An Evaluation of Diagnosis and Treatment of Pulmanory Hydatid Cyst in Patients Over 50 Years Old

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Abstract

Objective: The aim of this study was to determine the problems in diagnosis and management of patients over 50 with pulmonary hydatid cysts.

Design: We evaluated 40 patients over 50 years with hydatid disease of lung who were operated in our hospital in 1988-1999.
Setting: SSK Süreyyapaşa Center for Chest Diseases and Thoracic Surgery Clinics.

Patients: In this retrospective study, forty patients (23 male, 17 female) aged between 50 to 71 years were evaluated (mean 56.5). 24 of these had the cyst in the right lung, where 13 had the cyst in the left lung and 3 had the cyst bilaterally.

Interventions: Radiologically, 17 patients (42.5%) had typical, the remaining 23 (57.5%) had atypical cysts. 11 of the atypical cyst patients had bronchoscopic evaluation and four of them had the definitive diagnosis histopathologically. Abdominal ultrasonographic evaluation revealed that 14 of 29 patients had the cyst in the liver and in addition to the liver one cyst in the kidney, spleen, adnexa, extrapulmonary tissue and pericardium. The operation procedures were 28 cystostomy, 12 cystostomy and removal of surrounding lung tissue.

Measurements and Results: We evaluated diagnostic tests, types of operations, recurrence, mortality and morbidity rates of the patients. There were no operative deaths (mortality: 0%), and postoperative complications occurred in seven patients (morbidity: 17.5%). Mean duration of hospital stay was 13 days in nonmorbid, and 39 days in morbid patients. Radiological imaging gave a correct diagnosis in 42.5% of the patients. The Casoni and Weinberg tests were positive in 83% of the cases, while eosinophilia was present in 22%. The recurrence rate was 10%. In 48% of the patients hydatid cysts were concomitant in lung and liver.

Conclusion: We should always keep hydatid cyst in mind in elderly patients with atypical radiology and should use serological tests preoperatively. Regardless of age, patients should be operated.

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Key words: *Lung, hydatid cyst, elderly patients*

Introduction

Hydatid cyst disease is a parasitic infection that is widely seen endemically in the Middle East countries like Turkey, particularly in cattle-raising regions (1). The State Statistics Institute reports each year nearly 2200 new cases, and 1% of the patients who refer to surgery departments are hydatid cyst (2).

Hydatid cyst is widely observed in the third and fourth decades of life and 55-70% are found in the liver and 18-35% are found in the lung (3). Radiologic imaging and serologic tests for hydatitosis are the main methods for diagnosis. In an endemic country like ours, hydaditosis is observed at all ages and may present itself in many organs. Unrecognized hydatid cysts may enlarge and rupture, and therefore result in complications. At that time diagnosis may be more difficult to make.

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The aim of this study was to evaluate the problems encountered in diagnosis and observe postoperative problems of the patients.

Patients and Methods

40 patients over 50-years-old who had undergone an operation in our hospital in a period between 1988 June and 1999 June were evaluated retrospectively. The symptoms include cough, chest pain, hemoptysis, dyspnea and sputum production. These symptoms were listed in relation to smoking and nonsmoking condition of the patients.

Radiological data (plain and lateral chest x-rays, computed tomography (CT) of thorax and abdomen, and ultrasonography (USG) for abdomen) was collected from the files. Cysts were classified as solitary, multiple, bilateral, typical and atypical. Abdominal cysts were diagnosed with abdominal CT and abdominal USG. Pulmonary hydatid cysts are defined radiologically as typical and atypical. An intact cyst is defined as "typical", and a ruptured and/or infected cyst is defined as "atypical" (4).

Laboratory tests included Casoni skin test, Weinberg complement fixation and indirect hemagglutination. Echinococcal indirect hemagglutination titres greater than 1:320; Weinberg complement fixation titres greater than 1:32; eosinophilia more than 500 eosinophils per cubic meter was considered to be significant (5).

Bronchoscopic (fiberoptic and/or rigid) findings and pleural biopsy reports were also evaluated. All patients underwent surgery. Surgery types were cystostomy and capitonage, cystostomy and wedge resection, segmentectomy, cystectomy and decortication, lobectomy, ple ropericardial cystostomy, multiple cystectomy. Postoperative pathological investigation revealed uncomplicated, infected or perforated cyst. The duration of hospital stay was determined according to morbidity.

Results

There were 23 male, 17 female patients operated between 1988-1999, aged 50 to 71 years (mean: 56.5 years). 26 of them were nonsmokers. The clinical symptoms are summmarized in Table 1.

