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**INCIDENCE OF HYDATID CYSTS IN CAMELS
 SLAUGHTERED IN UPPER EGYPT.**

(With 3 Tables)

By

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**استبيان مدى تواجد الدودة القنفذية في ذبائح
 الجمال بصعيد مصر**

**على لطفى ، طلعت الخطيب ، شوكيت فتحى
 حسين يوسف ، محمد سيد**

تم فحص عدد ٩٠٠ ذبيحة من الجمال بمجازر محافظة أسيوط المختلفه فى صعيد مصر فى
 الفترة ما بين يناير ١٩٩٠ حتى يناير ١٩٩١ . ووجد أن نسبة الاصابه فى الذكور كانت ٦ ر ٣٣ % بينما
 كانت ١ ر ٢٣ % فى الاناث ، حيث تبين أن نسبة الاصابه فى الجمال ذات العمر الكبير (أكثر من خمس
 سنوات) أكثر منها فى ذبائح الجمال الصغيره فى السن .
 ومن ناحيه أخرى وجد أن نسبة الاصابه فى الرئتين ، الكبد ، الطحال ، القلب والكلى كانت
 ٧٢ ر ٨١ % ، ٦٥ ر ٤١ % ، ٧٩ ر ١٠ % ، صفر ، ٧٠ ر ١٠ % على التوالى وتم دراسة خواص الحويصلات القنفذيه
 من حيث الشكل والحاله والنوع فى كل عضو من الأعضاء المصابه على حده .

Sample No.	Organ	Number of Cysts	Percentage (%)
1	Unypable	0	0.00
2	Unypable	0	0.00
3	Unypable	0	0.00
4	Unypable	0	0.00
5	Unypable	0	0.00
6	Unypable	0	0.00
7	Unypable	0	0.00
8	Unypable	0	0.00
9	Unypable	0	0.00
10	Unypable	0	0.00
11	Unypable	0	0.00
12	Unypable	0	0.00
13	Unypable	0	0.00
14	Unypable	0	0.00
15	Unypable	0	0.00
16	Unypable	0	0.00
17	Unypable	0	0.00
18	Unypable	0	0.00
19	Unypable	0	0.00
20	Unypable	0	0.00
21	Unypable	0	0.00
22	Unypable	0	0.00
23	Unypable	0	0.00
24	Unypable	0	0.00
25	Unypable	0	0.00
26	Unypable	0	0.00
27	Unypable	0	0.00
28	Unypable	0	0.00
29	Unypable	0	0.00
30	Unypable	0	0.00
31	Unypable	0	0.00
32	Unypable	0	0.00
33	Unypable	0	0.00
34	Unypable	0	0.00
35	Unypable	0	0.00
36	Unypable	0	0.00
37	Unypable	0	0.00
38	Unypable	0	0.00
39	Unypable	0	0.00
40	Unypable	0	0.00
41	Unypable	0	0.00
42	Unypable	0	0.00
43	Unypable	0	0.00
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46	Unypable	0	0.00
47	Unypable	0	0.00
48	Unypable	0	0.00
49	Unypable	0	0.00
50	Unypable	0	0.00
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61	Unypable	0	0.00
62	Unypable	0	0.00
63	Unypable	0	0.00
64	Unypable	0	0.00
65	Unypable	0	0.00
66	Unypable	0	0.00
67	Unypable	0	0.00
68	Unypable	0	0.00
69	Unypable	0	0.00
70	Unypable	0	0.00
71	Unypable	0	0.00
72	Unypable	0	0.00
73	Unypable	0	0.00
74	Unypable	0	0.00
75	Unypable	0	0.00
76	Unypable	0	0.00
77	Unypable	0	0.00
78	Unypable	0	0.00
79	Unypable	0	0.00
80	Unypable	0	0.00
81	Unypable	0	0.00
82	Unypable	0	0.00
83	Unypable	0	0.00
84	Unypable	0	0.00
85	Unypable	0	0.00
86	Unypable	0	0.00
87	Unypable	0	0.00
88	Unypable	0	0.00
89	Unypable	0	0.00
90	Unypable	0	0.00
91	Unypable	0	0.00
92	Unypable	0	0.00
93	Unypable	0	0.00
94	Unypable	0	0.00
95	Unypable	0	0.00
96	Unypable	0	0.00
97	Unypable	0	0.00
98	Unypable	0	0.00
99	Unypable	0	0.00
100	Unypable	0	0.00

