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Profile of Canine Cases in Government Veterinary Clinics in Imo State, Nigeria (1986 - 2000)

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ABSTRACT

A retrospective study of canine cases presented to Veterinary clinics in Imo State (1986-2000) was conducted using case files. Information sought included date of case presentation, breed, sex, age and type of case. During the study period 2,766 dogs were presented for treatment. Of these, 98.4% (2,721) were Nigerian local breeds and 1.8%, exotic breeds. Also, forty different cases were handled in these dogs. The result of the study indicated low mean annual case load, with parasites (endo, 47.29%, ecto, 9.68% and blood protozoan 8.88%) dominating (66% of all cases). These were closely followed by surgical and other related cases (14.75%). Other medical cases such as allergic dermatitis, poisoning and unknown etiologies constituted 2% and 10% respectively. There was a significant variation ($P<0.05$) in means of cases of fracture, joint dislocations, and other traumatic injuries over the three 5-year period. The results also showed significant variation ($P<0.05$) among the means of all the medical cases except that of dermatitis over the three age groups of dogs. Allergic conditions appear to affect dogs of all ages. It was concluded that low mean annual case load, high level parasitism, followed by surgical and other related cases characterized the report.

Key words: Canine, surgical, medical cases, Nigeria

INTRODUCTION

The dog is man's most constant companion, Major (1971). Pets or companion animals are therefore said to be good for people (Edney, 1992).

In Nigeria, there has been an upsurge of pet ownership and pet population with the Nigerian local dog predominating (Anene and Omamegbe, 1987). This increase in ownership could be attributed to the utility values of dogs; herding, hunting, tracking a vermin-killing, guarding (protection of homes and properties). In Nigeria, some rural dwellers keep dogs as a source of meat, and income for breeders.

In Western world, as Britain, the USA, assistance dogs for the blind, deaf, or people with other disabilities are becoming more common (Eze and Eze, 2002). Probably, because of this utility values, and education, there is a growing awareness among pet owners of the need for veterinary care.

Dog keeping is associated with certain inherent problems like the presence of stray dogs (very important in the epidemiology of canine diseases), lack of responsible pet ownership among dog owners, and public health hazards also associated with dogs (Arambulo and Steel, 1876; Mekenzie, 1977; Anene and Omamegbe, 1987). In addition, the problem of communicable diseases, pollution, aesthetic offences, bites, scratches and other problems associated with dogs and cats are well documented (Anon, 1986; Eze and Eze 2002).

More than seven (700) hundred infectious and non-infectious diseases have been reported from different parts of the world to affect dogs (Tilley and Smith, 2000). Diseases have been classified by many authors according to the system of the body they affect, the aetiology (Blood and Studart, 1999) or according to methods of treatment, in which case it could be medical or surgical. This work documents both surgical and related cases as well as medical cases in the study area. Surgery as one of the principal arts of veterinary practice is used in correction of certain diseases, objectionable behaviours and management of traumatic injuries as fractures, joint dislocations, and excessive growth and so on.

In canine practice, clinical cases other than those of surgery such as helminthosis, ectoparasitism, babesiosis

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(piroplasmosis), trypanosomosis, and other non-infectious conditions as dermatitis, pneumonia, and poisoning etc, are very common (Anene *et al.*, 1996). Helminthosis is an important disease of dogs worldwide (Soulsby, 1982, Anene *et al.*, 1996) and occurs in both stray and housed dogs. Saeki, *et al.* (1997) in Japan reported the prevalence of *toxocara canis* infection to be constant for eight years and ranged 72.2 and 85.4% whereas other helminthes such as *dipyludum caninum*, *Trichuris Vupis, Ancylostoma caninum* and *Spirometra erinanc eieuropaei* have 24.6%, 2.5%, 1.2% and 0.7% respectively. Similar study in Korea shows infestations by *A. caninum* (30%), *T. canis* (21%) and *Toxoascaria Leonina* (26%). Reports in Nigeria have confirmed the existence of infestations in our indigenous and exotic dogs, (Oduye and Otisile, 1977; Bobade *et al.*, 1984; Anene *et al.*, 1996). Generally, dogs maintained under poor sanitary conditions are more commonly affected as compared to those maintained under proper hygienic conditions (Saror *et al*., 1979).

