قسم : الطفيليات - كلية الطب - جامعة أسيوط.
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دراسة على نوعين مختلفتين من ديدان الاكينوكازماس في القطط بالوجه القبلي

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في أثناء القيام بمسح الطفيليات التي قد تصيب القطط في أسيوط فحص الباحثون خمسة وعشرين قطة ووجدوا دودتين من جنس الأكينوكازماس في الأمعاء الدقيقة لأربعة قطط منها. وبعد مقارنة الديدان الحالية بما سبق وصفه من أنواع الأكينوكازماس المعروفة ، وجد أن احدى هذه الديدان شبيهة بدودة الأكينوكازماس بيرفوليتاس (التي سبق وصفها من الانسان) غير ان بعض الاختلافات المورفولوجية أوضحت انها (نوع مختلف) اما النوع الثاني فقد اتضح انه نوع جديد لم يسبق وصفه ، وقد اقترح تسميته (أكينوكازماس بريفيفيتلاس).

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STUDY ON TWO ECHINOCHASMID PARASITES (TREMATODA: ECHINOCHASMIDAE) FROM UPPER EGYPTIAN CATS

(With One Figure)

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SUMMARY

During a survey of the parasitofauna of cats of Assiut Province, two different echinochasmid worms were found in the small intestine of four out of twenty five examined cats. Comparison of the present flukes with the previously described ones proved that one of them is new variety to which the name Echinochasmus perfoliatus var. aegyptius is suggested and the second is believed to be a new species to which the name Echinochasmus brevivitellus is proposed.

INTRODUCTION

Echinochasmid worms were encountered on many occasions to infect man. Echinochasmus perfoliatus is one of the well known human species (DAWES 1946 and FAUST et al., 1975). Echinochasmus japonicum was also reported from man by UJIIE (1936) who stated that he was able to infect himself experimentally as well.

According to GOHAR (1934), Egyptian birds were recorded to harbour E.europorus (LOOSS, 1896; DIETZ, 1909) as well as E.beleocephalus (LINST., 1873; DIETZ, 1909). LOOSS (1899) described E.mordax from the pelican; a parasite which was later found by WIETENBERG (1932) in a dog from Palestine. FAHMY and SELIM (1959) recovered and described E.perfoliatus (RATZ, 1908) and E.liliputans (LOOSS, 1896) from dogs.

During a study of the parasitofauna of the Upper Egyptian cats, the present authors encountered two different Echinochasmus worms. Here in, is the description of these worms as well as a discussion of their taxonomic position.

MATERIAL AND MATHODS

Stray cats were trapped from Assiut city in Upper Egypt. Out of twenty five cats, four were found to harbour parasites belonging to the genus Echinochasmus. Twelve worms were collected. Worm burden was 1-5 parasites per host. From one cat, five of these worms were encountered. They were noticed to differ from the other seven worms collected from three different cats. Collected trematodes were carefully washed in saline. Fixation was doen in 5% formaline and the worms were stained in acetic acid alum carmine. They were mounted in canada balsm . Camera lucida drawings and descriptions were done form these mounted specimens.

RESULTS

Echinochamus perfoliatus var. aegyptius n. var.

This parasite was found in three cats out of 25 examined cats. The body of the parasite is fusiform in shape, with its anterior and posterior ends narrower than the middle (Fig. 1: a). Length of the body varies between 2.87-4.12 mm. Width of the body varies greatly at different body levels. Maximum breadth is at the level of the ventral sucker and it ranges between 0.443-0.460 mm. At the region of the testes, the width is 0.276-0.302 mm. The worm is most narrower at the tail like posterior extremity; measuring 0.210-0.254 mm. in breadth. Lateral walls of the body are covered with minute spines to the level of the posterior border of the hind testis (Fig. 1:a).

Anterior reniform collar is provided with 24 spines arranged in two alternating crowns equal in size and number; among which three smaller ones on either side forming corner spines. Oral sucker measures 0.120 - 0.129 by 0.980-0.100 mm.Ventral sucker is more or less shperical and is about twice the size of the oral sucker. Its diameter varies between 0.225 - 0.253 mm. Distance between the oral and ventral suckers is about 0.792 mm. Globular pharynx is prominent and measures 0.113 - 0.115 mm in length and 0.083 - 0.086 mm in breadth. Oesophagus is in the