HYDATID CYSTS, CAMELS & UPPER EGYPT

SUMMARY

A total of 900 slaughtered camels were investigated for the presence of hydatid cysts in different Assiut slaughter houses during the period from January 1990 to January 1991. The incidence of infestation was 33.6% in male and 23.1% in female. It was observed that the percentage of infestation was higher in old camels (over 5 y.) rather than young cases. The distribution of hydatid cysts in examined lung, liver, spleen, heart & kidney was 228(81.72%), 13(4.65%), 5(1.79%), 0(0) and 3(1.07%), respectively. Also the morphological characters of each collected hydatid cyst in addition to its type and condition were studied in different examined organs.

Keywords: hydatid cyst, camels, Upper Egypt.

INTRODUCTION

Echinococcosis or hydatid disease is a wide spread disease throughout the world, where it is one of the most important parasitic disease transmissible indirectly to man. Egypt imports camels from Sudan and other neighbouring African countries for local slaughter and meat consumption, where the disease is noticed to be more prevalent among them than other food animals. The incidence of hydatidosis among slaughtered camels in Egypt was 31% (EL-KOURDY, 1946), while in Lebanon it was 64.8% (PIPKIN *et al.*, 1949), and low incidence (7.3%) was recorded by EL-GARHY and SELIM (1957) who examined 4135 young camels in Embaba slaughter house in Cairo and found that the average percentages of infestation in the lungs, livers and spleen were 7.303, 0.314 and 0.072, respectively, where lung cysts were ranged from 2x1.6 cm to 6.3x8.5x6.7cm in diameter for the cystic forms always located in the parenchyma as unilocular cysts, while other cysts were found in a necro-calcific state and ranged from 1.7x1.5x1.4cm to 2.1x2.1x2.3cm. SOLIMAN (1962) found that out of 370 inspected camels at Cairo abattoirs, 192(60%) were infested with hydatidosis. In the same year, in Iraq, IMARI (1962) stated that 75% of 68 examined camels were infested with hydatid disease, while BABERO *et al.* (1963) showed that 49.1% out of 55 camels were infested, whereas in Syria, DAILEY and SWEATMAN (1965) recorded that all examined 31 adult camels were infested with about 8 cysts per animal. They revealed that most of cysts

occurred in the lungs, where they were large in size (up to 10cm) and fertile. In Iran, MOBEDI et al. (1970) recorded that 612 (64%) out of 955 camels slaughtered in Teheran abattoir were infested with hydatid cysts, out of them 34%, 24% and 6% were infested in both lungs and liver (heavy infestation), lung only and liver only, respectively. Regarding the condition of the cyst, they found that the fertility percentages of both lungs and liver cysts examined were 75% and 20%, respectively. AFSHAR et al. (1971) found that the incidence of hydatidosis in examined 53 camels was 42.8% low incidence of hydatidosis (1.25% and 7.95%) was reported in Cairo abattoir by SEDIK et al. (1976) and HAMDY et al. (1980), while in Nigeria, LODHAL et al. (1982) examined that of 28 older Indian camels (14-19y.) and the results revealed that, 20 (71.4%) harboured hydatid cysts, and none of the younger (3.5y) were infested. They added that the percentages of infested lung, liver, rumen and spleen were 17%, 15%, 1% and 1%, respectively. Regarding the condition of the cyst, they found that fertile cysts were found in 15.27%, 13.5%, nil and nil of the previous organs, respectively. In North Jordan, AL-YAMAN et al. (1985) and ABDEL-HAFEZ et al. (1986) found that hydatid cysts were present in 8.8% and 10.7% out of 68 and 56 inspected camels, respectively.

