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An Abattoir Study on the Prevalence of Some Gastrointestinal Helminths of Sheep in Gharbia Governorate, Egypt.

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Abstract: This study was carried out in Gharbia province, Egypt in order to determine the prevalence of some important helminths infecting sheep. During 2005, a total of 189 slaughtered sheep of local breeds were careful inspected; 98 (51.9%) had helminths infection, the recovered species were identified as *Fasciola* spp. *Paramphistomum cervi*, *Moneizia expensa*, *Avitellina centripunctata*, *Cysticercus tenuicollis*, *Haemonchus contortus, Parabonema skrjabini* and *Graphidiops* spp. The data showed high prevalence rate of helminths, particularly cestodes in the study area that necessities application of control measures.

Key words: Abattoir · Prevalence · Sheep · Helminthes · Egypt

INRODUCTION

The parasitic infections of production animals have great economic impact, especially in developing countries [1]. In Egypt, the development of the rural areas could be achieved depending on sheep which have a total estimated population of 3671895 head [2]. Moreover sheep is considered as one of the most promising animals to achieve the aims of meat products supplies for the human being [3].

Sheep act as final or intermediate host for many helminths, infection with larval stage of *Taenia hydatigena* (*Cysticercus tenuicollis)* is considered as one of the most wide spreading parasitic diseases infecting sheep allover the world and is responsible for considerable economic losses [4], especially in countries that have a problem of stray dogs [5], while *Haemonchus contortus* is considered as the main gastrointestinal (GI) nematode responsible for losses in tropical countries [6]. Ovine haemonchisos is a serious economic disease which may result in rapid deaths; sever anemia and depletation [7].

Considerable information on sheep helminths allover the world are present, but little on the overall prevalence rate of helminths infection and especially cestodes in mid-Delta region, Egypt, as the previous studies focused on Cairo region [8] or concerned with nematode infection [9]. This study aimed to indicate the general prevalence of helminths infection in sheep in mid-Delta, Egypt.

MATERIALS AND METHODS

Study Area and Samples: During the period elapsed between January2005 till December 2005, 189 sheep slaughtered in the abattoir of El-mahalla El-kubra, the largest city of Gharbia governorate located in mid- Delta of Egypt (30° 57'53.43" N and 31° 10'07.00") were carefully inspected. The macroscopically detectable helminths, blood samples and abomasa were individually collected in clean screw Falcon tubes and plastic bags, labeled and transferred as soon as possible to the laboratory.

Parasitological Examination: Abomasa were opened, washed thoroughly and examined for the presence of adult nematodes. All recovered nematodes were washed thoroughly with saline 0.9% and others mounted directly on glass slides with the aid of lactophenol for morphological identification of the species. Adult trematodes and cestodes were fixed in neutral formalin 10% and for morphological identification some worms were placed between two glass slides, stained with acid carmine. Metacestodes were washed several times with distal water then the host tissue debris carefully removed, rewashed by using saline 0.9% and examined for viability,

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measured and preserved in neutral formalin 10%%. Identification was done using available identification keys [10-12]. Data were computed and presented in tables.

RESULTS AND DISCUSION

Data on the prevalence and species infection rate are shown in table 1. The prevalence of sheep helminths in mid-Delta, Egypt revealed that; out of 189 examined sheep, 98 (51.9%) had helminths infection. This was actually in agreement with results obtained from other countries [13], that means it is not only a local problem. The recovered species were identified as, *Fasciola* spp. *Paramphistomum cervi, Moneizia expensa*, *Avitellina centripunctata, Cysticercus tenuicollis, Haemonchus contortus, Graphidiops spp and Parabonema skrjabini* (Figure 1). Cestodes infection was the most prevalent infection, followed by nematodes, while trematodes were the lowest prevalent infection. *Fasciola* spp. infection rate was the lowest among recorded species and also lower tan other studies in Jordan [14] and Egypt [15], but agrees with the results obtained from Iraq [16] and Turkey [17], this marked decrease in ovine fascioliasis coincidence with the dramatic decrease of animal fascioliasis previously recorded in Egypt [18]. Moreover, the prevalence of paramphistomes was also lower than that stated by Raza *et al.*[19] in Pakistan; this may be attributed to the difference of geographical area,the excessive usage of fasciolicidal drugs by animal owners and also due to the decrease in the population of intermediate host snails in the last few years, all these factors together aid in remarkable decrease in human and animal fascioliasis in Egypt.

Table 1: The prevalence and species identified in 189 sheep slaughtered in El-mahalla El-Kubra abattoir.

