Prevalence of Hydatosis in Sheeps in Thi-Qar Province South of Iraq

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Abstract

Internal organs of 212 sheeps were examined. 96 males and 116 females, 2-5 years old, slaughtered at Al_Naisiyra city an abattoir from April to September end 2006 for detection of hydatid infection. The total rate of infection was 22.14%, 21.875% in males and 22.413% in females. The results of study showed higher prevalence of infection among aged sheeps in compression with younger animals. Distribution of cysts among organs varied from 55.319% in liver, 21.276% in lung, 21.276% in both of them and 2.127 in spleen.The results of this study showed that the higher rate of infection was in August 26.315 while the lower rate of infection was in September.

Key words: Hydatosis, *Echinococcus granulosus*, sheep.

Introduction

Hydatid disease is caused by cestoda *Echinococcus granulosus* of 5.7 mm length with a scolex bearing four suckers and with body containing 2-6 proglottids (terminal segments), this worm lives in dog intestine [1]. The adult worm in dog intestine was discovered by Hartmann (1695) and distributed throughout temperate and subtropical regions of world [2]. The proglottids (terminal segments) release eggs that are passed in feces, after infection by an intermediate host such as sheep, goats, swim, cattle, horse, and man, the eggs hatch in the small bowel and release an oncosphere (hexacanth embryo) that penetrate the intestinal wall and migrates thought the circulatory system into various organs, especially the liver and lung, in these organs the oncosphere develops into cysts that gradually enlarges [3]. Sheeps are more sensitive to the disease; its distribution is normally associated with under developed countries, especially in rural communities, where man maintains close contact with dog definitive host which may act as intermediate host [4]. Hydatidosis occurs in all breeds, sex, and ages of sheep but animals of 5 years of age and older have higher infection rates and greater of cysts/ animals [5] heavily infested sheep are undernourished, their wool is strangely and a characteristic cough is noted [6] with signs of weakness, anorexia, dyspnea, loss of weight, and finally death [5]. The sheep strain is the main cause of infection in human [7]. In the endemic Mediterranean area sheep and dromedaries are intermediate host [8]. Hydatidosis is wide spread parasitosis and causes a great health problem in many countries. The rate of infection in Kuwait as example was 50% and 0.2– 38% in the other countries [3]. 56% in Bangladesh [10] , 20% in Spain [11] , 2.5% in England [12] and 2.5 – 90% in Australia, Bulgaria, United state, Canada, middle east [13] and finally in Iraq 30% [4].

Materials and Methods

Two-hundred-twelve of animals were examined in central-Nasiriya abattoirs which represent the main slaughtering place for all provinces by visiting at weekly intervals during period from April to September end 2006. Post-mortem examinations of slaughtered animals were carried out and internal organs were checked for the presence of hydatid cysts. The data, the number of total and infected animals were recorded, as were the age and sex of infected animals [15]. Information on maximum and minimum temperature, humidity and rainfall was collected from the metrological records of Thi-Qar province during study periods. Month prevalence was recorded for this purpose. The prevalence in relation to temperature, humidity, age, sex was also defined.

The Results and Discussion

During the study period (April-September end 2006) show that two hundred-twelve slaughtered sheeps were examined of which 22.14% were infected with hydatid cyst (Table 1).

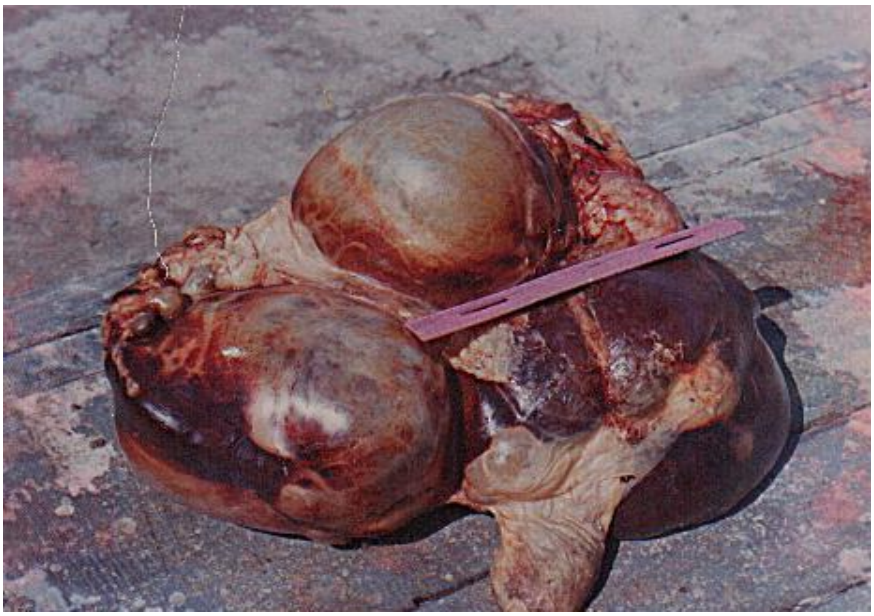

Figure (1): Sheep liver infected with hydatid cyst at age 4-years.

