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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

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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).

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Communication

Sensitivity of coagulase positive staphylococci to nine antibacterial agents was carried out (4), namely penicillin (10 IU), gentamicin (10 µg), ampicillin (10 µg), erythromycin (10 µg), chloramphenicol (30 µg), tetracycline (30 µg), methicillin (5 µg), cephalothin (30 µg) and trimethoprim-sulfamethoxazole (25 µg) (Oxoid Ltd, Basingstoke, Hants, England). The plates were incubated at 37°C for 18-20 h. Resistance to methicillin was confirmed by repeating the test with methicillin disc and incubating at 30°C for 18-20 h. Bacteriophage typing of *S. aureus* (1) was performed using the international phage set (IPS) for typing human strains and phages in the bovine IPS.

Results

Table I illustrates the bacteria and fungi isolated from the noses, ears and skins of the dogs. No *Salmonella*, *Campylobacter* and *Yersinia* species were isolated from the intestinal contents. On the basis of pigment formation, DNase production and mannitol fermentation (6), 47 coagulase positive staphylococci were identified as *S. aureus*, being pigmented DNase and mannitol fermentation positive. Twenty-seven were isolated from the noses, 16 from the ears and 4 from the skins. Twenty-eight strains which were non pigmented, DNase negative or weakly positive and failed to ferment mannitol (6) were identified as *S. intermedius*. The majority (21) were isolated from the noses, 2 from the ears and 5 from the skins.

Malassezia pachydermatis was identified on the basis of its primary growth on SDA at room temperature and 37°C in 24 h to 14 days, non requirement of lipid supplement for growth and urease production (8). Forty-one strains were isolated from the ears, 4 from the skins and none from the noses (table I). No *Microsporium* or *Trichophyton* species were isolated from the skins. All the coagulase positive staphylococci were sensitive to cephalotin, one strain was resistant to methicillin (30°C), while 2 were resistant to gentamicin, chloramphenicol and trimethoprim-sulfamethoxazole, respectively.

Resistance to penicillin was highest (43), followed by ampicillin (32), tetracycline (14) and erythromycin (3). The methicillin resistant strain (*S. intermedius*) was also resistant to penicillin, ampicillin, erythromycin and tetracycline. The strain was isolated from the skin but the same spe-

cies from the nose of the same dog was sensitive to methicillin and resistant to penicillin, ampicillin and tetracycline. Only 3 strains of *S. aureus* were typeable with the IPS phages. They belonged to phage group III and of phage types 53/83A, 42E/53 and 83A. Phage types 53/83A and 42E/53 were from the noses and phage type 83A was from the skin. Phage type 53/83A was resistant to penicillin, ampicillin, chloramphenicol and tetracycline. The other 2 phage types were only resistant to penicillin and ampicillin.

Discussion

Salmonella species have been isolated from the cloacas and feet of scavenging cultures in Trinidad (ADESIYUN, personal communication) and rectal swabs of dogs in Nigeria (10). Failure to isolate salmonellae, campylobacters and yersiniae in the present study could be due to the often hard and dry small intestinal contents of dogs. The condition was probably detrimental to the survival of the pathogens in the intestine. No attempt was made to isolate the pathogens from the mesenteric lymph nodes.

Malassezia pachydermatis may be associated with otitis media of dogs (6). It is often associated with oily parts of the skin and ears of dogs (6). Majority of the isolates (91 %) came from the ears of the dogs. The ears were often infested with ticks also covered with waxy debris. Although they were stray dogs which were unlikely to have been treated for any infection, many of the coagulase positive staphylococci isolated from them were resistant to some antibacterial agents particularly the penicillins. One strain was resistant to methicillin and the strain was resistant to 4 other antibacterial agents. A similar finding was reported in Nigeria (9).

Methicillin is not usually used in veterinary practice. It is not clear how the animals acquire the antibacterial resistant staphylococci. Only 3 of the 47 *S. aureus* were typeable either at routine test dilution (RTD) or 100 RTD with the IPS phages. About 21 % of 75 canine strains of *S. aureus* from Nigeria were typeable with the IPS phages (3) but the workers found 76 % of them typeable with the new 5 canine phages (3). Canine phages may therefore be more specific for canine strains of *S. aureus*.

TABLE I Bacteria and fungi isolated from the nose, ears and skins of stray dogs in Trinidad.

| | <i>S. aureus</i> | <i>S. intermedius</i> | <i>Proteus</i> sp. | <i>P. aeruginosa</i> | <i>M. pachydermatis</i> | <i>A. fumigatus</i> | <i>A. niger</i> | <i>Penicillium</i> sp. | Unidentified fungus |
|-------|------------------|-----------------------|--------------------|----------------------|-------------------------|---------------------|-----------------|------------------------|---------------------|
| Nose | 27 | 21 | 2 | — | — | — | — | — | — |
| Ear | 16 | 2 | 17 | 6 | 41 | — | — | 1 | — |
| Skin | 4 | 5 | — | — | 4 | 4 | 4 | 1 | 5 |
| Total | 47 | 28 | 19 | 6 | 45 | 4 | 4 | 2 | 5 |

Conclusion

The results show that about 57 % of coagulase positive staphylococci isolated from stray dogs were resistant to penicillin, which is probably an indication of the presence of resistant organisms in the environment. No zoonotic pathogen was isolated from the 100 dogs, a fact which may show that stray dogs probably do not maintain or transmit the pathogens.

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- OJO (M.O.)**. Pathogenic aerobic bacteria and fungi isolated from stray dogs in Trinidad. *Revue Élev. Méd. vét. Pays trop.*, 1994, **47** (2): 179-181

The occurrence of pathogenic aerobic bacteria and fungi in 100 stray dogs was investigated. The most commonly isolated pathogens were *Staphylococcus aureus*, *S. intermedius* and *Malassezia pachydermatis*. No zoonotic pathogen was isolated. It is suggested that stray dogs may not maintain or transmit the pathogens.

Key words : Dog - *Malassezia pachydermatis* - *Staphylococcus aureus* - *Staphylococcus intermedius* - Bacteria - Pathogenic fungi - Disease transmission - Trinidad - West Indies.