Similarly, extoparasites including ticks, lice and fleas, cutaneous myiasis, demodectic mange and scabies have been reported in Nigeria (Dipeolu, 1975), with *Rhipicephalus sanguineus* and *Haemaphysalis leachi leachi* being the most numerous and *R. Senegalis* and *R. Longus* and *Otobius megnini* occur in small numbers. Ectoparasites are of great economic importance due to their role as vectors of many canine diseases, (Tilley *et al.*, 2000), their exsanguinations activity which leads to unprofitability; anaemia and death in severe cases, (Lapage, 1962); their excessive damage to the skin and hair coat (Soulsby, 1982) or due to their public health importance (Kelly, 1977; Tilley *et al*., 2000).

In Nigeria, *T. brucei* and occasionally *T. Congolense* affect dogs inevitably (Adewunmi and Uzoukwu, 1979; Omamegbe *et al.*, 1984; Obetta *et al.*, 1997). Mixed infections by both species are also common. Trypanosomes have been reported to be one of the most important blood parasites of dogs in some parts of Nigeria (Leeflang *et al.*, 1976; Oduye *et al*., 1976; Oduye and Otesile, 1977; Adewunmi and Uzoukwu, 1979; Omatainse, 1989). Trypanosomosis is almost restricted to the Southern parts of the country, except the Obudu Plateau, in line with the distribution of the Glossina vector. (Onyia, 1980; Leeflang *et al.*, 1976; Adeyanju and Aliu, 1977).

The non-infectious conditions in dogs are normally due to some viral and bacterial diseases, malnutrition and exposure (Pennock *et al.*, 1968).

It has been documented that bacterial pneumonia in dogs is influenced by breed, age and sex (Roudebush, 2000). On the other hand dermatitis is produced by numerous agents which include external irritant, burns, allergens, trauma and infection (bacterial, viral, parasitic or frugal (Catcott *et al.*, 1968). Dermatitis can equally occur in association with a systemic disease or pre-disposed by hereditary failures. Survey by Ambali and Mohammed (1994) revealed that dermatitis is among the common disease conditions of dogs in Maiduguri, Northern Nigeria. Studies in Kampala (Cameroon) by Onapito and Archibald (1981) revealed that skin diseases in dogs, are mostly of infected wounds associated with bites (fly, and dog), accidental cuts, and abrasion, followed by those associated with extoparasites infestations (ticks, fleas, and mites). He equally observed that primary bacterial and mycotic dermatitis were uncommon, hormonal skin disorders and neoplasms were rare. However, the occurrence of flea allergic dermatitis and atopic inhalant dermatitis has been widely documented (Tilley *et al.,* 2000). Food allergies and other idiosyncrasies leading to dermatitis have also been reported in dogs (Aiello, 1998).

For years now, epidemiological studies have served certain principal purposes; investigative or diagnostic discipline for population or herd medicine. Various surgical and non-surgical cases are known to be diagnosed and treated in veterinary clinics all over the world (Eze and Idowu, 2002).

The cardinal objectives of this work therefore, is to determine the occurrence and level of distribution of the different canine surgical and other surgically related cases as well as medical cases among dogs in the study area and to relate the incidence with breed, sex, age and seasons. The results may benefit or guide researchers on the prevalence of cases, policy makers in strategic planning on how to control common conditions, pet owners and, the public at large on the inherent problems associated with dog keeping.

MATERIALS AND METHODS

Study location

Data for this study were collected from the case records of functional Government Veterinary clinics in Imo State. The State is located in Eastern Nigeria and lies within Latitude 5º13”N - 6º05”N and longitude 6º36”E - 7º20”E with tropical rain forest vegetation. It is predominantly made up of rural areas with urban centers at Owerri, Orlu and Okigwe.

Data collection

Canine clinical cases presented for treatment for the past fifteen years (1986 - 2000) were extracted. Cases with clear history, thorough clinical examinations and in most instances supported with laboratory confirmation were selected.

