

النسبة الإحصائية لحوصلة الأيكينوكوكس في الحيوانات المذبوحة بسلخانة القاهرة

م. ف. صديق ، س. رشدي ، م. زيدان ، م. عبد السلام

الملخص العربي

تبين من النتائج أن نسبة الإصابة بالحويصلات القنفذية بين ذبائح الجمال ، البقر ، الجاموس ، عجول الجاموس ، الأغنام والخنازير ، كانت ٢٥٪ ، ١٠٪ ، ٠.٥٪ ، صفر٪ ، ٢٪ ، ٤٥٪ على التوالي .

وكانت الرئتين والكبد هي الأعضاء المصابة في معظم الجالات .

أما بالنسبة لتوزيع الأنواع المختلفة من الحويصلات بين الأعضاء المصابة فقد تبين تواجد الحويصلات الفردية الخصبة في كل الأعضاء المصابة ، بينما انحصر تواجد الحويصلات العقيمة في أعضاء الجمال ، الأغنام والخنازير . أما الحويصلات المركبة فكانت في رئات الجمال وعضلات الأغنام (الربع الخلفي) .

مجموعه کتابخانه و اسناد خطی در کتابخانه ملی و اسنادخانه وزارت فرهنگ و ارشاد اسلامی
کتابخانه ملی و اسنادخانه وزارت فرهنگ و ارشاد اسلامی

تاسیس شده در ۱۳۰۲ خورشیدی و در ۱۳۰۳ شمسی

دفتر مرکزی

مجموعه کتابخانه و اسناد خطی در کتابخانه ملی و اسنادخانه وزارت فرهنگ و ارشاد اسلامی
کتابخانه ملی و اسنادخانه وزارت فرهنگ و ارشاد اسلامی

مجموعه کتابخانه و اسناد خطی در کتابخانه ملی و اسنادخانه وزارت فرهنگ و ارشاد اسلامی
کتابخانه ملی و اسنادخانه وزارت فرهنگ و ارشاد اسلامی

INCIDENCE OF ECHINOCOCCOSIS AMONG SLAUGHTERED ANIMALS AT CAIRO ABATTOIR

(With 2 tables)

By

[M.F. Sedik, S. Roushdy, M. Zidan and* M. Abdel-Salam**

(Received at 1.6. 1976)

SUMMARY

The incidence percentages of Echinococcosis among 2000 camels, 4000 cattle, 2000 buffaloes, 1000 buffalo calves, 5000 sheep and 2000 pigs slaughtered at Cairo abattoir proved to be 1.25, 0.1, 0.05, 0.0, 0.2 and 0.45 respectively.

The lungs and livers are the organs most frequently infested.

The frequency distribution of different types of cysts among infested organs, points out that the fertile unilocular cysts found in all infested organs, while the sterile type was found in the organs of camel, sheep and pigs. Multilocular cysts were detected in the lungs of camels as well as in the muscles of sheep (Hind quarter).

Specific control measures, to safeguard human from being infected are discussed.

INTRODUCTION

Echinococcosis is a disease affecting man and domesticated mammals. It is caused by cystic stage of *Echinococcus granulosus*, whose definite host is carnivora, commonly the dog.

Hydatid disease, being found in varying degrees all over the world, constitutes an important public health and economic problems. Man, as an intermediate host commonly gets infected through ingestion of ova from contaminated fingers or food with dog faeces that may develop into hydatid cyst in the human liver or lung. The condition becomes very serious if the cyst develops in the brain (BUCHSBAUM, 1971). Anyhow, the disease in man is most extensive and may be endemic in countries where sheep - dog - man relationship prevails.

Economically, the losses due to condemnation of affected organs, in food animals, may be very considerable as it constituted an annual loss of £ 7 millions in Jugoslavia (THORNTON and GRACEY, 1974).

* General director of Meat Company, Cairo.

