Vet. Med. J., Giza, 39, No. 2, 221-229 (1991)

PARASITES IN THE MUSCLES OF SLAUGHTERED CAMELS

BY

A.M. DARWISH AND M.M. EL-BAHY

Food Hygiene and Parasitology Depts.Fac.of Vet.Med.
Cairo University

(Received: 9.3.1991).

INTRODUCTION

Camels nowadays are considered one of the main sources of animal protein in Egypt. It is widely consumed among great numbers of population especially in poor districts; therefore the muscular parasites infesting camel muscles are of great importance from the public health point of view.

Camel cysticercosis not only important from the zoonotic point of view but also due to the economical losses occurring as a result of condemnation of infested muscles. Cysticercus camelii was recorded for the first time in Egypt by Nomani (1920). Wahby (1938) stated that Cysticercus bovis was rarely seen in camels while pellegrini (1945), and Angelotti (1967) recorded Cysticercus dromedarii in 23% and 24.55% of the examined camel carcasses respectively. Selim et al. (1970) found that less than 10% of camels and cattle imported from Sudan and Somalia were infested with C. dromedarii El-Mossalami and El-Nawawi (1971) found that 0.62% of slaughtered camels were infested with C. dromedarii and also found that higher percentage occured in male carcasses (0.77%) than females (0.46%). Hamdy et al. (1984) found that only 0.5% of the examined camel carcasses were infested with Cysticercus dromedarii and the infestation rate was higher in aged animals (over 5 years).

Parasites in the Muscles of Slaughtered camels.

Hydatidosis is one of the most important zoonotic diseases; Trong (1968) mentioned that camels were highly susceptible to be infested with hydatid cysts than other animals. In South Iran, Afshar et al. (1971) found that 42.8% slaughtered camels were surfering from hydatiodosis, while in Nigeria were 57.5% as recorded by Dada and Belino (1979), it was also 35.2% at the central region of Sudan as recorded by El-Badawi et al. (1979).

In Egypt, Moch et al. (1974), Ahmed (1977),Mansour (1979), El-Askalany (1981) and Hamdy et al. (1984) reported that 32.8%, 39.9%, 22.6%, 35.96% and 20.93% of slaughtered camels were infested with hydatid cysts.

Sarcosporidiosis is a disease widely distributed among reptiles, birds, mammals, man and even in two fish species (Kalyakin and Zasukhin 1975). The first description of camel sarcosporidiosis was published by Mason (1910); who stated that the cysts were highly present in the muscles of oesophagus, laynx,head, tongue, neck, throat, thigh, leg, heart, diaphragm and tail while liver, spleen, kidneys and portion of involuntry muscles from the gastric compartments and intestine were free from the cysts.

El-Afifi et al. (1962) mentioned that 50% of slaughtered camels at Cairo abattoir were infested with the cysts, while El-Etreby (1970) reported myocardial sarcosporidiosis in 81% of the examined camel carcasses. Finally Hilali and Mohamed (1980); and Yassien (1984) reported that 36.6% and 41.1% of slaughtered camels in Egypt were suffering from sarcosporidosis.

Trichinosis is a disease affecting man, pig, rat and many other species of carnivorous and omnivorous animals.

In Egypt; Trichinosis could be detected among slaughtered pigs only as reported by Tadross et al. (1975), Sedik et al. (1975) and El-Nawawi (1977). Bommer et al. (1982) in Germany claimed a case of human trichinosis to ingestion of air-dried camel meat brought from Egypt. Yassien (1984), examined meat samples from 4260 slaughtered camels for trichinosis by trichinoscopical examination, the trypsin digestion and paraffin embedding techniques. He insured the complete abscence of T. spiralis. On the other hand Eckhardt et al., (1985) recorded a very heavy infestation with Trichinella spiralis in different muscles of an experimentally infested camel.

The present work was planned to study the existance of cysticarcosis, hydatidosis, sarcocystosis and trichinosis among slaughtered camels in Egypt.

MATERIALS AND METHODS

One thausand camels slaughtered at Cairo abattoir were examined for cysticercosis according to the technique recommended by El-Mossalami and El-Nawawi (1971). Such carcasses were also thoroughly investigated for detection of hydatid cysts.