form of a narrow tube measuring 0.264 - 0.288 mm. in length. Intestinal caeca are simple and reaching almost to the posterior end of the body. Testes are nearly equatorial and situated one posterior to the other with a conspicuous gap between them. The two testes are more or less equal in size; each of them measuring about 0.245-0.248 by 0.187 mm. Vasa eferentia unite midway between the ovary and the venral sucker before entering into the cirrus pouch. The latter is well developed and measures 0.300-0.310 by 0.115-0.115 mm. Ovary is more or less median in position. It is spherical in shape. measuring about 0.086 mm. in diameter. Ootype lies between the testes and the ovary and measures 0.170-0.173 by 0.155-0.158 mm. Uterus usually contains few number of eggs (14-18). Eggs are operculated and measure 0.062-0.074 by 0.030-0.038 mm. Vitelline glands are in the form of follicular masses filling the lateral fields of the posterior part of the body and reaching the level of the anterior testis. They are characteristically separated into two longitudinal rows; the posterior most part of the body is free from them. Lateral vitelline duct passes along each lateral side. At the level of the anterior border of the anterior testis, the two ducts bend transversally and medially to form the common vitelline duct which enters into the posterior border of the Ootype (Fig. 1: a).

Echinochasmus Brevivtellus sp. n.

Five specimens of this parasite were found in the upper part of the small intestine of one naturally infected cat. Body is elongated with blunt ends (Fig. 1: b). Body length ranged from 3.6-6.3 mm. depending on the degree of relaxation or contraction of the posterior portion. Maximum breadth is at the level of the cirrus pouch and is 0.370-0.378 mm. at the level of the testes it is usually only 0.278-0.288 mm. and at the posterior tail like portion, it is 0.229-0.233 mm. Chraracteristic pattern of spination was noticed on the lateral sides reaching the level of the posterior border of the ventral sucker, where they disappear to reappear again in the testicular region (Fig. 1: b). Anterior collar is covered with 22 spines arranged in a single uninterrupted dorsally row, from which five smaller ones on either side forming the corner spines. Oral sucker is nearly rounded, its diameter about 0.101 mm. Pharynx is also rounded in shape and is more or less equal to the size of the oral sucker. Oesophagus is about 0.460-0.473 mm. in length. Venteral sucker is about twice the diameter of the oral and measures 0.230-0.250 mm. in diameter. Distance between the two suckers is about 0.936-1 mm. Intestinal caeca are simple and reach almost to the posterior end of the body. The two testes are unequal in size. Anterior testis is slightly smaller than the psoterior. They measure 0.153-0.155 by 0.115-0.117 mm. and 0.181-0.184 mm. by 0.134-0.135 mm. respectively. They are located one posterior to the other. Vasa efferentia unite a little posterior to the ventral sucker before entering into the well developed cirrus pouch. Ovary is median in position, rounded in outline and measures 0.086-0.088 in dimaeter. Uterus contains very few eggs (not more than 6-8). Vitelline glands are in the form of coarse follicles filling the posterior tail like appendage; leaving only the posterior extremity free. Their anterior level does not exceed the level of the posterior end of the hind testis. Vitelline follicles are characteristically confluent and not separated along the intestinal caeca. Longitudinal vitelline ducts meet anterior testis forming the common vitelline duct which anters the posterior border of the Ootype. Eggs are operculated, golden yellow in colour and measure 0.076-0.084 by 0.038-0.041 mm.

DISCUSSION

Echinochasmus Perfoliatus Var Aegyptius n. var.

FAHMY and SELIM (1959) recorded the presence of E.perfoliatus in Egyptian dogs. The present specimens are superficially similar to the worm described by FAHMY and SELIM (op. cit.). but they differed markedly in some morphological features particularly the arrangement of the collar spines, the relative measurements of the oral and ventral suckers, position of the ovary, arrangement of the testes and the distribution of the vitellaria. The same morphological features differentiate the new variety from E.perfoliatus described by DAWES (1946). Such differences, although distinct, yet the present authors found them not enough to create a new species for the present worms and therefore it is suggested to be a new variety of Echinochasmus perfoliatus.

Echinochasmus Brevivitellus sp. in.

This has to be differentiated from echinochasmid worms with 22 collar spines. These are E.oligocanthus DIETZ, 1910; E.mordax LOOSS, 1899, E. schwrtzi PRICE, 1931, E.gorsaki and E.melvi YAMAGUTI, 1939, E.pelecani JOHNSTON and SIMPSON, 1944. E.cohensi RAO, 1951 and E.canai CHATTERJI, 1954. From the first species, the present worms

