

Occurrence of Human Hydatidosis in Babylon Province, Iraq

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Abstract

Hydatid disease is endemic in Iraq. Over a seven-year period in the Babylon province of Iraq a total of 298 cases of human hydatid cyst disease were diagnosed, showing an over all incidence of 1.3% of Patients admitted to the surgical departments at Babylon hospitals. Infection rate was higher in females (64.8%) than in males (35.2%); the females being mostly housewives (140 out of 193 females). The highest incidence among males was observed in the 41–50 years age group, whereas in females the incidence was highest in the 21–30 years age group. Although most organs of the body were involved, the most affected was the liver, followed by the lungs and the other organs of the body.

Key words: Hydatidosis, Incidence, Babylon, Iraq

Introduction

Hydatid disease is caused by the cystic larval stage of the cestodes *Echinococcus granulosus* and *E. multilocularis*. Although the latter is thought not to occur in Iraq, one case was attributed to it (Al-Attar *et al.*, 1983). This disease is a major zoonosis, with a cosmopolitan distribution. In Iraq hydatid disease caused by *E. granulosus* is considered to be one of the most serious helminthic disease with serious public health implications (Babero and Al-Dabbagh, 1963; Hassoun and Al-Salihi, 1973; Niazi, 1974, Al-Jeboori, 1976; Mahmoud, 1980; Al-Sakkal, 1982; Salih *et al.*, 1983). The purpose of the present study, which is first of its kind in Babylon province, was to assess the gravity of the current problem by examining the records of surgically proved cases with hydatid cyst in the Babylon hospitals during the period 1980–1986 inclusive.

Materials and Methods

Patients records of the main hospitals in Babylon province between 1980 and 1986 with surgically proven hydatid disease were studied.

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Information regarding the location of infection in the body, age, sex, occupation and residency were recorded.

Results

A total of 298 individuals were operated on and proved positive for hydatid cysts in Babylon hospitals during the seven years period (Table 1). Of the 298 cases recorded, 193 (64.8%) were females and 105 (35.2%) were males. The overall incidence of the disease among all patients admitted to the surgical wards was 1.3%.

The age of the patients ranged from 6 to 90 years. In males the age group showing the highest incidence (23.8%) was 41–50 years, followed by 1–10 years which showed an incidence of 19.0%. In females the incidence was highest in the 21–30 years age group (25.4%) followed by the 31–40 and 41–50 years age groups which showed an incidence of 18.1% each (Table 2).

Of the 193 females, 140 (72.5%) were housewives accounting for the highest rate of infection among the females (Table 3). Male patients were mostly labourers, farmers and unemployed. Of the 298 patients, 80 cases (26.9%) were under the age of 21 cases and (7.1%)

Table 1. The incidence of hydatid patients admitted to the Babylon hospitals during 1980–1986

Year	Male	Female	Total No.
1980	10	11	21
1981	17	16	33
1982	17	21	38
1983	11	30	41
1984	9	47	56
1985	29	30	59
1986	12	38	50
Total No.	105	193	298

Table 2. Age and sex distribution of 298 patients admitted to the Babylon hospitals

Age group	No. infected (%)	
	Male	Female
1–10	20 (19.1)	13 (6.8)
11–20	16 (15.2)	31 (16.1)
21–30	12 (11.5)	49 (25.4)
31–40	7 (6.7)	35 (18.2)
41–50	25 (23.8)	35 (18.2)
51–60	15 (14.3)	21 (10.8)
61–70	6 (5.7)	5 (2.6)
71–80	3 (2.8)	3 (1.6)
81–90	1 (1.0)	1 (0.5)
Total	105	193

were Pre-school age children. Various organs were found to be infected with hydatid disease. In males, hydatid cysts were observed in the liver of 41.60% of the cases, the lungs of 25.7%, the spleen of 15.2%, the kidneys of 6.7% and other sites of 10.5% of the cases (Table 4). It can be seen from the same table that in female hydatid cysts were observed in the liver of 106 cases (54.9%), in the lungs of 24 cases (12.4%), in the kidneys of 15 cases (7.8%), in the peritoneum 14 cases (7.3%), in the spleen of 9 cases (4.7%) and in other sites in 25 cases (12.7%). Table 5 shows 11 patients with multiples sites of infection (3.7%). In 10 cases, two organs were affected.