Samples from the diaphragm at the tendinious insertion of the pillers, oesophagus, and wall of the left ventricle were collected from the same carcasses and examiend for sarcocysts spp. cysts by the trichinoscope technique recommended by Gracey (1986).

In addition, samples from the tendinious insertions of the pillers of the diaphragm were subjected for the trypsin digestion technique to detect T.spiralis larvae.

RESULTS AND DISCUSSION

From the results achieved in Table (1), it is evident that the incidence of Cysticercus dromedarii among slaughtered camels in Egypt was 0.60%. Such results are going with those obtained by El-Mossalami and El-Nawawi (1971); and Hamdy et al. (1984). It is also clear that the infestation rate among females was slightly higher than males. Such observation disagree with that recorded by El-Mossalami and El-Nawawi (1971).

Table (1): Incidence of Cysticercus dromedarii among male and female slaughtered camels.

Sex	Examined carcasses	Infested carcasses	%
Males	716	4	0.56
Females	284	2	0.71
Total	1000	6	0.60

From the results recorded in Table (2) it is clear that the incidence of hydatidosis among slaughtered camels in Egypt was 24.40%, such incidence was lower than that obtained by Moch et al. (1974), Ahmed (1977) and El-Askalany (1981); and slightly higher than that recorded by Mansour (1979) and Hamdy et al. (1984). It is also evident that the infestation rate among males and femals are nearly equal.

Infestation rate of lung hydatidosis reported herein was higher than that obtained by Hamdy et al. (1984);

while the infestation rates of liver and heart of the examined camels were lower than those reported by the same authors.

Table (2): Incidence of hydatid cysts in male and female slaughtered camels.

Sex	Examined carcasses	Infested carcasses	%	Infested organs					
				Lung		Heart		Liver	
				Nr.	%	Nr.	%	Nr.	%
Males	716	176	24.59	176	100	1	0.57	3	1.71
Femals	284	68	23.95	68	100	-	-	1	1.47
Total	1000	244	24.40	244	100	1	0.57	4	1.64

Results recorded in **Table (3)** show that the incidence of sarcocystic muscle cysts in slaughtered camels were 39.50%, such results were lower than that obtained by El-Afifi et al. (1962), El-Etreby (1970) and Yassien (1984) and slightly higher than those obtained by Hilali and Mohamed (1980). It was also clear that the infestation rate is higher in male than in female carcasses.

Table (3): Incidence of sarcocystic muscle cysts among infested male and female slaughtered camels.

Sex	Examined carcasses	Infested carcasses	%
Males	716	289	40.37
Females	284	106	37.33
Total	1000	395	39.50

Parasites in the Muscles of Slaughtered camels.

Regarding camel trichinosis, the obtained results indicated that the examined sampels were free from Trichinella spiralis cysts. However, infestation of camels with such parasite under natural conditions will remain an exception (Ekhardt et al., 1985).

SUMMARY

One thausand slaughtered camels, 716 males and 284 females, were investigated for detection of the infestation rate with cysticercosis, hydatidosis, sarcosporidiosis and trichinosis.

Infestation rate with Cysticercus dromedarii, hydatid cysts, sarcocystis, and Trichinella spiralis was 0.60%, 24.40%, 39.50%, and 0.0%, respectively.

REFERENCES

1. Afshar, A.; Nazarian, and I. Beghbass-Basser, S.A. (1971): Survey of incidence of hydatid cysts in camels in South. Iran. Brit. Vet. J. 127-544.

2. Ahmed, B.A. (1977): Some biological studies on Echinococcus granulosus. M.V. Sc. Thesis Zagazig Univ. Egypt.

3. Angelotti, S. (1947): Contribute cosistics sut cisticercus dromedarii, pellegrini, 1945, Boll. Soc. Ital. Med. Lgiene Trop. (Sezione Eritrea, I, 544-549. (Cited after Kutzer and Hinady,1968).

4. Bommer, W.; Kaiser, H.; Merzerian, H. and Pottkamper, G. (1980): Outbreak of Trichinellosis in a youth centre of Nieder-Sochsen by dried imported camel meat. Abstracts world Congress Food Borne Infections and Intoxication Berlin West, 170, 30.

5 . Dada, B.J.O. & Belion, E.D. (1979): Prevalence of bovine cysticercosis and Hydatid disease in food animals slaughtered in soto state, Nigeria International Journal of Zoonoses 6, 155.

