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PREVALENCE OF CAMEL HYDATIDOSIS IN RIYADH REGION (SAUDI ARABIA)

(With 3 Tables)

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مدى انتشار الحويصلات المائيه للجمال في منطقة الرياض بالمملكه العربيه السعوديه

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تم دراسة نسبة الاصابه بالحويصلات المائيه (الهايداتدسست) فى الجمال بعد الذبح فى منطقة الرياض بالمملكه العربيه السعوديه وكانت النسبه ٧٢ ، ٤٠ ٪ . وكانت نسبة الاصابه فى الاناث (٧٧ ، ٣٥ ٪) أعلى منها فى الذكور (٣٣ر ٠ ٪). تلاحظ أيضاً أنه الاصابه كانت فى الحيوانات التى عمرها أكثر من ٩ سنوات فقط . وكانت الأماكن المختاره للحويصلات فى الرئه والكبد حيث كانت النسبه ١٨ ، ٤١ ، ٤١ ، ٢٩ ٪ على التوالى . وكان شكل الحويصلات مستديره وبيضاويه وكانت نسبة الخصوبه والتعقيم والتكليس ووجود الصديد ٥٠ ، ٢٧ ر٥ ، ١٧ ر٥ ، ٥٢ ر٥ ، ٢٠ ٪ على التوالى .

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SUMMARY

The incidence of hydatidosis in camels with post. mortem (P.H.) examination was 4.72%. The infection rates with hydated systes were higher in females (30.77) than males (0.33%). There were no cases of hydatidosis in camels under 9 years, but in those over 9 years, the incidence of hydatidosis reached 25.76%. Predilection seats of camel hydatidosis were lungs (41.18%) then liver (29.41%). The hydatid cysts of camels were rounded, oval or variable in shape. The percentage of fertile, sterile, calcified and caseated hydatid cysts of camels were 27.5, 17.5, 52.5 and 2.5% respectively.

Keywords: Prevalence, Camel, Hydatidosis, Riyadh region, Saudi Arabia.

INTRODUCTION

Hydatidosis is considered as a major endemic zoonotic disease in various middle eastern countries in both humans and animals *(MATOSSIAN et al., 1977)*. In Saudi Arabia human hydatidosis was detected in many regions *(ALTREE, 1979 and SIRAJ et al., 1981)*.

This disease was also recorded in Saudi Arabia in a variety of domestic herbivores which act as intermediate hosts for *Echinococcus granulosus (SALEH & GHANDOUR, 1983 in JEDDAH, CHEEMA et al., 1985 in AL-HASSA region and FARAH, 1987* in Gassim).

The present study was conducted to determine the effect of seasonal variations, sex and age of slaughtered camels on the prevalence of camel hydatidosis in Riyadh region. The condition and discribution of hydatid cysts in infected camels was also discussed.

MATERIALS & METHODS

360 camels *(Camelus dromedarius)* of different ages and sexes slaughtered in Modern Riyadh abttoir, were inspected for the detection of hydatid cysts. Tissues infected with hydatid cysts were separately collected. The detected cysts were incised and subjected to macroscopical and microscopical examination for the detection of fertility of the collected cysts.

RESULTS

The incidence of hydatidosis in camels with P.M. examination was 4.72%. Concerning the sex of examined, the rates of infection with hydatid cysts in males and femals were 0.33 and 30.77% respectively. There was no cases of hydatidosis camels under 9 years old, but in those over 9 years the incidence of hydatidosis reached 7.14 and 30.77% in slaughtered males and females respectively (Table I).

The percentage of affected camels with hydatid cysts in lungs liver were (41.18%) & (29.41%) respectively, while in both lungs & liver and (29.41%) in liver (Table II).

Morpholgically, it was found that 20 (50%) hydatid cysts from the collected ones had round shapes, 8 (20%) had oval shapes and 12 (30%) had variable shapes. Dimensions of the detected systs ranged from 3 X 3 X 4 mm to 26.5 X 27 X 32.5 mm.

Concerning the condition of collected hydatid cysts, it was found that the total percentages of fertile, sterile, calcified and caseated cysts were 27.5, 17.5, 52.5 and 2.5% respectively.

In lungs 31.82, 13.63, 50 and 4.55% of hydatid cysts the percentages were fertile, sterile, calcified and caseated respectively. While in liver the percentages of fertile, sterile and calcified hydatid cysts were 22.22, 22.22 and 55.56% respectively (Table III).

DISCUSSION

The prevalence of hydatidosis in camels *(Camelus dromedarius)* slaughtered in Riyadh region was 4.72%. This result agreed with that obtained by *FARAH (1987)* who mentioned that the percentage of infection was 4.% in Gassim region. Other workers in Saudi Arabia recorded lower percentages (1.34% by *AL-ISSA and AL-ZEFTAWI (1986),* and from 0.01 to 1.22% by *CHEEMA et al. (1985)* or even did not detect hydatidosis in camels *(KAWASMEH et al. (1984)* in Saudi Arabia at all. On the other hand, *AL-ISSA and HARIDY, 1987* recorded a higher percentage (13%) than that obtained in our results.

