *Indian Vet J*, 62: 615-616.
- Sing KP and SP Sing, 1972. Occurrence of *multiceps* cysts in the lymph node of goat. *Indian Vet J*, 49: 1156-1157.
- Soulsby EJJ, 1982. *Helminths, Arthropods and Protozoa of Domesticated Animals*. 7th edition. Bialliere Tindall, London.