

Communications

A clinical note on *Haemophilus aegyptius* infection in sheep in NigeriaS.O. Akpavie¹A.T.P. Ajuwape¹J.O. Ikheloa²

AKPAVIE (S.O.), AJUWAPE (A.T.P.), IKHELOA (J.O.). Note clinique sur l'infection par *Haemophilus aegyptius* chez le mouton au Nigeria. *Revue Elev. Méd. vét. Pays trop.*, 1994, 47 (2) : 177-179

Les auteurs rapportent un foyer d'infection par *Haemophilus aegyptius* dans une ferme d'élevage située à Maya, Etat d'Oyo au Nigeria. Le diagnostic repose sur plusieurs critères : signes cliniques d'un désordre du système nerveux central, découverte histopathologique d'une méningo-encéphalomyélite, lésion d'hépatite purulente nécrosante multifocale aiguë, et enfin, isolation d'*Haemonchus aegyptius* à partir de la moelle épinière. La discussion porte sur les autres affections qui peuvent causer des troubles nerveux.

Mots clés : Ovin - *Haemophilus aegyptius* - Trouble du système nerveux - Diagnostic - Nigeria.

Introduction

Haemophilus aegyptius infection in lambs has been associated with acute highly fatal septicaemia with lesions mainly in the central nervous system (2). The disease is characterized by fever, weakness, severe depression, blindness, ataxia, paralysis, coma and death within one hour to several days (9). Septicaemia with localization in several tissues, meningoencephalitis, synovitis, pneumonia and pleuritis have been reported in *Haemophilus somnus* infection in cattle (2, 10). The disease is commonest in feedlot cattle and may also occur in pastured animals (1, 11). This communication reports fatal *Haemophilus aegyptius* infection in the Palmer breed.

Materials and methods**Case history**

Recently, a livestock farm located in Maya, Oyo State of Nigeria, purchased 500 Palmer breed of sheep aged between 12 and 14 months for fattening. Animals were purchased from Kano, Zaria and Maiduguri. Some of these animals died in transit and some had diarrhoea. On arrival, the animals were dewormed, but the condition did not improve and some sheep showed signs of nervous

disturbance such as lateral deviation of the neck (photo 1), paralysis of the hindquarters, and circling. Animals had oculo-nasal discharges and scabs were seen on the lower lip. The faeces became slightly mucoid and blood stained. Two sick animals were presented to the Department of Veterinary Pathology, University of Ibadan, Nigeria for clinical and *post-mortem* examination. These sheep were observed to strain before voiding small quantities of watery faeces. During the outbreaks, a total of 205 (41 %) sheep were affected and 150 (30 %) died. The two animals presented to the department later died. Some of the animals during early infection responded to treatment with chloramphenicol at 10 mg/kg body weight intramuscularly. Sheep that survived were sold after clinical recovery.

Pathology and microbiology

The haematological examination of the blood samples from both sheep revealed macrocytic normochromic anaemia, while the total and differential leucocyte count showed leucocytosis characterized by neutrophilia with left shift and lymphopaenia. At *post-mortem* the carcasses were markedly emaciated and had rough hair coats and pale mucous membranes. In the liver there were multifocal areas of necrosis characterized by pale depressed friable foci, the abomasum contained few *Haemonchus* worms, while the large intestines contained loose watery faecal materials. The spleen was also markedly contracted and the vessels in the brain were congested. Specimens obtained at *post-mortem* were fixed in 10 % buffered formalin, processed routinely for histopathology and stained with haematoxylin and eosin.

Histological examination of tissues revealed a moderate meningoencephalomyelitis characterized by moderate focal infiltrates of the macrophages, lymphocytes and few neutrophils in the cerebrum and spinal cord, while the brain stem showed very mild perivascular lymphocytic cuffs. The brain stem and white matter also showed very marked axonal demyelination. The white matter of the cerebrum contained focal aggregates of glia cells mixed with few neutrophils. The liver showed focal areas of coagulative necrosis with moderate neutrophilic infiltrates (photo 2). There was moderate haemosiderosis in the spleen which also contained moderate numbers of neutrophils in the red-pulp.

Microbiological examination of tissues showed a luxuriant growth of *Haemophilus aegyptius* from the spinal cord. Cultures were made by direct inoculation onto blood and chocolate agar plates respectively and incubated both aerobically and microaerobically at 37°C; better growth of *Haemophilus aegyptius* was obtained on the chocolate agar after 24 h incubation aerobically. No haemolysis was seen on human blood agar, and the isolate was non-pathogenic to mice. The colonies and biochemical characteristics of the organism were as described by COWAN (3).

