CEREBRAL EQUINE HYDATIDOSIS IN SOUTHERN BRAZIL

HIDATIDOSE CEREBRAL EM EQÜINO NO SUL DO BRASIL

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- CASE REPORT -

SUMMARY

Equine cerebral hydatid disease is described in a 7-year-old, crossbred, female horse. Clinical signs were characterized by circling gait, pressing of head against fences or objects and motor incoordination. On gross examination of the brain the hemispheres were swollen, mainly the left one. On transversal sections, a 5cm x 7cm fluid-filled cyst was observed within the lateral ventricle of the left hemisphere. The cyst extended from the parietal to the occipital lobe, and compressed the third ventricle. There was also marked mid line deviation. Histologically, the brain lesion adjacent to the cyst, was characterized by a piogranulomatous process and vacuolization of neuropil. A diagnosis of equine hydatidosis caused by Echinococcus granulosus was made on the basis of the morphometric features of protoscolices hooks.

Key words: hydatid disease, horse, Echinococcus granulosus.

INTRODUCTION

Hydatid disease is a zoonosis caused by infection with a metacestode belonging to the genus Echinococcus. The disease is characterized by cysts containing numerous thin protoscolices that most often develop in the liver and lungs. It may develop also in the kidney, spleen, nervous tissue, or bone of intermediate hosts (BARNETT et al., 1988; ¹Médicos Veterinários - Laboratório Regional de Diagnóstico (LRD), Faculdade de Veterinária - UFPel, Campus Universitário s/nº, 96000-900 - Pelotas, RS. Corresponding author.
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BINHAZIM et al., 1992). Sheep appear to be the most common intermediate host in most areas of the world, but in some regions other domestic ungulates, including goats, cattle, swine, buffalo, horses, and camels serve as hosts (BRYAN & SCHANTZ, 1989). Human beings may serve as accidental intermediate hosts (BINHAZIM et al., 1992) and can be infected by all species of the genus Echinococcus (ECKERT & THOMPSON, 1994). After ingestion of the hexacanth by the intermediate host, the larva escapes from the egg, penetrates the intestinal mucosa and migrates via lymphatic and blood vessels to distant sites. At these sites the larva develops into a metacestode, forming a hydatid cyst that grows and produces numerous protoscolices. Clinical signs depend on cyst size and location (BRYAN & THOMPSON, 1994). After ingestion by a carnivore, produces numerous protoscolices. Clinical signs of hunting, because they graze on pasture frequented by foxhounds and other infected dogs. In Ireland, the prevalence of hydatid infection is higher in horses used for hunting. On gross examination of the CNS, the cerebellum was herniated through the foramen magnum. The hemispheres, mainly the left one, were swollen with flattened gyri. On transversal sections, a 5cm X 7cm fluid-filled cyst was observed within the lateral ventricle of the left hemisphere. The cyst extended from the parietal to the occipital lobe, and compressed the third ventricle. There was also marked mid line deviation (Figure 1).

Histologically, the cyst wall was surrounded by pus and granulation tissue occasionally infiltrated by macrophages, epithelioid cells, giant cells, neutrophils and eosinophils. The ependymal epithelium was disrupted and ependymal cells were found within the pus or adjacent to the granulation tissue. Spongiosis and presence of few gitter cells were observed in the neuropil adjacent to the lesion.

The cyst had a thick opaque wall and contained clear fluid with numerous protoscolices free or inside a broad capsule. The protoscolices had 160µm X 120µm of length (Figure 2). Rostellar armature consisted of 28-40 hooks (Figure 3).

The length of large hooks varied between 22 to 44µm and the length of small hooks ranged between 18 to 22µm.
The diagnosis of equine hydatidosis caused by Echinococcus granulosus was made on the basis of the morphometric features of protoscolices hooks.

**DISCUSSION**

Morphometric features of protoscolices hooks observed in this case of equine hydatid disease are similar to those described by THOMPSON & LYMBERY (1988).

Clinical signs observed in this case were due to the location of the cyst in the CNS. Hydatid cysts are common incidental post-mortem findings in horses in the United Kingdom, being found most frequently in the liver and lungs. However, hydatid cysts are well tolerated by horses and clinical hydatidosis is rare, even in heavily infected animals (McGorum et al., 1994).

There are evidences that the sheep strain of *Echinococcus granulosus* does not affect horses, and the equine strain does not affect sheep (Binhazim et al., 1992). Some limited cross infection experiments carried out in these species suggested that horses are resistant to infection by *E. granulosus* of sheep origin, whereas sheep may support limited development of the horse form (Thompson & Lymberry, 1988). Furthermore, hydatid cysts are often observed in sheep and cattle but not in horses in Rio Grande do Sul state. In some countries where the disease is common in sheep, like New Zealand, horses are not infected. In others, like Republic of Ireland where the disease is common in horses, sheep are not infected (Thompson & Smyth, 1975). These features suggest that the equine hydatid disease reported here was due to the equine strain which has not been previously reported in the country.

The epidemiological data from this case does not allow to establish the infection source. The horse was introduced in the farm about 1 year before clinical illness and probably it was infected before that time. Hoberg et al. (1994) reported a case of autochthonous equine echinococcosis in North America. They related it to the importation of hunting dogs with this cestode from the United Kingdom. Some of traditional hunting establishments in North America have the practice of feeding hounds with raw viscera and meat from horses (Hoberg et al., 1994). In Southern Brazil importation of hunting dogs are not a common practice, and it would appear that this source of infection is improbable in this case.

The present case may be epidemiologically significant and it is necessary an accurate investigation, mainly at equine slaughterhouses, to determine the incidence and patterns of transmission among horses in Southern Brazil.
REFERENCES