Table 1. Clinical symptoms of the patients

	Smoker	Nonsmoker	Total	Rate
Cough	10	19	29	72.5%
Chest Pain	5	17	22	55%
Haemoptysis	9	4	13	32.5%
Sputum	1	5	6	15%
Dyspnea	2	4	6	15%
Asymptomatic	0	1	1	2.5%

According to the clinical records; all the patients had plain and lateral x-rays, 30 patients had thorax CT, 5 had abdominal CT and 24 had abdominal USG. Pulmonary and abdominal cysts were defined as typical and/or atypical with the use of imaging techniques (Table 2-A, 2-B). Bronchoscopic evaluation was performed in 11 of the 23 atypical cyst patients with suspected bronchogenic carcinoma. Four of the 11 had such a histopathological diagnosis according to the bronchoscopy specimens (4). We were not able to reach the diagnosis with pleural fluid examination in two patients who had pleural fluid (6-8). We summarized serologic findings of the patients in Table 3.

Table 2-A. Radiological features of the pulmonary the hydatid cysts.

Radiology	Solitary	Multiple	Total	Typical	Atypical
Right Lung	18	6	24(60%)	13	11
Left Lung	8	5	13(32.5%)	1	12
Bilateral			3(7.5%)	3	
Total	26	11	40	17(42.5%)	23(57.5%)

Table 2-B. Distribution of extrapulmonary hydatid cyst in the patients with pulmonary hydatid cyst

	No.of patients	Liver	Kidney	Spleen	Adnexa wall	Chest	Pericardium
Abdomen (CT+USG)	29	14(48%)	1	1	1	1	1

Table 3. Serological findings of the patients.

Serology	No.of patients	Positive	Negative	Positive%
Eosinophilia	27	6	21	22%
Weinberg	12	10	2	83%
Casoni	30	25	5	83%
Int.Hem.Agl	25	19	6	76%
Not Tested	2			

Seven of the 40 patients had been operated on due to hydatid cyst before, three of the 7 had been operated on because of other organ involvement. Seven patients were operated on for hydatid cyst of the lung and liver concomitantly (9,10).

Postoperatively, seven patients (17.5%) had morbidity, but no mortality was observed. For the uncomplicated cases, duration of hospital stay was between 5 and 20 days (mean: 13), for the complicated cases duration of hospital stay was between 22 and 69 days (mean 39). The radiologic impression of 4 of the 7 morbid patients (57%) was uncomplicated hydatid cyst.

Discussion

Hydatid cyst disease is an extensive epidemiological

Table 4. Operation types and rates		
Operations	No.of patients	Rate
Cystostomy-Capitonage	25	62.5%
Wedge resection	7	17.5%
Cystostomy-Decortication	3	7.5%
Segmentectomy	1	2.5%
Pleuropericardial Cystectomy	1	2.5%
Multiple Cystectomy	2	5%
Lobectomy	1	2.5%

problem in our country particularly in the cattle and sheep raising areas. Disease is mostly seen in young patients at 3-4 th decades of life and diagnosed radiologically and serologically before operation. Our aim was to determine the difficulties in diagnosis and intraoperative problems in the patients older than the 5th decade of life.

According to some reviews, pulmonary hydatid cyst is encountered more frequently in children(11). As our hospital is specified on chest, we could not have a comment on frequency. Most of our patients were male (57.5%) and nonsmokers (65%). Most frequent symptoms were cough and chest pain. None of the patients had anaphylactic reactions.

Imaging techniques were shown to be important in the diagnosis of hydatid cyst. 23 of the patients (57.5%) were diagnosed as complicated and 11 of them had bronchoscopic evaluation (12). In general series, radiology is 90% diagnostic in hydatid disease (13,14). Our findings were not concordant with the literature. Radiological examination in this age group rarely contributes to the diagnosis. Unrecognised cysts because of necrosis and aging in cyst wall become atypical.

In hydatid disease, serologic studies may sometimes give negative results in 35% of the cases (15-17). In some of the literature, indirect hemagglutination rate is as low as 50% and some serological tests are even more negative, if pulmonary involvement does not exist (5). In our study, serology was positive above the upper limits. Thus, we suggest that serology is more helpful in older patients with hydatid disease because complicated form is observed more often than young age group.

Eosinophilia is 10-30% positive in hydatid cyst disease. Eosinophilia increases if cyst rupture, and it is also high in countries where parasitosis is endemic .Although we expected higher results, in our patients eosinophilia was 22%, and this is concordant with the literature (18).

Most of our patients underwent cystostomy and capitonage procedure. 32.5% of the patients underwent wedge resection, segmentectomy, lobectomy, decortication operation(19). The rate of cystostomy and capitonage were high, although most of our patients had complicated cysts. Recurrence rate was 10% in our patients. In general literature, this ratio was low.(20) However, our patients had enough time for recurrence. Seven patients had morbidity but no mortality after the operation. In our series, the duration of hospital stay was not longer than the other series (21). This showed that regardless of age the results were good.

In our study, diagnostic rate with imaging techniques was low, because most of the cases were atypical. On the contrary, serology was found highly positive. Old aged patients with this atypical radiology and smoking history raised doubt about cancer in differential diagnosis.

According to this study, one should always keep hydatid cyst in mind in endemic countries and in old patients with atypical radiology; and one should use serological testing preoperatively. Regardless of age, patients should be operated unless a major contraindication exists.

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