1. Department of Veterinary Pathology, University of Ibadan, Ibadan, Nigeria.

2. Department of Veterinary Microbiology and Parasitology, University of Ibadan, Ibadan, Nigeria.

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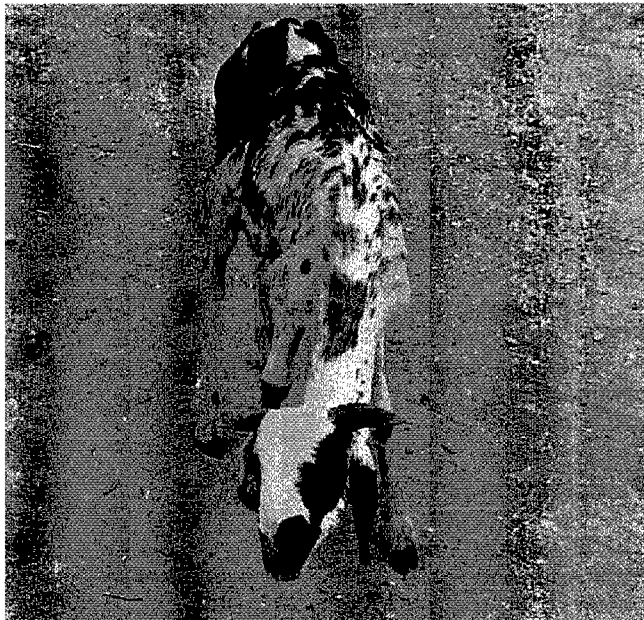


Photo 1 : Sheep showing lateral deviation of the head.

Discussion

The clinical and pathological manifestations of *Haemophilus aegyptius* infection observed in this report are similar to those previously described for *Haemophilus* infections of sheep and cattle (4, 8, 11). The animals involved in this case did not show haemorrhage or infarction: they showed only mild vasculitis with perivascular lymphocytic cuffs in the central nervous system. The disease was also characterized by neutrophilia with left shift. This observation has been reported in less severe cases of *Haemophilus somnus* infection (2). In addition, marked lymphopaenia and macrocytic normochromic anaemia were observed. These have not been previously reported, and we believe that the anaemia may have been associated with *Haemonchus* infection. Clinically and histopathologically the disease is indistinguishable from listeriosis, but the isolation of *Haemophilus aegyptius* rules out infection with *Listeria monocytogenes*.

Another disease from which this infection should be differentiated is symmetrical poliomalacia of sheep. In this condition there is bilaterally symmetrical malacia in the ventral horns of the cervical grey matter and medulla and there is no pyrexia (5, 6).

Copper deficiency (Swayback) is another differential diagnosis. Swayback is more commonly reported in lambs and is essentially characterized by spastic paralysis of the hindlimbs, and the inability of the affected animals to stand or walk, depending on the severity of the condition (7, 12). The source of this *Haemophilus aegyptius* infec-