MATERIAL and METHODS

Different offals from each of the examined 900 camels were inspected carefully for presence or absence of hydatid cysts and also the degree of involvement in the lungs, livers, spleen, heart and kidneys. The discovered hydatid cysts were finely freed from the surrounding tissues and subjected for the following investigations:

1- Morphological examination: included shape, size, type and condition of each examined cyst.

a. Shape: was described by naked eye appearance of each examined cyst.

b. Size: was estimated by filling a graduated cylinder of 100 ml capacity to its middle with saline, then the cyst was dipped with the help of a thin platinum wire loop until it was completely depressed, and the saline level was read. The difference between the two readings estimates the proper size of the cyst. Then cysts were placed on a ruler divided into centimeters and millimeters to estimate its length, breadth and height.

c. Type: 1) unilocular cyst: which has a central, fluid cavity lined with a germinative layer, surrounded by an intact

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but friable laminated membrane covered with a host tissue capsule. From these 2 layers, daughter cysts may be formed which may remain attached to cysts or fall in the fluid. Sometimes due to some weakening in the fibrous capsule made by the host, some herniation of the mother cyst develops either to the outside forming an "exogenous cyst" or to the inside forming endogeneous daughter cyst, 2) Multilocular cyst: it is a sponge like, growing mass of small separate vesicles embedded in a fibrous tissue. It is not delimited by a capsule formed by the host, and the vesicles contain a gelatinous substance instead of fluid.

d. Condition of the cyst: 1) Fertile: containing protoscolices and/or daughter cysts. 2) Sterile: full of fluid but without protoscolices. 3) Calcified: when the cyst does not contain protoscolices or fluid, but may instead contain cheese-like material with calcium deposits and bacterial contamination.

II- Microscopic examination:

Cysts or portions of infected tissues were preserved in 10% formaline and examined within 30-60 minutes of slaughter for detection of fertility and larval viability. A portion of hydatid fluid from each cyst was aspirated by means of a hypodermic syringe (needle no. 18), then the collected fluid was centrifuged and the last drop with the sediment was mounted on a slide with a cover glass and observed under the microscope for the presence of scolices and broad capsules. When no scolices were found, the whole cyst was open in a petri-dish, where all of the fluid was examined as well as germinal layer for the presence of scolices. When any scolices could not be detected, the fluid reexamined after 24 hours later. Hydatid cysts which did not contain scolices (sterile) were destroyed and discarded.

RESULTS

The obtained results are given in Tables (1), (2) and (3).

DISCUSSION

It is evident from Table (1) that the incidence of hydatid cyst infestation in camels was 31% similar to the findings obtained by *EL-KOURDY*, 1946 (31%) and *GRACEY*, 1985 (31%). On the other hand, higher results were reported by *PIPKIN et al.*, 1949 (64.8%); *SOLIMAN*, 1962 (60%); *BABERO et al.*, 1963 (49.1%);

DAILEY and SWEATMAN, 1965 (100%); MOBEDI et al., 1970 (64%), AFSHAR et al., 1971 (42.8%), DADA et al., 1980 (55.5%) and LODHAL et al., 1982 (71.4%). Lower results were obtained by EL-GARHY and SELIM, 1957 (7.303%), SEDIK et al., 1976 (1.25%); HAMDY et al., 1980 (7.95%); AL-YAMAN, 1985 (8.8%). It has been found that the age of camels plays an important role of infestation with hydatid cysts as the incidence of this investigation of aged camels was 34% while it was 7% in young ones (Table 1). The obtained results was in agreement with many authors who stated that the incidence of hydatidosis increased by age (MOBEDI et al., 1970 and AFSHAR et al., 1971). The increased incidence of hydatidosis depended on the increased frequent of exposure to infestation and this fact explained the lower incidence obtained by EL-GARHY and SELIM (1957) among young camels (7.303%). Concerning the percentage of affected organs with hydatid cysts, it is revealed from Table (2) that lungs, livers and spleen had percentages of 80%, 5% and 2.27%, respectively, while the percentages were 5.73% in both lungs and livers, 1.36% in both lungs and spleen, 0.45% in both lungs and heart, 2.72% in lungs, liver and spleen, collectively. These results agreed with those obtained by other authors who found that the lungs livers were the common organs affected with hydatid cysts (SOLIMAN, 1962 and SEDIK, 1976). Other workers found hydatid cysts in the lungs and livers but not in the spleen (MOBEDI et al., 1970 and AFSHAR et al., 1971).

