INTESTINAL HELMINTHIC INFECTIONS OF CATS IN CALABAR, NIGERIA

N. UMECHE and A. E. IMA

Department of Biological Sciences, University of Calabar, Calabar

Abstract. A study of intestinal helminthic infections of 52 cats (Felis catus) was undertaken in Calabar, Nigeria. Direct smear and zinc sulphate floatation technique were utilized. The following helminths were observed: Toxocara cati (28.85 %), Angiostrongylus tubaeforme (19.23 %), Trichuris felis (5.77 %), Dipylidium caninum (23.08 %) and Taenia taeniaformis (9.61 %). The worm burdens were generally low, ranging from 2 to 20 per cat. No definite pattern of infection was observed with regard to sex. Trematodes were not seen. The zoonotic and public health aspects of some of these helminths are discussed.

Helmint parasites of domestic cats have been recorded from various places. These surveys involved stray cats or veterinary cases. Ash (1962) and Lillis (1967) in USA, Arundel (1970) in Australia, Vanparije and Thierry (1973) in Belgium, and Haralampidis (1978) in Greece, outlined the helminth parasites of cats in those places. In Britain, similar studies have been carried out by Oldham (1965) in London, Cowper (1973) in Wales; and McColm and Hutchison (1980) in Scotland. Mituch (1968), Vokoun and Benešová (1972), Vokoun and Sležková (1977) investigated the helminths of cats in Czechoslovakia.

In Africa, Graber (1975) in Ethiopia, and Corkish (1975) in Ghana, observed cestodes and flukes of cats, respectively. Some nematodes of cats were found in surveys involving cats and other hosts in Western Nigeria by Cowper (1968) and Iduw et al. (1977). The present survey was undertaken to determine the prevalence of helminth parasites of cats in Calabar, which is located in the eastern part of Nigeria.

MATERIALS AND METHODS

Fifty-two cats (Felis catus) were examined in this study. They consisted of 35 cats bought from their owners at Akpap Okonyong and 17 cats bought from Calabar main market.

The cats were killed and their intestines were cut open and searched for worms under the dissecting microscope. Faecal samples were removed from the intestines and examined microscopically by direct smear in physiological saline solution and by zinc sulphate floatation technique.

The intestinal mucosa was scraped to dislodge any helminth adhering to the surface. These scrapings were placed into petri dishes containing physiological saline solution and examined under the dissecting microscope, and then transferred to glass slides and examined microscopically under high power objectives. The ova and worms were identified and recorded. Small portions of positive faecal samples were kept in 10 % formalin for further analysis.

RESULTS

The prevalence of the cat helminths observed in this study is shown in Table 1. Three species of nematodes were observed, namely Toxocara cati (28.85%), Angiostrongylus tubaeforme (19.23%), and Trichuris felis (5.77%), while the two species of cestodes were Dipylidium caninum (23.08%) and Taenia taeniaformis (9.61%). The worm burdens were generally low, ranging from 2 to 20 per cat. No pattern of helminthic infection was observed with regard to the sex of the cats. Trematodes were not seen.
Table 1. Prevalence of intestinal helminths of 52 cats in Calabar, Nigeria

<table>
<thead>
<tr>
<th>Parasite species</th>
<th>No. of cats infected</th>
<th>Prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxocara cati</td>
<td>15</td>
<td>28.85</td>
</tr>
<tr>
<td>Ancylostoma tubaeformis</td>
<td>10</td>
<td>19.23</td>
</tr>
<tr>
<td>Trichuris vulpis</td>
<td>3</td>
<td>5.77</td>
</tr>
<tr>
<td>Dipylidium caninum</td>
<td>2</td>
<td>3.85</td>
</tr>
<tr>
<td>Taenia taeniaformis</td>
<td>2</td>
<td>3.85</td>
</tr>
</tbody>
</table>

DISCUSSION

The most common nematode observed in this study was *Toxocara cati* (28.85%). This result is of immense public health significance, since *T. cati* causes human toxocariasis. Larvae migrate in humans and the cats are a source of human infection. Although figures of actual human cases are not readily available, the problem can become serious due to the large numbers of unclaimed cats that abound in the area. A lot of these cats are traceable to workers who have gone on transfer and abandoned their pets. These cats feed out of dustbins, garbage heaps and on mice. They probably acquire the infection by eating mice harbouring *Toxocara larvae*. They also defecate indiscriminately on the streets, in parks and public places. Humans, especially children, playing in such places may become infected by ingesting the soil contaminated by faeces containing *T. cati* ova. Similar helminthic surveys involving cats have found *toxocariasis* to be a common problem. In Prague, Czechoslovakia, eggs of *T. cati* were found in children’s sandbox and in faeces collected from public areas by Valkounová (1982). Haralampidis (1978) recorded 67% *T. cati* infection in Greece, Vanparijs and Thienpont (1973) in Belgium obtained 65.2%, while Nichol et al. (1981) found 53.3%, infection in England.

