

Evaluation of hydatid cyst manifestations in patients admitted to Shaheed Modarres Hospital, 1984-2004

Maryam Amini, Mozghan Bahador, Mansore Malekhoseyni

Department of Infectious Diseases and Tropical Medicine, Shahed University of Medical Sciences, Tehran, Iran

ABSTRACT

Background: Hydatid cyst is one of the most important and dangerous human and herbivore animal helminthic disease. Infection is quite prevalent in Iran, however, patients' features and manifestations have not been clarified thoroughly, thus, in the present study we evaluated Iranian patients with hydatid cyst referred to a tertiary hospital in Tehran during a 20-year period.

Materials and methods: For this descriptive study, initial data including age, sex, clinical symptoms, cyst type, the place of cyst replacement, diagnostic technique, laboratory findings, treatment modalities and relapse were obtained from patients medical files.

Results: Totally, 60 patients aged 4-70 years were entered, of whom 32(53.3%) were females and 28(46.7%) were males. House-wives (75%) and farmer men (42.8%) were more commonly affected. In 80% of the cases cyst was found in liver (lonely or with other organ involvement). Echinococcus Granulosus was detected in all patients. RUQ pain and cough and sputum were the most common symptoms of liver and lung cysts, respectively. Totally, 20% of patients referred with relapses, most of whom were multivesicular.

Conclusion: Our results revealed that hydatid cyst in Iran is more or less the same as other western societies, however, a high rate of relapse in multivesicular cysts was noted.

Keywords: *Hydatid cyst, Echinococcus Granulosus, Iran.*

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INTRODUCTION

Hydatid cyst disease has been known since Hippocrates and still is a major health concern in endemic regions. This parasitic disease exists in Australia, New Zealand, south America, and middle east including Iran. In Iran it is endemic in Azarbaijan-Sharghi and -Gharbi, Ardebil, and Kordestan (1,2).

Hydatid cyst is considered as a zoonotic disease and its prevalence is depended on the prevalence in major host and mid-host including dog, sheep, goat, cow, and camel. The parasite ovule enters with vegetables, water and other infested food and transfers to the portal system circulation and may replace in liver. It may replace in other organs as well. Surgery is the only recommended treatment. Hydatid cysts are categorized in four groups: Echinococcus granulosus which is the most prevalent, E. multilocularis or alveolar, E. vogeli and E. oligarthrus which are uncommon (2,3).

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Reprint or Correspondence: Maryam Amini, MD. Department of Infectious Diseases and Tropical Medicine, Shahed University of Medical Sciences, Shaheed Mostafa Khomayni Hospital, Tehran, Iran.

E-mail: mamini55602@yahoo.com

E. granulosus presented in either monovesicular or multivesicular form. *E. granulosus* is a small cestode tapeworm living in the intestine of dogs. *E. granulosus* eggs are infective for intermediate hosts, however, humans may be infected accidentally. Having ingested eggs, an early-stage larva the oncospher is released into the intestinal tract and migrates through blood or lymph vessels to primary target organs such as liver and lungs and mature into a vesicle, which grows expansively by concentric enlargement. The final result is a fully mature hydatid cyst, which is usually fluid filled and is monovesicular. Occasionally, cysts may abut and coalesce, forming groups or clusters of cysts of variable size. In human, where unusually large cysts may develop, daughter cysts can form within the primary cysts, including multiple, communicating chambers (multivesicular) (3). Multiorgan involvement observed in 10-15% of patients (3). Eosinophilia may be present in <25% of patients, but it is a nonspecific marker (4). Annually the hydatid cyst imposes several economic and hygienic damages to societies, which usually resulted in considerable reduction of animal products such as meat, milk and wool.

According to the mutuality of this disease between man and animal, some researchers priorities the hygienic importance of this disease to its economic importance. Unfortunately, the clinical picture of Hydatid cyst is not completely clarified in Iran, thus, the present study was conducted in a tertiary hospital in Tehran (Shaheed Modarres hospital).

PATIENTS and METHODS

This descriptive study was achieved in Modarres hospital in Tehran. Medical files of patients admitted with hydatid cyst during a 20-year period (1984-2004) were reviewed. Initial data including age, sex, signs and symptoms, laboratory findings, cyst type, the place of cyst replacement,

diagnostic technique, treatment modalities and relapse were all documented. Then descriptive analysis was performed.

RESULTS

The study population included 32 (53.3%) females and 28 (46.7%) males with their age ranged 4-70 years. Most of the patients aged 30-39 years (figure 1).