** Meat Inspector at Cairo Abattoir.

The distribution of hydatidosis throughout the world shows considerable variations. TURNER *et al.* (1936) held the view that 20-25% of street dogs in Beirut were infested with *E. granulosus* and that the 15 camels examined were all infested with hydatidosis, CRAIG and FAUST, (1953) stated that 64, 8%, of the 34 camels examined in Lebanon, were infested with hydatid disease. In Egypt, EL-GARHY and SELIM (1957) found that the incidence of Echinococcosis in slaughtered camels at Cairo abattoir was 7.3% in the lung and 0.31% in the liver.

CHANDCER and READ, (1966) stated that hydatids occurred in about 20% of sheep, 40% of cattle and 100% of camels in Middle East.

Typing of hydatid cysts has been reported by POOLE and MARCIAL ROJAS, (1971) who found two species of Echinococci, *E. granulosus* and *E. multilocularis*. The latter, which is responsible for the formation of the alveolar (multilocular) type of cyst, is restricted to small geographic areas. THORNTON and GRACEY (1974) stated that there are two varieties of hydatid cysts, the multilocular and the unilocular which are the commonest types found in the food animals. Hydatids which give rise to brood capsules or daughter cysts are described as fertile, others are known as sterile.

Owing to the very limited data recorded in the last decade concerning this problem, this work was planned to investigate the incidence percent ge of the disease, its types and locations in slaughtered food animals.

MATERIAL AND METHODS

During the routine post-mortem examination of the slaughtered animals at Cairo abattoir, carcasses infested with hydatidosis were thoroughly examined for detection of hydatids, in various locations. Detected cysts were further classified morphologically into multilocular and unilocular cysts. The contents of the unilocular cysts were examined macroscopically and microscopically, when necessary, for detection of the parasite scolices. Accordingly, such cysts were then classified into fertile and sterile ones. Sex and age of examined food animals were recorded.

RESULTS AND DISCUSSION

From the results given in table 1, it is evident that the highest incidence of the disease (1.25%) was found in camel carcasses. A finding that may be attributed to the fact that camels are nearly always in close association with dogs, and most of slaughtered camels were old.

Among the 4000 carcasses of slaughtered cattle, only four carcasses were infested, While the cysts could be detected in the liver of one buffalo carcass (0.05%). No hydatids could be detected among slaughtered calves (1000 calves). Realizing that the incidence of the disease increases with advanced age; and as buffalo calves are usually slaughtered below two months old, and

most of cattle and buffaloes were comparatively young (below 3 years old), hence such low incidence is expected

The incidence of the disease among slaughtered sheep (5000, mostly young) was 0.2% and the cysts were met with frequently in the liver but rare in the kidney and muscles. While the prevalence of the disease among pig carcasses examined (2000) was comparatively high (0.15%). Anyhow, the results reported here - in allow to conclude that camels, sheep, pigs and cattle are among the food animals mostly infested. Moreover, hydatids were more frequently localised in the lungs of camels, cattle and pigs but in sheep the liver was the organ of choice. This finding substantiates what have been reported by MILLER (1956) and THORNTON and GRACEY(1974).

The frequency distribution of different types of cysts among infested organs given in table 11, points out that all types of cysts occurred in the camel lungs in varying percentages ranging from 0.1 to 0.35. Both fertile and sterile unilocularis cysts (1.05%) were prevalent in the lungs, liver and heart. While the incidence of multilocularis cyst, localised in the lungs were rate (0.1%). Fertile unilocularis cysts were found in sheep, pig, cattle and buffaloes organs while the sterile cysts were met with in sheep and pigs. Multilocular cysts could be detected in the muscles of sheep (hind quarter).

The maximum number of cysts per organ was found in the lungs of camel (Table 11).

CONCLUSION

From the results achieved, one may safely conclude that camels, sheep and pigs constitute the chief source of infection as fertile unilocular cysts prevail in their infested organs.

As the disease is transmitted to man through close contact with dogs or through contaminated foodstuffs, therefore eradication of stray dogs, man treatment and prophylactic measures against infection should be taken by concerned authorities

ACKNOWLEDGEMENT

The authors are deeply indebted to Prof. Dr. A. ROUSHDY and Prof. Dr. EL-MOSSALAMI for their valuable help and encouragement.