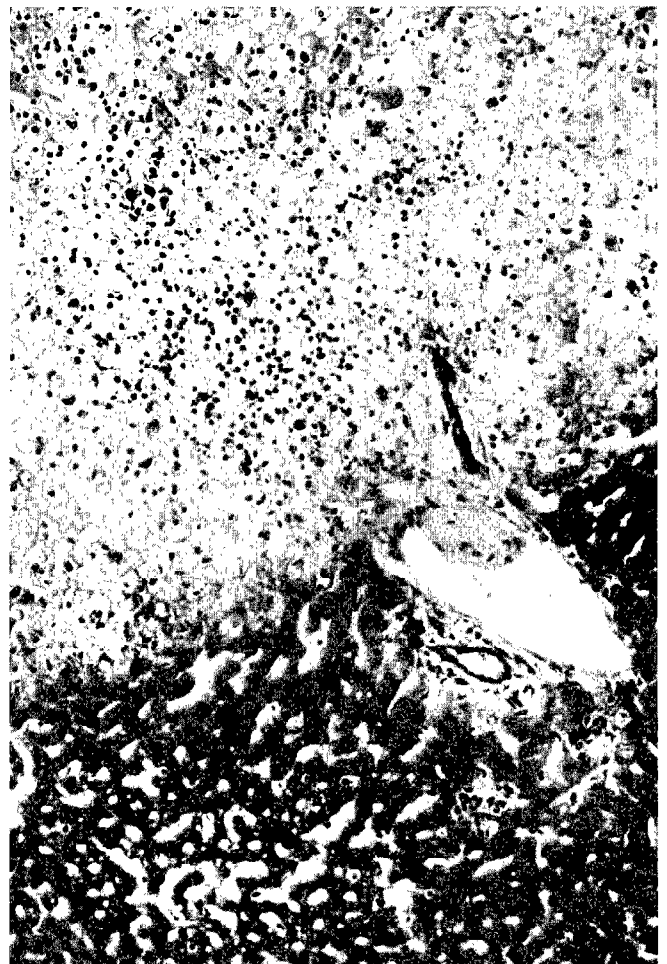


Photo 2 : Liver showing focal necrosis with moderate neutrophilic infiltrates. H & E x 475.

tion in sheep is not known. These animals were obtained from various sources, and the infection may have been contracted from any of the sources as was reported in feedlot cattle (1, 11). Although, the epidemiology and pathogenesis of the disease is not fully understood (2), the stress of transportation might have contributed to its development.

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AKPAVIE (S.O.), AJUWAPE (A.T.P.), IKHELOA (J.O.). A clinical note on *Haemophilus aegyptius* infection in sheep in Nigeria. *Revue Elev. Méd. vét. Pays trop.*, 1994, **47** (2): 177-179

An outbreak of *Haemophilus aegyptius* infection in a livestock farm located in Maya, Oyo State, Nigeria is reported. Diagnosis was based on clinical signs of central nervous system disturbance, histopathological findings of meningoencephalomyelitis, acute multifocal necrotising purulent hepatitis and the isolation of *Haemophilus aegyptius* from the spinal cord. Other diseases that can cause nervous disturbance are discussed.

Key words : Sheep - *Haemophilus aegyptius* - Nervous system disease - Diagnosis - Nigeria.

Pathogenic aerobic bacteria and fungi isolated from stray dogs in Trinidad

M.O. Ojo¹

OJO (M.O.). Bactéries aérobies et champignons pathogènes isolés chez des chiens errants à Trinité. *Revue Elev. Méd. vét. Pays trop.*, 1994, **47** (2) : 179-181

Les auteurs ont recherché la fréquence des bactéries aérobies et des champignons pathogènes chez 100 chiens errants. Les germes pathogènes les plus souvent isolés ont été *Staphylococcus aureus*, *S. intermedius* et *Malassezia pachydermatis*. Aucun germe n'a été trouvé en matière de zoonose. Il est suggéré que les chiens errants ne peuvent ni maintenir, ni transmettre les germes en cause.

Mots clés : Chien - *Malassezia pachydermatis* - *Staphylococcus aureus* - *Staphylococcus intermedius* - Bactéria - Champignon pathogène - Transmission des maladies - Trinité - Antilles.

Introduction

The stray dog population in Port of Spain, capital of Trinidad and Tobago has been estimated at 150,000 (7). A cross-sectional study to examine the prevalence of bacterial, fungal and endo- and ectoparasites of 100 stray dogs in the municipality of Port of Spain was carried out between January and June 1992. The aims were to demonstrate their importance in the maintenance or transmission of zoonotic pathogens and identify other germs associated. This paper describes the pathogenic aerobic bacteria and fungi isolated.

Materials and methods

Swabs of the skins (axilla and groin, ears and noses) were obtained from 100 dogs. Intestinal contents were also obtained from about 0.1 % of the stray dog population at *post mortem* examination. The number was dependent on the available facilities for the project. All materials were stored at 4°C and processed within 2 h of collection. Each swab was cultured on Sabouraud dextrose agar (SDA, Oxoid Ltd, Basingstoke, Hants, England) in duplicate, 5 % sheep blood agar (Oxoid blood agar base number 2) and mannitol salt agar (Difco Laboratories, Detroit, USA). The duplicates of SDA were incubated at room temperature (25-28°C) for up to 6 weeks and the others at 37°C for 24-96 h or longer for SDA cultures. The intestinal contents were cultured for *Campylobacter* and *Salmonella* species (2) and *Yersinia* species (11).

Bacteria and fungi were identified either at generic or species level (5). *Staphylococcus aureus* and *S. intermedius* were characterized (6), and *Malassezia* species identified (8).

1. School of Veterinary Medicine, Faculty of Medical Sciences, University of the West Indies, St. Augustine, Trinidad et Tobago.

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