differs in the arrangement of the collar spines and the ratio of the oral and ventral suckers. Moreover, E.oligocabthus was described only from Egyptian herons. E.mordax was described from an Egyptian pelican by LOOSS (1899). It differs from the new species in the arrangement of the collar spines as well as the relative position of the ventral sucker. E.schwrtzi was described from the muskrat by PRICE (1931) and redescribed by BURROWS and LILLIS (1965) from dogs. It differs from the present worms in the arrangement of the collar spines, the site of the testes and body spination as well as the distribution of the vitellaria. E.gorsaki and E.melvi were described by YAMAGUTI (1939). The species under discussion differs from them in the arrangement of the collar spines, site of testes and extent of the vitellaria. E.pelecani was described by JOHNSTON and SIMPSON (1944) from the Australian pelican. They stated that it was very similar to E.mordax described by LOOSS (1899) from the Egyptian pelican. It differs from the present material in the arrangement of the corner spines as well as the relative measurements and spination of the body. E.cohensi was encountered by RAO (1951) in the intestine of the Canadian gull(Larus argentatus). It differs from E.brevivyellus sp. n. in the arrangement of the collar spines, ratio of oral and ventral suckers, extent of vitellaria, relative measurements as well as the final host. E.canai was found by CHATTERJI (1954) in an Indian dog. The present species differs from E.canai in the absence of a genital sucker, ratio of oral and ventral suckers ahd in the absence of oesophageal gland cells. From the above mentioned discussion, it is evident that the species under discussion is hitherto unknown species for which the taxonomic name Echinochasmus brevivitellus sp.n. is suggested. It differs from all the previously mentioned species in the limited distribution of vitellaria.

REFERENCES

Burrows,R.B. and Lillis,W.G. (1965): Treamatodes of New Jersy dogs and cats. J. Parasit., 51, 570-574.

Chatterji,P.N. (1954): On a new species of Echinochasmus from the intestine of a dog. Indian J. Helminth., 6, 1-6.

Dawes,B(1946): Trematoda with special reference to British and European forms. Cambridge University Press,644 pp.

Fahmy,M.A.M. and Selim,M.K. (1959): Studies on some trematode parasites of dogs in Egypt with special reference to the role played by fish in their transmission. Z. Parasitkede, 19, 3-13.

Faust,E.C., Beaver P.C. and Jung,R.C. (1975): Animal agents and vectors of human diseases. Lea & Philadelphia, 479 pp.

Gohar,N. (1934): Liste des trématodes parasites et de leurs hotes vertébrés signalés dans la Valléé du Nil. Premiere parti. Annls Parasit. hum. comp., 12, 322-331.

Johnston,T.H. and Simpson,E.R. (1944): Life history of the trematode, Echinochasmus pelecani n. sp. Trans. Roy. Soc. South Australia, 68, 113-119.

Looss,A. (1899): Weitere Beitrage zur Kennthis der Trematodenfauna Aegyptiens, zugleich Versuch einer naturalichen Gliederung des Genus Distomum Retzius. Zool. Jehrb. Jena, Abt. Syst. 12, 521-784.

Price,E.W.(1931): Four new species of trematode worms from the muskrat, Ondatra zibethica with a key to the trematode parasites of the muskrat. Proc. U.S. Nat Mus., 79, 1-13.

Rao,N.S.M. (1951): Echinochasmus cohensi n. sp. (Family Echinostomidae, subfamily Echinochasminae) from the sea gull(Larus argentatus). Canadian J. Zool., 29, 215-218.

Witenberg,G. (1932): Uber zwei in Palastina in Hunden und katzen parasitierende Echinochasmus Arten (Trematoda) Z. Parasitkde, 5, 213-216.

Ujiie,N. (1936): On structure and development of Echinochasmus japonicum and its parasitism in man. Taiwan Igakkai Zasshi, 35, 545-546.

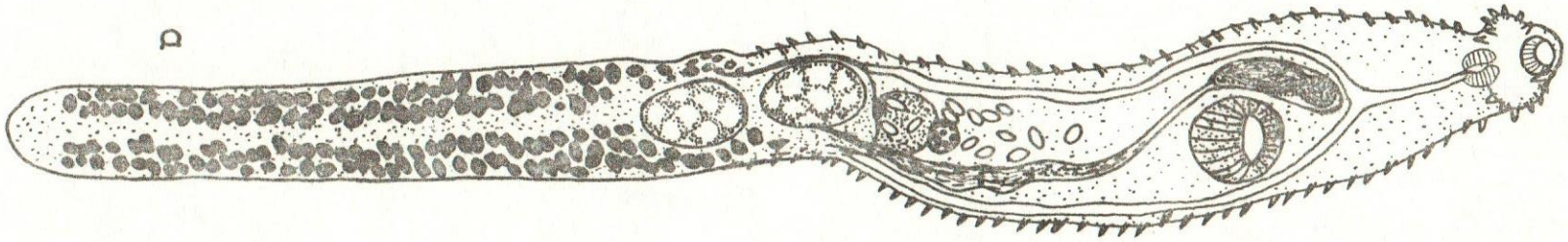
Yamaguti,S. (1939): Studies on the helminth fauna of Japan. Part 25. Trematodes of birds. IV. Jap. J. Zool.; 8, 129-210.

EXPLANATION OF FIURES

Camera lucida drawings of:

Fig. 1: a- Echinochasmus perfoliatus var aegyptius n. var.

Fig. 1: b- Echinochasmus brevivitellus sp. n.



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