

## Case Study

# Clinical Coenurosis (*Coenurus cerebralis*) in Harri Sheep in Mecca Region of Saudi Arabia: A Case Report

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**Abstract**

This study aims to investigate clinical and pathological findings of a clinical *Coenurus cerebralis* case in a 20 months-old Harri female sheep in turaba area at Taif province. Clinical examination of the sheep revealed incoordination, irregular gait, failure to hold the head straight, leftward head tilt, and circling. The animal was diagnosed with (*C. cerebralis*) and euthanasia was recommended. The postmortem findings demonstrated a multiple cyst as white clusters attached to the internal layer of the cyst over the caudal portion of the cerebellum within the cranium. The cyst caused compression over the ventral portion of the left cerebral hemisphere.

In conclusion, we found it beneficial to present the clinical and pathological findings of this ewe with *C. cerebralis* infection which is known to be a common clinical entity among sheep.

**INTRODUCTION**

Coenurosis (Gid) is a disease caused by, the larval stage of *Taenia multiceps*, particularly affects sheep and goats [1,2]. In 80-90% of cases, the cyst is located in one cerebral hemisphere, whilst in 5-10% of cases, it is localized in the cerebellum; rarely it involves two sites in the brain of the affected animal. The clinical signs of the disease develop when the CNS of the sheep/goat is invaded by the cyst [3,4]. Clinical syndrome is based on 10 location and size of the *Coenurus* cyst in the brain [3]. It can occur in both acute and chronic disease form. Acute Coenurosis occurs during the migratory phase of the larvae, usually about 10 days after the ingestion of large numbers of the tapeworm eggs. Young lambs/kids aged 6-8 weeks are most likely to show signs of acute disease and the signs are associated with an inflammatory and allergic reaction. There is transient pyrexia, and relatively mild neurological signs such as listlessness and a slight head aversion. Occasionally the signs are more severe and the animal may develop encephalitis, convulse and die within 4 - 5 days [5].

Most of the cysts are located in the cerebral hemispheres and spinal cord, but they rarely invade the subcutaneous and intramuscular tissues along with other organs [6]. Symptoms vary depending on the cyst's location, size, and compression of the brain [6,7]. While initially causes purulent meningoencephalitis, later as the cyst grows, it leads to central nervous system symptoms resulting in death [8]. Most of the characteristic clinical findings are observed 2-8 months after the intake of pathogen [9].

Clinical signs manifested by the infected animals include circling, head tilt towards the side of the cyst location, incoordination and uncontrolled movements, ataxia, failure to hold the head straight, teeth grinding, salivation, paresis, convulsions, and cerebral atrophy [10].

**MATERIALS AND METHODS****Study area**

Mecca region is located in western Saudi Arabia and has an extended coastline. Its capital is Mecca (also transliterated as Makah), the holiest city in Islam, and its largest city is Jeddah, which is also Saudi Arabia's main port city. The third major city is Taif, where this case is reported.

**Case history**

Two 20- months -old female Harri sheep were clinically examined at the field. History was taken from the owner and the gross examination showed, incoordination, failure, circling to hold the head straight. As a result of the systemic clinical examination of the two animals. *C. cerebralis* was suspected and monitoring is recommended, during examination one animal fell to the ground in an upside down manner and hit the head severely onto the ground with convulsions that extended for few minutes. One animal was slaughtered in the Islamic way (i.e. severing the Jugular veins, carotid arteries, trachea and esophagus by a sharp knife without stunning) for dissection purposes. Postmortem was performed and the cranium dissected.

## RESULTS AND DISCUSSION

It has been reported that, the size and location of the *Coenurus* cysts influence the clinical symptoms shown by the infected animal species [6]. Animals usually tilt their head towards the side where the cyst is located as shown in (Figure 1). The predilection site of *Coenurus* cysts in most cases is the central nervous system and spinal cord. In our case, the cyst was located in cerebellum leading to severe clinical signs such as head tilt and circling. However differential diagnosis from copper and magnesium deficiencies is needed when only clinical signs are used in diagnosis

## CLINICAL FINDINGS

The examined two animals showed symptoms of irregular gait, failure to hold the head straight and circling and this is found to be in line with [3,4], who stated that, clinical signs of the disease develop when the CNS of the sheep/goat is invaded by *Coenurus cerebralis* cyst.

In our case no other abnormal clinical manifestation was



**Figure 1** Animal reveals failure to hold the head straight.



**Figure 2** Multiple scolices as white clusters attached to the internal layer of the cyst (arrows).

observed. Animals showed normal appetite, normal body temperature, no enlarged lymph nodes and the ruminal movements are within the physiological limits. This might be attributed to what is mentioned by [5,6] that, symptoms vary depending on the cyst's location, size, and level of compression in the brain.

## POSTMORTEM FINDINGS

Postmortem findings showed no pathological findings in the internal organs. However, dissection of the cranium exhibited multiple cyst as white clusters attached to the internal layer of the cyst over the caudal portion of the cerebellum (arrows at Figure 2), Furthermore, cyst formation occupied the entire caudal hemisphere where the brain is thoroughly affected. Although in Previous [10] cerebral atrophy has been reported, but this is not the same as in the postmortem findings observed in our case.

In conclusion, clinical symptoms of *C cerebralis* were observed in this Harri breed herd and being verified on the basis of pathological lesions. The owner lost many heads due to this disease, and we think that it would be appropriate to increase our awareness as well as precaution measures for prevention of the spread of the disease in Saudi Arabia

## REFERENCES

- Oge H, Oge S, Gonenc B, Ozbakis G, Asti C. Coenurosis in the lumbar region of a goat: a case report. *Veterinari Medicina*. 2012; 57: 308-313
- Varcasia A, Tamponi C, Toscirri G, Pipia AP, Dore F, Schuster RK, et al. Is the red fox (*Vulpes vulpes*) a competent definitive host for *Taenia multiceps*? *Parasit Vectors*. 2015; 8: 491.
- Edwards GT, Hackett F, Herbert IV. *Taenia hydatigena* and *Taenia multiceps* infections in Snowdonia, UK. The role of hunting dogs and foxes as definitive hosts, and of sheep as intermediate hosts. *British Veterinary Journal*. 1979; 135: 433-439
- Avcioglu H, Terim KA, Yildirim A, Clinical, morphological and histopathological features of bovine coenurosis: case reports. *Revue Méd. Vét*. 2012; 163: 295-298.
- Skerritt GC. Coenurosis. In: *Diseases of Sheep*. 2nd Edition. Martin, W. B. and Aitken, I. D. Blackwell Scientific Publications, Oxford. 70pp, 1991.
- Sharma DK, PPS Chauhan. Coenurosis status in Afro-Asian region: A review. *Small Rumin Res*. 2006; 64: 197-202.
- Güçlü F, U Uslu, Ö Özdemir. Bilateral bone perforation caused by *Coenurus cerebralis* in a sheep: case report. *T Parazitol Derg*. 2006; 30: 282-284.
- Christodouloupoulos G, Two rare clinical manifestations of Coenurosis in sheep. *Vet Parasitol*. 2007; 143: 368-370.
- Gül Y, M İssi, S Özer. Clinical and pathological observations of flock of sheep showing epileptoid spasm related to Oestrosis and Coenurosis. *F Ü Sağlık Bil Derg*. 2007; 21: 173-177.
- Yoshino T, E Momotani. A case of bovine Coenurosis (*Coenurus cerebralis*) in Japan. *Jpn J Vet Sci*. 1988; 50: 433-438.

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