The incidence of camel hydatidosis in Saudi Arabia was markedly lower than that of the surrounding contries such as Egypt (50.6%), Iraq (72%), Kuwait (22.06%), Jordan (10.7%), Sudan (45%), Libya (27.2%), Pakistan (58.9%) and Iran (42.8%) *(ABD-EL-WAHED, 1991; WAJDI and NASSIR, 1983), HASSOUNAH and BEHBEHANI, 1976; ABDEL-HAFEZ et al. (1986; SAAD et al. 1983; ABOUDAYA, 1985; QASIM et al. 1990 and AFSHAR et al. 1971).*

The low incidence of hydatidosis in Riyadh region could be due to strict hygienic measures applied in the abattoirs and

the absence of stray dogs. Also Riyadh region is subjected to hot and sunny weather most of the year. This opinion was supported by *WACHIRA et al. (1991)* who proved that *Echinococcus granulosus* eggs lost their viability in less than two hours in the sun.

Concerning the sex of examined animals, it was found that the percentage of hydatid infection was higher in females than males. This result was similar to that mentioned by *AL-YAMAN et al. (1985)*, while an opposite result was recorded by *EL-MOSSALAMI et al. (1986)*, but *AFSHAR et al. (1971)* did not found significant variations with respect to the sex.

Our study declaired also that hydatidosis was detected only in aged camels. This was in accordance with that mentioned by *ABDEL-HAFEZ et al. (1986) and EL-MOSSALAMI et al. (1986)*. It should be mentioned that in Saudi Arabia the number of aged slaughtered female camels exceeded greatly that of males and there were no young femals to be slaughtered by law.

In the present study the predilection seats of hydatidosis in camels were primarily the lung then the liver. This result agreed with that otained by *HIGGINS (1986); FARAH (1987) and IQBAL et al. (1989)*. This might be attributed to the narrow size of lung capilaries and spongy texture of lung tissues where the oncopheres remained and developed to hydatid cysts. Another opinion by *EL-ASKALANY (1983)* who believed that camel strain of Echinococcus granulosus has more affinity for the lungs than other organs. On the other hand our results did not agree with that obtained by *AL-ISSA and AL-ZEFTAWI (1986)*.

The collected hydatid cysts were mostly rounded in shape. This agree with that mentioned by *SOULSBY (1973)*. The dimensions of the detected cysts resembled those obtained by *ABD EL-WAHED (1991)*.

Concerning the site of fertile hydatid cysts, it was found that the percentage of fertile cysts was higher in lungs (31.82%) than in liver (22.22%). Simialr results were obtained by *EL-LAMI et al. (1986) and ABD EL WAHED (1991), WHILE HIGGINS (1986)* mentioned that the liver cysts were more likely to be fertile than cysts occuring in the lungs.

The percentage of fertile hydatid cysts in our study was much lower (27.5%) than that mentioned in other countried 67.7% in Turkana *(MACPHERSON 1983)*, 36.86% in Pakistan *(QASIM et al., 1990) and 55.7% in EGYPT by ABD EL WAHED 1991)*. These results lead us to think that camels in Sudi Arabia contributed little or nothing in the life cycle of Echinococcus granulosus as mentioned by *HIGGINS (1986)*.

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Table (I): Effect of sex and age of camels on hydatid infection.

Sex	Less than 3 years			3 to less than 9 years			9 years and more			Total		
	NO.	+ve	%	No.	+ve	%	No.	+ve	%	No.	+ve	%
Male Camels	173	-	-	121	-	-	14	1	7.14	308	1	0.33
Female Camels	-	-	-	-	-	-	52	16	30.77	52	16	30.77
Total	173	-	-	121	-	-	66	17	25.76	360	17	4.72

Table (II): Distribution of hydatid cysts in different organs.

Sex	No. of infected camels	Site of infection					
		Liver		Lung		Liver & Lung	
		No.	%	No.	%	No.	%
♂	1	-	-	1	100	-	-
♀	16	5	31.25	6	37.50	5	31.25
Total	17	5	29.41	7	41.18	5	29.41

Table (III): Condition of collected hydatid cysts in different organs of camels.

Organ	No. of cysts examined	Fertile	Sterile	Calcified	Caseated
Lung	22	7	3	11	1
%		31.82	13.63	50.00	4.55
Liver	18	4	4	10	-
%		22.22	22.22	55.56	
Total	40	11	7	21	1
%		27.5	17.5	52.5	2.5