Table (1): Epidemiology of Hydatiosis in sheeps.

Age-year	No. examine	No. infected	%
2-3(3>)	74	15	20.27
3-4>	67	13	19.40
4-5	71	19	26.760
average	212	47	22.14

The occurrence of hydatidosis was more frequently recorded in adult sheep 4-5 years (26.76%) in 3-4> years old (19.40%) than in younger sheep less than 3 years old (Table 1). Table 2 indicates that females infestation constitutes (22.413%) which in higher than male (21.875%).

Table (2): Sex wise prevalence (%) of hydatiosis.

Sex	No. examine	No. infected	%
Male	96	21	21.875
female	116	26	22.413
	212	47	22.144

It was also noticed that distribution of cysts among visceral organ in examined sheep carccas varied from (55.319%) in liver (21.276%) in lungs, (21.276%) in both of them and (2.127%) in spleen (Table3).

Table (3): Hydatid cyst Localization in visceral organs.

Organs	No. of infect.	%
Liver	26	55.319
Lung	10	21.276
liver and Lung	10	21.276
Spleen	1	2.127
Kidney	-	-
Other organs	-	-
Total	47	100%

Among the slaughtered sheep highest prevalence was recorded during August (26.315%) followed by July (23.529%) and June (22.857%). The lowest prevalence (18.918%) was recorded during September (Table 4).

Table (4): Month – prevalence (%) of hydatidosis in sheeps.

Month	No. examine	No. infected	%
April	35	7	20.000
May	33	7	21.212
June	35	8	22.857
July	34	8	23.529
August	38	10	26.315
September	37	7	18.918
Average	212	47	22.14

The occurrence of hydatidosis of hydatidosis in on area is influenced by many factors therefore the higher prevalence of sheep hydatidosis in Thi-Qar province compared with other authorizes as 6% in Baghdad [16] 5.5% in Mousl [17],16% in Diwanyia [18] 13.87% in Samawa city [19] %114.05 finally in Thi-Qar province in last study [20] may be due to the specific geographical position of Thi-Qar province and un-controlled sheep trading across the borders with surrounding countries where the H.D is even more prevalent, in addition that sheep smuggling across the borders has increasing during and after the war which took place in 1991 leading to increase in prevalence rate and also in the rural areas people tend to slaughter sheep by themselves violating the rules of health authorities in addition to that in Iraq the life cycle is confined between stray dog sheep and man [1] then the disease in Iraq is still hyperendemis and is considered to be one of most serious helminthes disease in the country specially in marsh area in the south of Iraq. Animals above three years old were significantly more frequently affected than those under three years. These findings accord with those of [18] [5] and [21]. Our recorded findings agree with opinion of above mentioned workers. The higher occurrence in older animals might be due to lowering of resistance due to environmental factors, increase the chance of infection in addition to decline of body immunity. Both sex were affected in present study, but females more than male, These results may be due to number of slaughtered female at old ages was more than male and lowering of female resistance due to stress that result from pregnancy, Parturition and milk production. Granulosus infection depends on the number, size, developmental stage and location [22], In the present study the higher infection rat was located in liver (55.319%) then in lung (21.276%) and (21.276%) in both lung and liver our findings corroborate the opinion of many worker[19] [23] [16]. These results may be due to delicate nature of liver cells and enlargement of lumen portal vessels when the hexacanth embryos (oncospheres) pass through the wall of intestine and travel via the portal vein to liver in addition to that liver was regarded as the nearest first capillary filter [6]. Some pass through the small capillaries to reach the lung and develop into hydatid cysts [5]. From the results of present study there appears to increase

the infection-rate at August .the reason may be to that Spring (April and May) was favorable conditions to hexacanth development and infection, therefore the infection –rate increase at August because hydatid- cyst needs three-mouths to develop to (10) cm largamente [5]. In conclusion, control programs for HD will work only through a combine all efforts between all the countries in the region, stray dog should be eliminated. Sheep should be slaughtered in slaughter house only not in the farms, street, and houses.

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انتشار مرض الأكياس العدرية (المائية) في أغنام محافظة ذي قار جنوب العراق

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الخلاصة

فحص 212 رأسا من الأغنام، 96 ذكر و116 أنثى، تراوحت أعمارها بين 2-5 سنة، مذبوحة في مجزرة الناصرية للمدة من نيسان لغاية نهاية أيلول 2006، للكشف عن إصابتها بالأكياس العدرية. وجد أن نسبة الاصابة 22.16%، وبلغت نسبة إصابة الذكور21.875% والإناث 22.413%. كانت الأغنام في الأعمار المتقدمة أكثر عرضه للاصابة وبنسبة 26.760% في 4-5 سنة مقارنة مع الأعمار الصغيرة. انتشرت الأكياس العدرية بين مختلف الأعضاء وبنسب 55.319% في الكبد، 21.276% في الرئة، 21.276% في الكبد والرئتين معا، 2.127% في الطحال. وبلغت أعلى نسبة للاصابة 26.315% في آب وأوطأ نسبة في أيلول.