*Ancylostoma tubaeformis* was observed in 19.23% of the cats. Ancylostomiasis has been a common disease among local cats as observed in earlier studies by Cowper (1968) and Ido wu et al. (1977). Humans are susceptible to infection by *A. tubaeformis*, leading to cutaneous larva migrans, thus raising public health concerns. In other places, infection rates of *A. tubaeformis* ranged from 38.6% in Belgium (Vanparijs and Thienpont 1973) to 48.6% in New Jersey, U.S.A. (Lillis 1967).

Whipworm ova were found in 3 cats (5.77%). The other two local studies (Cowper 1968, Ido wu et al. 1977) did not record the parasite. Hence, infestation by *T. vulpis* does not appear to be a major problem among local cats. Elsewhere, Lillis (1967) observed *Trichuris vulpis* among New Jersey cats, while Visco et al. (1975) observed 2.6% infection by trichurids of cats in Missouri, U.S.A.

*Dipylidium caninum* occurred in 12 cats (23.08%). The number of this cestode found per cat varied from 2 to 20. Humans stand a great risk of getting infected by ingesting fleas harbouring cysticercoïds. Although low infections were recorded here, Mc-Coll and Hutchison (1980) obtained up to 350 worms per cat with prevalence of 23.6% in Scotland. Infectivity rate also varied from 11.4% in Czechoslovakia (Mittieh 1968) to 81% in Hawaii, U.S.A. (Ash 1962).

The other cestode *Taenia taeniaformis* was found in only 5 cats (9.61%). The worm burdens varied from 3 to 7. Mice and rats constitute a part of routine diet for local cats in Calabar, but the number of these rodents harbouring strobilocerci has not been determined. Elsewhere in Africa, the other cestodes of cats found were *Joyeuxiella pasqualei* and *Dipylidium acanthotheo* in Ethiopia (Grabar 1975).

In Nigeria, very few cats are kept as pets and most of them are strays. Therefore, these strays may be spreading a lot of these parasites in the environment. Hence, some control measures are necessary. These measures should include requiring cat-owners to bring their cats to veterinary clinics for medical examinations, mandating public health officials to destroy stray cats that act as reservoirs for these parasites, and educating the public on potential dangers posed to human health by these cat parasites. Young children should not be allowed to play with cats that have not undergone vaccination or medical examinations. These measures will help to prevent the spread of these parasites to the human population.

REFERENCES


The book has run through three editions and ten reprints and reflects the traditional practice of French specialists in the field of tropical health care. Twenty one authors participated in its compilation. The leading author is head of the Department of parasitology and tropical medicine, Pitié-Salpêtrière Hospital, and professor of the Medical Faculty in Paris. In the introduction he states that tropical medicine is changing with the changing world. Infections and nutritional deficiencies continue to be the most important diseases in southern countries. The public health situation is being complicated by uncontrolled industrialization and haphazard urbanization and despite efforts of many international organizations it is getting worse throughout the world. The book’s contents is divided into 90 chapters in 13 parts. At the end of each chapter there is a list of the journals cited.

Part 1 deals with tropical geography in relevance to communicable diseases depending on geographic characteristics of any given area. Likewise discussed here are the demographic aspects of world population, the problems of famine and nutrition, economy and health care in developing countries, and there is a list of organizations supporting the development. Parts 2—5 are devoted to parasitic, fungal, bacterial and viral diseases. Each disease discussed is provided with information on the biology of the causative agent, epidemiology, pathophysiology, pathological anatomy, symptomatology, therapy and prophylaxis. Part 6 treats the prevention of communicable diseases, the principles of screening and therapy, the collective prophylaxis of bacterial and parasitic diseases, the vaccination in tropical environment, the methods of vector control and various methods of sanitation. Parts 7 and 8 describe specific conditions of particular medical branches in the tropics. Part 9 presents information on infections caused by ectoparasites and venomous animals, on the intoxication, drug abuse and heat-associated illnesses. Part 10 describes different laboratory techniques used under tropical conditions. Part 11 gives an account of methods used in epidemiology and biostatistics. Part 12 discusses socio-medical aspects of migration, tourism and travel. The last part contains tabular surveys of therapeutic regimens of infectious and parasitic diseases, lists of drugs and vaccines, and terminological vocabularies.

The book ranks among the basic professional works of world-known medical literature. The documentation is represented by ample tabular surveys, graphs, maps, photographs and photomicrographs, electromicrographs, X-ray, echographic and tomographic pictures. Coloured supplement provides ecological views (landscape types), illustrations of skin affections and various malformations and pathologic changes in organs and tissues. The book is intended for specialists working in tropical regions of developing countries and for physicians taking care of persons coming or returning from the tropics.

Assoc. Prof. J. Jiea, M. D., D. Sc.