

# SPINOSE EAR TICKS AND BRAIN ABSCESSATION IN AN ALPACA (*LAMA PACOS*)

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## ABSTRACT

An eleven year old male alpaca (*Lama pacos*) was presented with a 2-week history of ataxia, intermittent seizures, left-sided head tilt and circling towards the left. The owner described episodes of seizure-like activity lasting 1-3 minutes, but the alpaca acted normally between episodes. On presentation the alpaca was depressed, ataxic on all four limbs, and preferred to remain sternal. The neurological deficits identified on history and physical examination were suggestive of asymmetrical brain stem disease. The seizure-like activity, circling, and tilting of head to the left, as reported by the owner were not observed during physical examination or hospitalisation. Initial diagnostic procedures revealed a mature neutrophilia, hyperglycaemia and elevated creatine phosphokinase. The CSF analysis was within reference range and no bacteria were recovered from culture. Initial therapy included intravenous lactated Ringer's solution at 50ml/kg/day and oxytetracycline (Oxybiotic-100; Butler) at 10 mg/kg IV q 24h. The following morning the alpaca's condition had deteriorated and permission was granted to euthanase. Gross necropsy revealed numerous nymphal and adult ticks in the left external ear canal adjacent to the tympanic membrane which were identified as *Otobius megnini*. A 2 cm diameter proliferation of bone accompanied by a caseous abscess was identified on the second molar of the left mandible. A 2.5 x 2 x 1.5 cm encapsulated mass with a 3 mm capsule was adhered to the right lateral aspect of the brainstem, cerebellum and adjacent calverium contained exudate on cut surface was diagnosed as the brain abscess, histopathologically. Bacteriological culture of a swab from the brain abscess identified *Arcanobacter pyogenes*.

**Key Words:** Alpaca, *Arcanobacter pyogenes*, brain abscess, *Otobius megnini*

An eleven-year-old, 65 kg intact male alpaca (*Lama pacos*) was presented with a 2-week history of ataxia, intermittent seizures, left-sided head tilt and circling towards the left. The owners described episodes of seizure-like activity lasting 1-3 minutes, but the alpaca acted normally between episodes. The alpaca was housed with 30 other alpacas and was fed grass hay and commercial llama pellets. The alpaca had been dewormed at 3 month intervals with either fenbendazole (Panacur; Intervet) or ivermectin (Ivomec; Merial).

On presentation the alpaca was depressed, ataxic on all four limbs and preferred to remain sternal. Rectal temperature (37.5°C; reference range, 37.5-38.9°C) and heart rate (78 beats/minute; reference range, 60-90 beats/minute) were within normal limits but the respiratory rate (40 breaths/minute; reference range, 10-30 breaths/minute) was elevated. Physical examination revealed an adequate body condition (body condition score 5 of 10; Johnson, 1994), head tilt towards the right side with decreased

palpebral reflexes and facial sensation on the right side. Otoscopic examination of both external ear canals revealed no abnormalities. Other physical parameters were within normal limits. The neurological deficits identified on history and physical examination were suggestive of asymmetrical brain stem disease. The seizure-like activity, circling, and head tilt to the left reported by the owner were not observed during physical examination or hospitalisation.

Initial diagnostic procedures included a complete blood count (CBC), serum biochemistry, and cerebrospinal fluid analysis (CSF). Leukocytosis (25,500 cells/ $\mu$ l; reference range, 8,000-21,500 cells/ $\mu$ l) characterised by a mature neutrophilia (24,230 cells/ $\mu$ l; reference range, 4,711-14,868 cells/ $\mu$ l) was identified on CBC. Serum biochemical abnormalities included hyperglycaemia (223 mg/dl; reference range, 76-174 mg/dl) and elevated creatine phosphokinase (338 U/L; reference range, 0-128 U/L). The CSF analysis was within reference range and no bacteria were recovered from culture.

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Common differential diagnoses for the asymmetrical brainstem lesions included listeriosis, neoplasia, brain abscess or otitis media/interna (Butt *et al*, 1991). Differential diagnoses for ataxia included cerebrospinal nematodiasis caused by *Parelaphostrongylus tenuis*, aberrant migration of other parasites, osteomyelitis of the spinal column or spinal abscess (Nagy, 2004). The CSF analysis was not consistent with *P. tenuis* infection which is usually characterised by an eosinophilic pleocytosis. However, a definitive diagnosis of *P. tenuis* can only be made at post-mortem (Nagy, 2004; Baumgartner *et al*, 1985).