	Species	No. of infected animals	%
Trematodes	*Fasciola spp.*	1	0.53
	P. cervi	4	2.12
Cestodes	*M.expensa*	36	19.04
	A. centripuctata	3	1.6
Metacestodes	*C.teniucollus*	32	16.93
Nematodes	*H.contortus*	15	7.9
	Graphidiops spp.		
	& P. skrjabini	7	3.7
Total No. of infected animals		98	51.9

Our data indicated that adult tapeworms prevalence is the highest, but not so different with Hassanien [20], but higher than recorded in other countries [21, 22] and also higher than results recorded by Bashtar *et al.* [8]. *Moniezia expensa* was the highest prevalent cestode parasite found during the present study, this result agreed with those of Bashtar *et al.* [8] and Hassanien [20]. *C. tenuicollis* prevalent was lower than that reported from India [23], Egypt[24] and Ethiopia [25], but coincidences with that obtained by Hasslinger and Weber-Werringhen in Germany[26] and higher than results previously recorded in Iran [27], indicating the persistency of the life cycle in-between sheep as intermediate host and dogs,

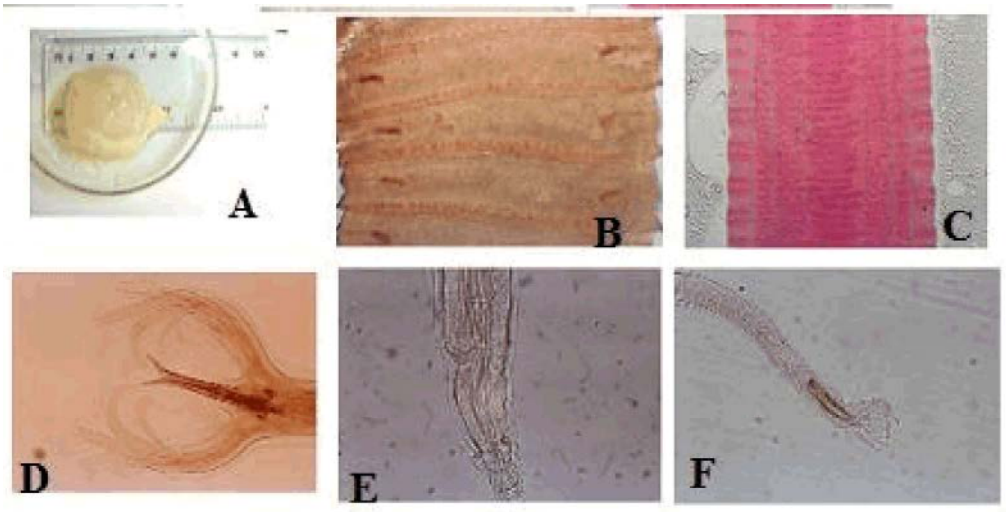

Fig. 1: Species identified in examined sheep:
A. *Cysticercus tenuicollis* cyst; B. *Moneizia expensa* mature segments; C. *Avitellina centripunctata* mature segments; D. *Haemonchus contortus* male bursa x 400; E. *Parobronema skrajbini* anterior end x400 and F. *Graphidiopis* spp. (male copulatory bursa x100).

Table 2: Type and incidence of mixed infection in 189 sheep slaughtered in El-mahalla El-Kubra abattoir.

Type of Mixed Infection	No. Of animal with mixed infection	%
Fasciola spp. with *H. contortus*	1	0.53
M. expensa with *A. centripuctata*	1	0.53
M. expensa with *C. tenuicollis*	7	3.7
M. expensa with *H. contortus*	1	0.53
M. expensa with o *Graphidiops spp and P. skrjabini*	1	0.53
C. tenuicollis with *A. centripuctata*	2	1.05
C. tenuicollis with *H. contortus*	1	0.53
H. contortus with *Graphidiops* spp. *and P. skrjabini*	10	5.3
Total No. Of animal with mixed infection	24	12.7
Total No. Of examined animals	189	100

this explanation highlights the possibility of transmission of other members of the family *Taeniidae* to human and/or domesticated animals of public health and veterinary importance, suggesting that more practical control program should be employed. The higher prevalence of cestodes in mid-Delta than on Cairo, may be attributed to many factors (geographical, environmental, vector, parasite and host habits), but this suggestion have to be thoroughly investigated parallel to collection of data about other parasitic infection in Egypt.

The most prevalent abomasal nematode was *H.contortus*, this results coincidence with results reported before from Ethiopia [28] and Egypt [9].The rate of mixed infection was not so high (Table 2) and the most common type was infection with different species of abomasal nematodes followed by *M. expensa* and *C. tenuicollis* in the same animal, this may be explained to the higher rate of infection of these parasites in the examined animals.

In was concluded that a high prevalence of helminths, particularly cestodes with subsiding of *Fasciola* spp. infection is present in sheep in mid-Delta, Egypt. Further surveys parallel to application of control measures are strongly recommended.

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