Table 3. Recorded occupatin for hydatid patients admitted to the Babylon hospitals from 1980–1986

Occupation	No. of cases		
	Male	Female	Total No.
Housewife	—	140	140
Student	20	25	45
Farmer	34	—	34
Unemployed	16	5	21
Pre-School age children	15	6	21
Labourer	10	9	19
Slodier	8	—	8
Teacher	1	7	8
Nurse	1	1	2
Total	105	193	298

Table 4. Occurrence of hydatid cyst in various organs of Male and Female patients

Organs	No. infected (%)	
	Male	Female
Liver	44 (43.1)	106 (57.3)
Lung	27 (26.5)	22 (11.9)
Peritoneum	7 (6.9)	14 (7.6)
Kidney	15 (14.7)	13 (7.0)
Spleen	4 (3.9)	9 (4.9)
Stomach	1 (1.0)	1 (0.5)
Brain	2 (2.0)	—
Thyroid gland	1 (1.0)	—
Uterus	—	6 (3.2)
Others	1 (1.0)	14 (7.6)
Total	102	185

Table 5. Multiple organ involvement in 298 hydatid cases

in organs involved	No. patients	% infection
Liver, lung	4	36.4
Liver, spleen	3	27.3
Liver, kidney	1	9.1
Liver, peritoneum	1	9.1
Lung, spleen	1	9.1
Liver, spleen, kidney	1	9.1
Total	11	% 100

Discussion

In the present retrospective study an over all incidence of 1.33% has been recorded among surgical wards admittance at Babylon hospitals. This figure is higher than other previously reported figures in Iraq and adjacent countries. Al-Jeboori (1976) showed an over all incidence of 0.8% among all patients admitted to the Baghdad medical city hospital during 1971–1973. Mahmoud (1980) reported an over all incidence of 0.9% among surgical wards admittance at Mosul hospitals in 1979. In Iran the over all incidence was 0.5% during the years 1964–1971 (Amir-Jahed *et al.*, 1975).

Regarding the sex distribution, the present study revealed the higher incidence of hydatid cysts in females than in males. Similarly, Al-Jeboori (1976); Mahmoud (1980); Al-Sakkal (1982); Salih *et al.*, (1983); Molan *et al.*, (1988) in Iraq, Mobedi *et al.* (1971) and Amir-Jahed *et al.* (1975) in Iran and Bailenger (1957) in France have shown that females were more frequently affected than males. However, some workers (Imari, 1962 in Iraq; Neghame, 1956 in Chile and Oytum, 1957 in Turkey) found higher incidence in males than females. These differences do not necessarily mean that females are more susceptible than males or vice-versa, although, Frayha and Dajani (1971) have shown that male mice were more susceptible to experimental infection with *E. granulosus* than females. The sex difference is attributed to the epidemiological factors such as socio-cultural and occupational risk or due to the fact that the females are more closely associated with the infection sources rather than intrinsic factors.

The present study shows that among females the incidence of infection is higher in housewives. This matches similar findings by others reporting on hydatidosis in Iraq (Al-Jeboori, 1976; Mahmoud, 1980; Salih *et al.*, 1983; Molan *et al.*, 1988). The high incidence among housewives may be due to their domesticity which results in greater liability to infection (Wilson, 1950) or due to a close contact with infected dogs or contaminated vegetables.

Hassoun and Al-Salihi (1973) reported that the majority of patients in Iraq, were in the age group of 25–40 years. Al-Jeboori (1976) in Iraq and El-Boulaqi and Taguri (1980) in Libya found that the highest incidence was between 31 and 40 years. In the present study, the highest incidence was found in male patients of age group between 41 and 50 years, while in females the highest incidence was in the age group between 21 and 30 years.

It is very important to note that 80 cases (26.9%) were under the age of 21 years, and 21 patients (7.1%) were pre-school age children. Mahmoud (1980) found that 19 (18.1%) of the 105 patients in Mosul city occurred in cases under the age of 17. Beard (1978) concluded that in most endemic areas children under 15 years constitute one third or more of the population at risk, and pointed out that most cysts diagnosed in adults were believed to have resulted from infection during the childhood.

Although many organs of the body were involved, the most affected was the liver followed by the lungs, kidneys, peritoneum, spleen and the other organs or sites of the body. The predominance of liver involvement over pulmonary hydatidosis in this study matches similar findings by other workers in Iraq (Al-Sakkal, 1982; Salih *et al.*, 1983; Molan *et al.*, 1988; Iran (Amir-Jahed *et al.*, 1975) and Libya (El-Boulaqi and Taguri, 1980).

In conclusion the cases recorded in this study may not represent the true picture of the disease in Babylon province because some patients preferred to receive their operations in Baghdad (the capital), where better hospital facilities are available.

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