Information sought from the data

These include date of presentation of case, breed of dog, sex, age and type of case. Vaccination cases and request for routine de-worming were not considered as clinical cases and were not recorded.

Analysis of the data

The data collected were statistically analyzed using percentage, one-way analysis of variance (ANOVA) and students *t*-test

RESULTS

During the study period, 2,766 dogs of different breeds, ages and sexes were presented for treatment. Of these, 98.4% (2,721) were local breeds whereas 1.8 (45) was exotic breed. These cases were categorized into 40 different groups (Tables 1a, b).

It was observed that parasites (endo, 47.29%, ecto, 9.68% and blood protozoan 8.88%) constituted up to 66% of all cases. These are closely followed by surgical cases, which constituted 14.75% (420) of the total cases recorded. Of these, castration, fractures and joint dislocations constituted 28.28% each whereas other related and traumatic injuries surgically managed constituted 29.29%. Transmissible venereal tumour constituted 4.50% (Table 1). The results equally showed a significant association ($p<0.05$), in the means of the three age groups of dogs for traumatic injuries, fracture and joint dislocation, respectively. There was no significant difference ($p>0.05$) among the means of fractures, joint dislocations and other related cases in 5-year periods of 1986-1990 and 1991-1995. This showed that these surgically related cases are not age dependent. However, there is a great association between young dogs of less than one year of age and castration.

Again bacterial, viral, fungal infections constituted 3.27%, 1.66% and 0.5% respectively of the total case load in their descending order. There was a significant variation ($p<0.05$) among the means of all the groups under study except that of dermatitis over the three age groups of dogs. Cases such as allergic reactions/dermatitis, poisoning and disease of idiopathic origin constituted 1.86%, 1.30% and 9.65% in that order. There was no significant difference ($p>0.05$) in the mean occurrence of helminthes, babesiosis, pneumonia, poisoning and trypanosomosis during the three 5-year period. A closer observation however showed that there was significant variation ($p<0.05$) in the means of dermatitis between 1986 - 1990 and none between the three 5-year periods of 1990 - 1995 and 1996 - 2000. Though, no significance difference existed among the means of three 5-year periods of canine helminthes, however, separation of significant means by 2MDT showed significant variations in canine helminthes infection over the three 5-year period, and this could not be explained. There was no significant difference ($p>0.05$) in the occurrence of babesiosis between the means of dogs less than one year of age with the age group of 1 - 5 years, but these differ significantly from those above 5 years of age. This showed that the disease was more prevalent in dogs less than 5 years of age. It was observed that while dermatitis was not age related, there was no significant relationship among the age brackets. Ectoparasitism differed significantly from one age range to another whereas cases of helminthes and pneumonia differed significantly ($p<0.05$) among dogs less than five years and those above five years. Significant differences existed ($p>0.05$) in the means of cases of poisoning between dogs less than one year and those within the age range of 1-5 years, but was observed to significantly differ ($p>0.05$) from older dogs of over five years. Cases of trypanosomes showed a strong association ($p>0.05$) in dogs between 1-5 years of age than those less than one year.

In terms of season, only cases of poisoning were significantly ($p<0.05$) influenced and occurred mainly in dry season. Season had no effect ($p>0.05$) on the distribution of other major cases recorded. Again, sex has a significant influence ($p<0.05$) on the case distribution of dermatitis, ectoparasite infection, poisoning, and trypanosome infection.

DISCUSSION

Available records over the fifteen year period reveals that about 98% of the dogs presented for treatments were local breeds while the remaining 2% were exotic breeds. This supports an earlier finding by Omamegbe (1980a) which states that the dog population of Nigeria is high with local breeds dominating. However, the annual case load of 120 cases per annum could be regarded as low, Oboegbulem (1994) reported that the value of dogs and whether veterinary care is given depends on the economic status (activities) of the owner and on availability of Veterinary services.

From this study more male dogs were presented for treatments than females (ratio approximately 4:1). It has been suggested that the activities of the males expose them more to injuries necessitating treatments than the females (Mohammed *et al.*, 1996).

