

## Hepatic Hydatidosis in man and livestock in Nassiriyah, Iraq

Mahdi, M. Thweni<sup>1\*</sup> and Lamia, J. Yassen<sup>2</sup>

<sup>1</sup>PhD. Path. Department of pathology, College of Nursing, Thi-Qar University

<sup>2</sup>M.Sc. path. College of medicine, Thi- Qar, University

**Abstract:** Human hepatic hydatidosis was studied in 27 surgically cases provide at Hospital of Nassiriyah during 2007. The age of the patients varied from 12 to 60 years, the greatest numbers of cases were in the age group 12- 40 years and most of them were rural areas. There were 2 females and 7 males. The ultrasounds were positive in 27 of 27 cases (100%). A survey on animal's hepatic hydatidosis at Nassiriyah abattoir during the first ten months of 2007. A total of 8262 slaughtered animals inspected and results revealed that 160 (5.9%) of 2704 sheep and goat, 331 (7.03%) of 4670 cattle, 29 (6.75%) of 429 buffaloes and 6 (1.3%) of 459 camel were found infected. The structure and pathological changes of these cysts has been discussed.

**Keywords:** Hydatid cysts, Hydatidosis, Echinococcus, Histopathological changes.

### Introduction

Hyadtid most often caused by the parasite *Ecchinococcus Granulosus*. However, on the bases of WHO/FAO, the disease is consider as a majority zoonosis having a world wide distribution in Mediterranean and tropical hydatid disease being known to be present and relatively frequent in man, and is recognized by countries, as well as in some parts of the world. In our country, the disease is caused by *Ecchinococcus Granulosus* but multilocular cyst of *E. Multilocularis* has also been recoveries from the liver of a woman in Erbil<sup>1</sup>, Many workers have shown that Iraq occupies an unfortunately high position among countries in which hydatid disease is present<sup>1-6</sup>, the disease is indeed, less common than that in the neighboring of Syria, but is more common than in Egypt<sup>7</sup>, surgically confirmed cases of human hepatic hydatidosis have been studied in Basra, Mosul and Baghdad<sup>8,9,10</sup>, and it has been provide that the disease is enzootic in many parts of Iraq. Some workers were refer to that the data from the hospital records is still consider the most dependable source of information of human hydatidosis<sup>11</sup>.

Other researchers, investigated in Iraq, have reported on the common occurrence of adult *Ecchinococcus Granulosus* in the stray dogs and on the hydatid disease caused by its metacestoda in man and livestock<sup>7,12</sup>.

Due to paucity of such data from Nassiriyah province, Iraq, the present our study was undertaken to be carried out to determine the levels of hydatidosis in this city, concerned with both human and animal's hepatic hydatidosis upon over a period of one year.

### Materials and Methods

During the year 2007, 27 cases of hepatic hydatidosis in man were studied and operated at the teaching hospital of Nassiriyah province, for each patient, data regarding the age, gender, area, occupation, the present observation of preoperative diagnosis was based on medical history, physical and ultrasound examination. Overall such lesions after freeing from the liver tissues were took their measured. The animals slaughtered in abattoir of Nassiriyah examined for the presence of hydatid cysts in their livers during first ten months of 2007,

found by inspection of 8262 livers collected from 2704 sheep and goat, 4570 cattle, 429 buffaloes and 429 camels.

## Results

In the present study, the accuracy of the diagnosis of all patients was based on ultrasonographic examination, 27 cases of hepatic hydatidosis confirmed surgically during 2007 were studied in teaching Nassiriyah hospital/ southern Iraq, age of patients ranged from 12 to 60 years. The highest surgical prevalence was found in age group 12- 40 years (table 1).

**Table (1):- Distribution of age and sex of Hydatid patients operated on due to hepatic hydatidosis and confirmed surgically in 2007.**

Age group (Years)	No. of infected (%)		
	Male (%)	Female (%)	Total(%)
≤10	0	0	0
11-20	2(29)	3(15)	5(19)
21-30	2(29)	6(30)	8(29)
31-40	0	6(30)	6(22)
41-50	0	3(15)	3(11)
51-60	3(42)	2(10)	5(19)
Total	7(100)	20(100)	27(100)

Twenty cases (74.07) of the 27 patients were females and seven (25.93%) were males, and most of them from rural areas (table 2). Many of the patients were stock breeders or dog owners and were they exposed to the disease. Examination and distribution of hydatid cyst implicit hepatic lobes of 27 cases are shown in (table 3). These were indicating differences between females and males.