6 . El-Afifi, A. (1962): Cysticercus tenicollis infection in the liver of a camel. Vet. Med.J Fac. Vet. Med. Cairo Univ. 8, 171.

7 . El-Askalany, M.A. (1981): Evaluation of some seriological tests on diagonsing Hydatid cysts in camels. M.V.Sc. Thesis Fac. of Vet. Med. Cairo Univ.

8 . El-Badawi, E.K., Esia, A.M. Slepenev, M.K. and Saad, M.B.A. (1979): Hydatosis of domestic animals in the central region of Sudan. Bulletin of Animal Health and Production in Africa 27,249.

9 . El-Etreby, M.F. (1970): Myocardial sarcosporidiosis in the camel. Path. Vet. 7: 7-11.

10. El-Mossalami, E. and El-Nawawi, F. (1971): Cystcercosis among slaughtered camels. Egypt. Vet. Med. J. Vol. 21, No. 19, 47-76.

11. El-Nawawii, F. (1977): Trichinella spiralis in Egypt Procceeding of 7 Intern. Symposium W.A.V. F.H.in Garmischpartenkirchen, West Vol. 1, 170-176.

12. Gracey, J.F. (1986): Meat hygiene 8th Ed. The English Language Book Society and Bailliere Tindall, London.

13. Hamdy, M.; El-S. Essa, M. and Koudair, M.H. (1984): Parasites in slaughtered camels. Vet. Med. J. Vol. 32, No. 3, 131-141.

14. Hilali, M. and Mohamed, A. (1980): Dog (canis familiaris) as the final host of sarcocystis cameli (Mason, 1910) Tropenmed. Parasit. 37, Heft 2, 213-214.

15. Kalyakin, N.N. and Zasukhin, D.N. (1976): Distribution of sarcocystis (protozoa: Sporozoa) in vertebrates. Folia parasitological (PRAHA) 22 (4): 289-307.

16. Mansour, N.Kh. M. (1979): Hydatidosis in food animals slaughtered at Cairo abattoir. M.V.Sc. Thesis Fac. of Vet. Med. Cairo Univ.

17. Mason, F.P. (1910): Sarcocysts in the camel in Egypt. J. Comp. Patho. Therap. 23 (1910) 168-176.

18. Moch, R.W.; Coknellus, J.B. Boulous; A. Botros; M. Bakoum, I.S. and Mohamoud A.U. (1974): Serological detection of echinococal infection in camels by indirect haemagglutination (I.H.A.) and latex agglutination (LA) test. J. Egypt Public. Health. Ass. 49, 146.

19. Morcos, W.H.; Mikhail, E.G. and Youssef, M.M. (1978): The first diagnosed case of trichinosis in Egypt, J. Egypt. Soc. of Parasit., 8 (1) 121-129.

20. Nomani, A.A. (1920): A new armed hydatid in camel Agric. J. Egypt., 10:69.

21. Pellegreni, D. (1945): II Cysticercus dromedarii SP and Med. Camels ekelative cisticercosis Boll. Sox. Ital. Med. Igiene Trop, 7, 317-324.

22. Sedik, M.F.; Roushdy, S. El-Sawah, H. and Ezzat, N. (1978): Trichinosis in Egypt. Egypt. Vet. Med. J. 26 (26), 185-188.

23. Selim, M.K.; El-Refaii, A.H. El-Amrousi, S. and Hosny, Z. (1970): Studies on the various parasites harbouring imported animals to U.A.R. with particular reference to their pathology. Vet. Med. J. 17 (18) 173-193.

Tadros, G.; Iskander, A. and Amira, R. (1975): Trichinosis among swine in Egypt. I.T. spiralis in swine in Egypt. Zool. Soc. Egypt. Bull 27, 104-108.

Troncy, P.M. (1961): Echinoccus-Hydatidose dans le bass in Tohadien. Thesis. Ecole Nat. Vet. Alfort, Paris, 157.

Wahby, M.M. (1938): Summary of bladder worm cysts in Egyptian meat animals. Agricultural J. of Egypt. 2 (10): 1064-1075.

Yassien, M.A.M. (1984): Muscular parasites in slaughtered camels. Ph. D. Thesis Faculty of Vet. Med. Cairo University.