Initial therapy included intravenous lactated Ringer's solution at 50ml/kg/day and oxytetracycline (Oxybiotic-100; Butler) at 10 mg/kg IV q 24h. The following morning the alpaca's condition had deteriorated and permission was granted to euthanase.

Gross necropsy revealed numerous nymphal and adult ticks in the left external ear canal adjacent to the tympanic membrane which were identified as *Otobius megnini*. Both tympanic bullae were normal. A 2-cm diameter proliferation of bone accompanied by a caseous abscess was identified on the second molar of the left mandible. A 2.5 x 2 x 1.5 cm encapsulated mass with a 3-mm capsule was adhered to the right lateral aspect of the brainstem, cerebellum and adjacent calverium (Fig 1). The mass contained exudate on cut surface (Fig 2). Histopathology revealed that the brain abscess arose from the parenchyma and periphery of the cerebellum and consisted of degenerate and non-degenerate neutrophils. The subdural space contained free degenerate and non-degenerate neutrophils suggesting rupture of the abscess. Bacteriological culture of a swab from the brain abscess identified *Arcanobacter pyogenes*.

Otoscopic examination in camelids can be unrewarding because of the narrow and tortuous shape of the external ear canal (Fowler, 1998). The ticks were not identified on physical examination because they were deep and adjacent to the tympanic membrane. Radiographs of the skull to confirm or rule out right-sided otitis media/interna were part of the plan the day the alpaca was euthanased, but were not performed due to the patient's deteriorated condition. The apparent rupture of the capsule of the abscess may have been associated with the rapid decline in the patient's condition.

The tilting of head to the right was consistent with the abscess found on the right side of the brain

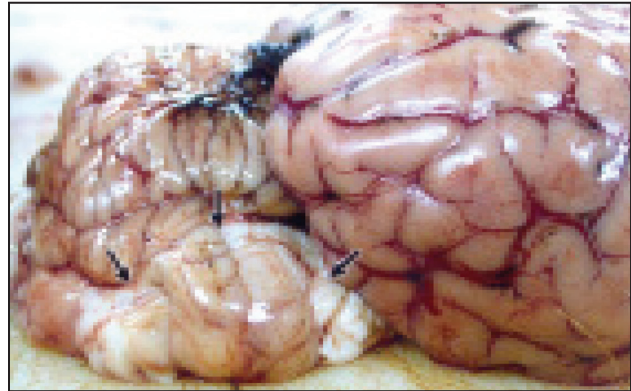


Fig 1. Gross pathologic view of the abscess (arrows) adhered to the right lateral aspect of the brainstem and cerebellum.

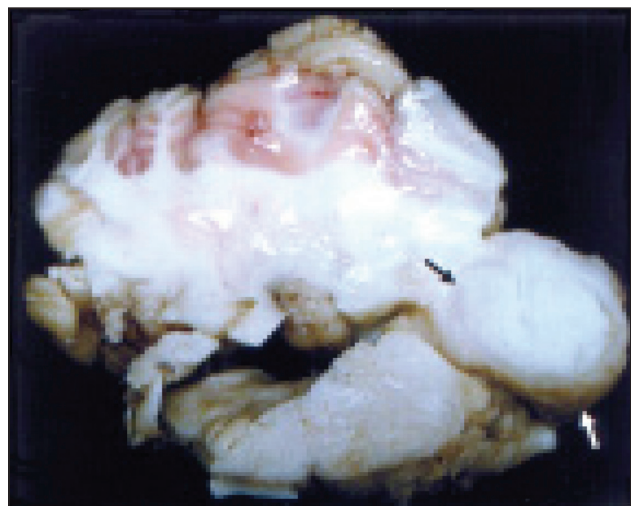


Fig 2. Tranverse section of the cerebellum and brainstem illustrating the abscess adhered to the right lateral aspect (arrows).

stem. Bacterial culture from the abscess on left second molar was not performed. However, *A. pyogenes* is a common pathogen isolated from tooth root abscesses in alpacas (Fowler, 1998) and this may have been the original source of the *A. pyogenes* causing the brainstem abscess. The owner's observation of a left head tilt, circling to the left and seizure-like activity might be explained by the left ear canal tick infestation. Spinose ear ticks (*Otobius megnini*) have been previously reported to cause intermittent muscle fasciculations and colic-like symptoms in horses (Madigan *et al*, 1995) which might be confused with a seizure.