TABLE I Incidence of Echinococcosis among examined animals.

Species	No. of animals examined	Sex y	& age ♂	♀	No. of animals infested.	Incidence of infestation.	No. of lungs infested.	%	No. of livers infested.	%	No. of hearts infested.	%	No. of kidney infested.	%	Muscles	%
camels	2000	696	858	446	25	1.25%	15	0.75	7	0.35	3	0.15	—	—	—	—
Cattle	4000	3790	170	40	4	0.17%	3	0.075	1	0.025	—	—	—	—	—	—
Buffalo	2000	1122	120	758	1	0.05%	—	—	1	0.05	—	—	—	—	—	—
Buffalo Calves	1000	1000	—	—	—	Nil	—	—	—	—	—	—	—	—	—	—
Sheep	5000	4023	923	54	10	0.2 %	—	—	8	0.16	—	—	1	0.02	Hind quarter	0.02
Pigs	2000	753	—	1247	9	0.45%	7	0.35	1	0.05	—	—	1	0.05	—	—

y = Young animals (below 5½ years old in camels, 3 years incattle & buffalo and 2 years in sheep).

o = Old animals (more than 5½ years in camel, 5 years in cattle & buffaloes and 2 years in sheep).

TABLE II.—The frequency distribution of different types of cysts among infested organs

No. of	Species organs infested	Type of cyst									
		Fertile		Unilocularis		Sterile		Mixed(fertile & sterile)		Multilocularis	
		Incidence of infection (%)	No. of Cysts,organ	Incidence of infec. (%)	No. of cysts	Incidence organ of infection (%)	No. of cysts	Incidence organ of infection (%)	No. of cysts	Incidence organ of infection (%)	No. of cysts organ.
Camels	15 Lung	0.2	9-39	0.35	7-32	0.1	53-105	0.1	14-23		
	7 Liver	0.2	1-2	0.15	6-33						
	3 Heart	0.05	1	0.10	1						
Cattle	3 Lung	0.075	1	—	—						
	1 Liver	0.025	1	—	—						
Buffaloes	1 Liver	0.05	1	—	—						
Buff. Calv.	—	—	—	—	—						
Sheep	8 Liver	0.12	1-3	0.04	2						
	1 Kidney	0.02	1	—	—						
	Mus of H.Q.	—	—	—	—				0.02	3	
Pigs	7 lung	0.15	2-3	0.20	1-2						
	1 Liver	—	1	0.05	1						
	1 Kidney	0.05	1	—	—						

Q. = hind quarter.

REFERENCES

- Buchsbaum, R. (1971). *Animals without backbones*, Vol. I., C. Nicholls and Company Ltd. Britain.
- Chandler, A.C. and Read C.P. (1966). *Introduction to Parasitology 10th Edition*. John Wiley & Sons, Inc, New York "London" Sydney.
- Craig, C.F. & Faust, E.C. (1953). *Clinical Parasitology* Lea & Febiger, Philadelphia, U.S.A
- El-Garhy M.T. and Selim M.K. (1957). Incidence of Echinococcosis in camels slaughtered for meat inspection in Egypt, *Vet. Med.J.*, IV, 191-200.
- Miller A.R. (1958). *Meat Hygiene 2nd edition*. London. Henry Kimpton.
- Poole John B. Marcial Rojas and Paul A. (1971). *Echinococcosis. Pathology of Protozoal & Helminthic diseases*. The Williams and Wilkins Company. U.S.A.
- Thornton, H. and Gracey, J.F. (1974) : *Textbook of Meat Hygiene*. 6 th Edition. Bailliere-Tindall & Cassell.
- Turner, E. L., Dennis, E.W. and Kaeis I. (1936). The incidence of hydatid disease in Syria. *Trans. Roy. Soc. Trop. Med. & Hyg.* 30, 225-228.
- Authors adress : Dr M.F. Sedik Dept of Hygiene, Fac. vet. Med Cairo.