Morphological characters of each collected hydatid cyst from different organs were evaluated in Table (3), where the hydatid cysts obtained from lungs were mostly oval in shape (60%), round shape (30%) or of variable shapes (10%). On the other hand, liver hydatid cysts were mostly rounded (72.2%), oval (11.1%) and of variable shapes (16.7%) and most of them were present on the surface (72.2%), while 27.8% were found in the parenchyma. Spleen hydatid cysts were mostly rounded (70%) oval shape (20%) and of variable shapes (10%), while kidney cysts were present on the surface (100%) and round in shape (100%).

The fertility rate of hydatid cysts was 66.57% which nearly simulates those obtained by EL-KOURDY, 1946 (68.42%) and SOLIMAN, 1962 (65%).

From the present study, it is evident that in Upper Egypt camels play an important role in the maintenance of high level of hydatidosis as 66.57% of the cysts were fertile.

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Table 1: Incidence of hydatidosis in camels.

Sex	Age	Examined cases	Infested cases	Percentages of infestation
Male	A	600	220	36.66
	Y	75	7	9.33
	Total	675	227	33.60
Female	A	200	52	26.00
	Y	25	0	-
	Total	225	52	23.10
Total	A	800	272	34.00
	Y	100	7	7.00
	Total	900	279	31.00

A = Aged (over 5 years)

Y = Young (up to 5 years)

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Table 2 : Distribution of hydatid cysts in examined organs of infested camels.

Sex	Age	Lung	Liver	Spleen	Heart	Kidney	L		L		L		L		Total
							Li	S	Li	S	Li	S	Li	S	
Male	A	176	11	5	-	2	16	3	1	-	3	6	3	-	220
Male	Y	80	5	2	0	0.9	5.73	1.36	0.45	0	0	2.72	0	0	7
Female	A	45	2	1	0	1	4	0	0	0	0	0	0	0	52
Female	Y	20.45	0.9	0	0	3.84	1.43	0	0	0	0	0	0	0	10
Total		228	13	8	0	3	20	3	1	-	3	6	3	-	279
		81.72	4.65	1.79	0	1.07	7.16	2.11	0.35	0	0	2.15	0	0	32.4

L = Lung
 Li = Liver
 S = Spleen
 H = Heart
 A = Aged (over 5 Years)
 Y = Young (up to 5 year)

Table 3 : Morphological characters of the collected hydatid cysts in camels from the different organs

Organ	No. of cysts examined	Shape		Situation		Measurement/cm			Size (ml)			
		R	Ov	V.S.	Sr	P	Min.	Max.	Mean	Min.	Max.	Mean
Lung	300	90	80	30	225	75	1.5x1x1	8x6x7	4x4x2.95	1.9	70	29.4
Liver	36	26	4	6	26	10	0.8x0.5x0.7	5x5x4	2x1.5x1.4	1.5	50	10
Spleen	10	7	2	1	8	2	2.5x2x2.3	8x5.5x6	3.9x3.4x3.9	10	100	49.5
Heart	1	1	-	-	-	1	-	1x0.9x1 cm	-	-	2 ml	-
Kidney	3	3	-	-	3	-	0.8x0.5x0.7	6x4x5	2.8x2.1x2.2	2	15	6.66

Ov = oval
 R = round
 V.S. = variable shapes
 Sr = surface
 P = parynchyma