Clinically, helminthes constituted about 47% of all the cases reported in the study area over the years. This figure as high as it was, did not show any increase in the cases from year to year. Saeki *et al*. (1997) in Japan however, reported the prevalence of *Toxocara canis* infection to be constant for eight years and ranged between

72.2% and 85.4% whereas other helminthes such as *Dipylidum Caninum, Trichuris Vupis., anchylostoma Caninum* and *Spirometra erinanc eieropaei* have 24.6%, 2.5%, 1.2% and 0.7% respectively. Similar study in Korea showed infestations by *A. Caninum* (30%). *T. canis* (21%) and *Toxoasaria Leonina* (26%). The monthly trend of helminthes peaked in February and was lower in November. Anene and Omamegbe (1987) reported that gastrointestinal parasitism is encountered all year round, Poor sanitary conditions under which our local dogs were kept contributed to the year round occurrence of helminthes in Nigeria (Saror *et al.*, 1979; Fashuyi, 1981). In this report, significant relationship existed between age of dogs and the prevalence of helminthes. Younger dogs under one year were more susceptible. Anderson (1975), Chiejina and Ekwe (1986), Okolo, (1986a) were of the opinion that this could be due to natural age resistance and active immunity acquired by adult dogs from previous exposures. Contrary to the reports of Dunn (1978) and Bodade *et al.* (1984); no significant relationship existed between sex and case prevalence. As explained that both sexes within a study area were exposed to the same conditions of husbandry; as most of them roam about probably in search of food.

From this report, ectoparasitism constituted about 10% of the total cases. The high level ectoparasitism in dogs of all ages underlines the importance of this kind of infection in the economic management and value system of dog owners. Apart from the month of December, which showed a very high prevalence, there is no pattern in the annual distribution of ecto-parasitism. Reports by Dipeolu (1975) stated that ectoparasitisms were more prevalence during the end and the beginning of the rainy season. The diseases were found to be more common in male dogs. The sex of the dog was found to have a significant effect on the prevalence of ectoparasitism. However, the prevalence was found to decrease with age; and might be due to resistance factors and other adaptation mechanism developed by the dogs with age.

Nevertheless, with the proliferation of private veterinary clinics and awareness more effective use of acaricides and insecticides were employed to help reduce the occurrence.

Babesiosis showed a consistent prevalence during the 15 year period of study. Esuruoso (1972), Oduye and Dipeolu (1976), Idowu *et al.* (1977), Anene and Omamegbe, (1987) showed that *Babesia canis* was the most widely spread *hematozoan* reported with high endemicity in Nigeria, especially in the south. This could be explained considering the distribution of *Rhipicephalus sanguinous* and *Heamaphysalis leachi leachi*; the disease vector which is governed by rainfall (mean annual rainfall of more than 60 cm is required for their survival (Urguhart *et al.,* 1996). Babesiosis was observed to be more prevalent at the beginning and end of the rains.

The annual distribution of canine babesiosis in Imo State was observed to have been decreasing during the 15 years until the last three years studied (1998 - 2000) where a steady increase was noticed. The increased occurrence as observed in this study, could have been due to improved diagnostic methods introduced within the years, increased responsible ownership and probable increase in dog population.

Contrary to the reports of Adewunmi and Uzoukwu (1979), no significant effect of sex on the prevalence of canine babesiosis was noticed. However, canine babesiosis was more prevalent in dogs more than one year old.

The pattern of presentation tallies to a great extent with that of ectoparasitism and dermatitis, probably because ectoparasitism played a big role in the epidemiology of the latter.

In addition, dermatitis was observed to be more prevalent in older dogs, more than one year of age. Occurrence of dermatitis (allergic) depends on several sensitizations (Onapito and Archibald, 1981).

The sex of the dog was observed to have a significant effect on distribution of dermatitis, with more infections occurring in males. This contradicts reports by Onapito and Archibald (1981), which suggested that there was no sex prevalence in the occurrence of dermatitis. Onapito and Archibald (1981) suggested that skin diseases of dogs are mainly those of infected wounds associated with bites (fly and dog), accidental cuts, and abrasions.