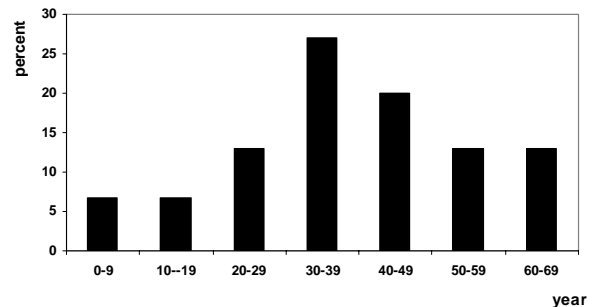


Figure 1. Age distribution of patients with hydatid cyst, Tehran, 1984-2004

Of 32 females, 24 were house keeper (75%), 4 were students (12.5%) and 4 were shepherd (12.5%). Of 28 males, 12 were farmer (42.7%), 4 were students (14.4%) and 11 (39.2%) had other occupations.

Central provinces had the highest number of patients (24), followed by west (20), north (12) and east provinces (4). The total number of cysts in 60 patients was 76, of which cysts were found in 48 cases in liver (either alone or with other organ involvement), however, 28 cases had cyst in their lungs (alone or with liver or other organ involvement).

Of 48 hepatic cysts, 32 were located on right lobe (67%), 12 on left lobe (25%) and 4 on both lobes (8%). Of 28 pulmonary cysts, 20(71%) were located on right lung and 8(29%) on left lung.

The most common clinical symptom of liver cysts was right upper quadrant pain, while cough and sputum were the most common complaints of lung cysts (table 1).

Table 1. Clinical manifestations of patients hydatid cysts, Tehran, 1984-2004

Clinical manifestation	Number	Percent
Liver involvement		
RUQ Pain	32	66.6
Icter	8	16.6
Abdominal pain	8	16.6
Abdominal mass	4	8.3
Nausea/vomiting	16	33.3
Ascitis	4	8.3
Weight loss	16	33.3
Loss of appetite	12	25
Fever and chill	8	16.6
Lung involvement		
Cough and sputum	20	71.4
Dyspnea	8	28.5
Chest pain	8	28.5
Hemoptysis	4	14.2
Fever and chill	8	28.5
Weight loss	16	57

Of 60 patients, 32 (53.3%) had <5% eosinophilia, followed by 24 (40%) with 5-10% and 4 patients (6.7%) with >10% eosinophilia.

The interval between presentation of the first symptom and definite diagnosis was evaluated and the following results obtained: 8 cases (13.3%) less than one month, 32 cases (53.3%) 1-6 months, 8 cases (13.3%) 6-12 months, and 12 cases were diagnosed more than one year following the commencement of symptoms.

Sonography was our main diagnostic tool (67%) followed by CT scan (20%) for liver cysts, however, lung cysts were diagnosed mainly by chest X-ray (84%) and CT scan (14%). Serologic markers were not applied for all cases. All cysts were granular, while in 12 (20%) patients they presented in multivesicular form. Most of multivesicular cysts involved multi organs (66% of multivesicular vs. 33% of monovesicular). All the patients were managed by surgery, of whom 48 (80%) were operated once, 8(13%) twice, and 4(7%) thrice or more. Totally, 12(20%) patients relapsed, 8(67%) of whom had multivesicular cysts.

DISCUSSION

Results revealed that hydatid cyst is more common among females. This is in agreement with some other studies (4-7), but in contrary to others (8-14). In our experience, hydatid cysts have been found more commonly among 30-39-year-old subjects. This is in consistency with other studies (3,6,7,8,10,12,13,15).

With respect to the long incubation period of disease it can be expected that clinical symptoms be represented during mid ages. Since these ages are active periods of human life, disease can have several hygienic and economic damages.

Similar to Porang et al (5) and Bayat et al (8) study, hydatid cyst is more common among house keepers, farmers or shepherds. In our study, most of the patients were residing in central provinces. This is in agreement with other studies (7,9).

RUQ pain was reported as the most common clinical symptom of liver hydatid cysts. Prior studies demonstrated similar finding (4,7-10). Similarly, cough and sputum were reported as the most prevalent symptoms of lung cysts (4,7,8,9,12).

Like Dehdashti et al study, we observed a mean 1-6 months lag time between the onset of symptoms and definite diagnosis (15). This could be explained in part by nondiagnostic features of hydatid cysts and lack of awareness of its true presentation.

Like many other studies, right liver lobe was the most commonly affected site (7,8,15-18). This could be explained by higher percentage of right lobe circulation. Meanwhile, most of the hydatid cysts were granular, a finding that was reported in other studies (2,7). Perhaps alveolar cysts are less likely to grow in humans.

Totally, 12 cases relapsed. the rate of relapse was different in prior studies. Some reported a rate of 10-15% (4,12,14,16) while others reported <3% relapse (3,13).

In conclusion, hydatid cyst in Iran is more or less the same as other western societies, however, a high rate of relapse in multivesicular cysts was noted. This necessitates further investigative studies.

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