**Table (2):- Details of 27 surgically confirmed cases of human's hydatid Studied during 2007.**

Details	No. of patient out of 27
Males	7
Females	20
Place of residence	
Rural	18(67)
Urban	9(33)
Dog ownership	16(59)
Occupation	
House wives	18(67)
Farmers	2(7)
Workers	3(11)
Miscellaneous	4(15)

**Table 3: Localization of hepatic hydatidosis amongst male and female**

Liver lobes	No. of infected (%)		
	Male	Female	Total
Right lobe	4(30)	9(70)	13(48)
Left lobe	1(16)	5(84)	6(22)
Both lobes	2(22)	6(75)	8(30)

A total of 8262 livers of different animals were examined to determined hepatic hydatidosis by the inspection of which 526 (6.36%) was found to be infected, these were belong to 2704 sheep and goat, 4670 cattle, 429 buffaloes and 459 camels slaughtered at Nassiriyah abattoir during the first ten months of 2007, the infection percentage were 5.91%, 7.08%, 6.75% and 1.3% for sheep and goat, cattle and camels respectively (table 4).

**Table 4: Distribution of hepatic hydatidosis among slaughtered animals of Nassiriyah during the first ten months of 2007.**

Species	No. examined	No. Infected (%)
Sheep and goat	2704	160(6)
Cattle	4670	331(7)
Buffaloes	429	29(7)
Camels	459	6(1)
<b>Total</b>	<b>8262</b>	<b>526(6)</b>

Through the our investigation, observed the liver harbored from one to numerous cysts and the size varied from 48x40mm to 12x10cm. The cysts were both superficial as well as deep in the parenchyma of the liver. The cystic varied in their numbers, size and distribution in right lobe for both sexes, and mostly in females than males (table 3). The shape of the cysts were mostly globular but some time nearly bothrovidal. The cysts were encapsulated by thick connective tissue layer in which a vesicle with gelatinous white wall could be located, in transverse cut noticed clearer turbid and occasionally empty or they contained necrotic materials resembling cheese and calcification.

Histopathologically; characterized by the following; inner layer : The consisted of the laminated cyst wall surrounded by a zone of necrosis, the necrotic zone at times showed the presence of blackish staining cellular debris, and a well developed connective tissue capsule. The capsule showed focal infiltration by lymphocytes and fibroblast, at places, the fibroblasts had a pendicular arrangement. The outer layer consisted of compact fibrous tissue; the capsule also showed focal infiltration by lymphocytes and esinophils, in few cases the lesion revealed the absence of germinal layer.

## Discussion

Hydatidosis is still a major economic and an endemic public problem in Iraq and some other areas of the world. Also hydatid disease being known to be present and relatively frequent in man, regardless the disease is notifiable; still they surgically confirmed cases are the best information. The study appears in Nassiriyah, as indeed in other provinces of Iraq at large <sup>3, 10, 12, 13</sup>.

In this our study recorded 27 cases of hydatid cysts during one year 2007, this consider very higher in comparison with that reported in Erbil <sup>11</sup>. As far as, the age distribution is concerned, the present study revealed that hydatidosis affect all age group, but the maximum age of incidence was in patient aged 12-40 year, this apparently fits well the findings of some workers <sup>15,4,10,11,14</sup>. It has also been reported that most hydatid cysts are fairly acquired in childhood but may take many years to manifest themselves as deleterious lesions <sup>10, 12</sup>. Their may be due to a greater susceptibility of man to evolute the infection in contrast to animals <sup>15</sup>.

From our results, it is apparent that hydatid disease was more frequent in females than males, nearly similar sex distribution in a high incidence also has been found in Baghdad <sup>10</sup>, Mosul<sup>9</sup> and Erbil <sup>11</sup>, in contrast to Basra have reported simply infected in females than in males<sup>12</sup>, some workers, therefore prefer to attribute such a sex difference to some epidemiological factors possibly such as socio-cultural and occupational risks including fact that most women are housewives and also work at animal breeding and or agriculture <sup>16, 13</sup>, though alternatively the high incidence of the disease among housewives may be due to their extreme domesticity, but still living in a habitat which overlaps with the ecosystem of infected dog, as usual in hydatid infection is the most frequently affect.

Researchers, encountered more cysts in right lobe of the liver than the left<sup>8,11,15</sup>, these were corresponding with our study. The results also showed that the most frequent occurrence of hepatic hydatidosis in animals were in cattle, following by sheep and goat, buffaloes and ultimately camels, this investigation was corresponded with similar observations were recorded by<sup>5</sup>, in contrast, variable observations were recorded higher prevalence in the sheep than in cattle in various parts of Iraq <sup>1, 9, 2, 4</sup>. Most infection detected among older animals, observed in this work, may be due to the fact the complete development of hydatid cysts takes from 6 months to several years. The high prevalence of the disease among animals in Nassiriyah appears to stem from the slaughterhouses, most of which have poor hygiene, many have no veterinary supervision and also attract dogs.

However, useful measures would include health educational standards, deforming of each of pet of dogs, and preventing them from gaining infected organs by hydatid cysts of animals via hindering them from scavenging on carcasses at the abattoirs as well as eradication of pariah and stray dogs. Finally, the abattoirs should put under aggravating circumstance and provided with efficient incinerators.

About histopathological changes besides macroscopic and their location in liver that recorded in study were nearly similar to mention<sup>12,17</sup>.

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