Trypanosomosis ranked high in the dry month of March and in early rainy season (May-June). Sex and age were found to have a significant effect on the prevalence of canine trypanosomosis, with higher prevalence occurring in male adult dogs. Adewunmi and Uzoukwu (1979) reported that the disease was more prevalent in female dogs. Again, the incidence of trypanosomosis was observed to have been on a steady decrease over the fifteen years. This could be due to increased level of urbanization which increasingly destroyed the breeding habit of the tsetse vectors.

The highest annual record of pneumonia in dogs was in 1988. Forty-five percent (45%) of all the recorded cases occurred during the last five years studied (1996 - 2000). This could have resulted from improper diagnosis of viral diseases especially *Canine Distemper* which according to Ezeibe (2001) is now common in eastern Nigeria. Horst (1975) maintained that pneumonia rarely occurs as a primary condition in dogs but usually during the course of distemper. Pneumonia was found to be common in dogs above 1 year of age; and equally in male dogs. This contradicts reports by Roudebush (2000) which suggested higher prevalence in dogs less than 1 year. The relationship between the occurrence and the distribution of the pneumonia cases was found to be significant, more cases were found to occur during the rainy season.

From this report, fracture, joint dislocation, other traumatic injuries and castration top list among surgical cases. However, cases of castration were observed to have been on a steady decrease over the past ten years. This could be attributed to the fact that so many quacks now give an in-house services and castration is one of the commonest

surgery that could be carried out. Castration was also observed to be carried out more on young dogs less than one year old as reported earlier by Oehme (1988). On seasonal basis, castration cases were observed to be more prevalent in the dry season than in the rainy season and can be explained to be related to the exhibition of some objectionable characteristics by dogs, especially in the breeding season and the need to control or eliminate them, as reported by Abdullahi *et al.* (1983).

Cases of fractures and joint dislocations among dogs in the study area were found to be on steady decrease over the 15 years. These clinical conditions were equally found to be slightly more in dogs above one year of age. Kolata *et al*. (1974), and Phillips (1979) reported that fractures in dogs were more common in animals less than three years old. Horst (1975), also reported that fractures resulting from car accidents are very common. More cases involving males as observed in the study is in agreement with an earlier report by Phillips (1979).

Fractures and joint dislocations were found to be more prevalent during the months of December, April and August. This is difficult to explain except that these months in Nigeria are usually associated with festivals; probably many automobiles would be on the road. The highest annual occurrence was in 1987. The general fall in the appearance of cases over the years at the clinics visited might be due to owners' preference either to sell or salvage them instead of spending huge amount of money on surgical procedures.

Again males were observed to be more involved in traumatic injuries probably due to their activities. Deserving mention among surgical cases is the transmissible venereal tumor which constituted 4.5% of the total surgical cases in the study area over this period. The disease is enzootic and the incidence is found to be low here compared to 11% reported by Eze and Idowu (2002) at University of Nigeria Veterinary Teaching Hospital, Nsukka in the same eastern Nigeria. The disease is transmitted by coitus in dogs.

No particular pattern of distribution was found in the annual and monthly occurrence of poisoning in dogs. However, it was observed to be more common in dry season, and a significant relationship was found to occur between the prevalence of poisoning and the season of the year. This can be explained to be due to very high level of roaming observed in dogs during the dry season in search of food and for breeding. Equally, there was a significant relationship between the prevalence of poisoning and the sex of the animal. More cases occurred in the males. Also, poisoning was observed to occur in dogs less than one year of age. This can be said to be due to the common habits in younger dogs or puppies; especially in eating and playing with any objects as they always visit the dustbins in search of food.

It could be concluded that the study is characterized by low mean annual case load. Majority of the dogs studied were local breeds. As in most studies of similar nature cases of helminthes, ecto and endo parasitism and other infectious conditions predominate with 80.93% whereas surgical cases constituted only 14.75% of all the cases. Male dogs were more involved in traumatic conditions, fracture and dislocation, than females. Allergic conditions affect dogs of all ages.

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