A previous report by Tsur *et al* (1996) reported meningoencephalitis and brain abscessation due to *Escherichia coli* in a 2 week old alpaca cria. To the authors' knowledge brain abscessation due to *A. pyogenes* in an alpaca has not been reported previously. Although commonly found in the ears of cattle, horses, sheep, dogs, cats (Hoskins and Cup,

1988) in the United States, *Otobius megnini* has not been previously reported in an alpaca.

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## A comparative evaluation of parasitological, serological and DNA amplification methods for diagnosis of natural *Trypanosoma evansi* infection in camels

A representative number of 217 camels (*Camelus dromedarius*) from different areas of western Rajasthan State, India were examined from July 2002 to May 2003 for *Trypanosoma evansi* infection. The tests used were parasitological (wet blood film, WBF; stained thin blood smear, TBS), immunodiagnostic (double antibody sandwich enzyme linked immunosorbent assay for antigen detection. Ag-ELISA), and DNA amplification by polymerase chain reaction (PCR). These techniques were compared and the best efficiency was found for the last named (PCR). A prevalence of *T. evansi* infection was detected in 17.05, 9.67, 4.60 and 4.14% by PCR, Ag-ELISA, TBS and WBF with a sensitivity of 100, 56.75, 27.02 and 24.32%, respectively. PCR revealed a specific 227 bp band in positive samples. The intensity of PCR bands was variable in different test samples depending upon the level of infection in the test samples. The history of intermittent fever, emaciation, oedema, poor body condition significantly correlated with positive serological status in ELISA as well as trypanosome DNA detection by PCR.

(Narender Singh, Pathak KML and Rajender Kumar, *Veterinary Parasitology* (2004)126(4)365-373)  
Courtesy: CABI, UK

## NEWS

### **Desertification Combat and Food Safety: The Added Value of Camel Producers**

A new publication is released by Dr.B.Faye and P.Esenov entitled, "*Desertification Combat and Food Safety: The Added Value of Camel Producers*, Volume 362 NATO Science Series: Life and Behavioural Sciences authored by B. Faye and P. Esenov, ISBN 1-58603-473-1. If you wish to order, please send an e-mail to [order@iospress.nl](mailto:order@iospress.nl). You can also order online via <http://www.iospress.nl/loadtop/load.php?isbn=1586034731>. Or you can fill in the attached order form and send it back to one of their office address: Astrid Engelen, Promotion Coordinator, IOS Press BV, Nieuwe Hemweg 6b, 1013 BG Amsterdam, The Netherlands, Tel.: +31 20 6883355, Fax: +31 20 6870039, E-mail: [market@iospress.nl](mailto:market@iospress.nl)

### **International Conferences on Camels at Al-Ain (UAE) - 16-18 April and at Gassim, Saudi Arabia-9-11 May, 2006**

In a communication received from Dr. A. I. Al-Humaid, Head, Organising Committee the International Conference on Camels has been postponed to 9-11 May 2006 due to unexpected circumstances. Earlier the conference was scheduled from 21-23 November 2005 at Gassim, Saudi Arabia. A 50% concession in airfare with Saudi Airlines has been announced to the participants. The UAE University of Agriculture is organising another conference on camels at Al-Ain (UAE) from 16-18 April, 2006. Contact person is Ghaleb Al-Hadrami <[hadrami@uaeu.ac.ae](mailto:hadrami@uaeu.ac.ae)>

### **Ban on camel slaughter**

The Kerala High Court declined to interfere with the orders of Tehsildar, Kanayannur and the health officer, Kochi Corporation, banning the slaughter of two camels brought by a butcher from outside the state. Hon'ble court said that for slaughter of other animals, permission of the corporation secretary has to be obtained and moreover, slaughter can only be done in a licensed slaughter house. The petitioners had no licence for selling camel meat. The Idukki society for Prevention of Cruelty to animals, Daya, an organisation against cruelty to animals, People's Council for Social Justice and Niyamavedi, which had impleaded in the case sought to prosecute the petitioners under the provisions of the Prevention of Cruelty to Animals and Kerala Municipalities Act. The petitioners had contended that they had valid licence to sell meat and that the orders passed by the tahsildar and the health officer were illegal.

Courtesy: The Hindu, 6 December 2005



Mr. Hanuman Soni of Chhatargarh town of Bikaner district prepared a camel cart from the shell of dried coconut. He prepared this model in 8 hours. He first prepared the sticks of shell and then joined them to make the model. A chemical was painted over it to give it a polished look.

Source: Dainik Bhasker 14 September 2005)