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Hydatidosis: experience with hepatic and pulmonary hydatid disease

T Pishori

R Azami
Aga Khan University, rizwan.azami@aku.edu

S M. Ali

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Turab Pishori,Rizwan Azami,Sohaila Mohsin Ali (Department of Surgery, The Aga Khan University Hospital, Karachi.)

Abstract

From 1989-1992,35 cases comprising of 20 hepatic and 15 pulmonazy hydatid cysts were seen, Four patients with pulmonary hydatid disease had previous or concomitant bepatic hydatidosis compared to no concomitant pulmonaiy hydatid disease in the hepatic group. Hepatic hydatid disease had a greater tendency to be right sided, infected and calcified, Anaphy lactic reactions occurred in 3 of 20 patients with hepatic hydatid disease against none in 15 patients with pulmonary disease. Management consisted of evacuation, drainage and obliteration of the residual cavity by capittonage in the lung and omentoplasty in the liver. Two patients, One hepatic and one with pulmonary hydatid disease developed infection of the residual cavity. Bronchocystic fistula occurred in 4 pulmonary and cystobiliary fistula in 2 hepatic hydatid disease patients. One patient with severe plcuropulmonary hydatidosis required a thoracoplasty. No recurrences have been noted in eithergroup overa mean follow-up of 11 months (range 3 weeks- 3 years).

Introduction

Hydatid disease is a zoonotic disease seen quite regularly in non-endemic areas as well due largely to trans-continental travel and migration[1]. Hydatid cyst is one of the differential diagnoses of a cystic lesion and has been reported to occur in almost every organ of the body[2]. Though no studies have been published about its prevalence in. Pakistan reports suggest that it is endemic[2,3]. This study correlates the presentation and outcome of management of the disease in the liver and lung.

Patients and Methods

Case notes of all patients with hydatid dIsease seen at the Aga Khan University Hospital from 1989 to 1992 were reviewed. Diagnosis was made on plain x-ray of chest(P. A and lateral views) in all and ultrasound of the abdomen for hepatic disease. Confirmation of the diagnosis was obtained by the indirect hemagglutination test for echinococcal antibodies. The radiological and pathological characteristics of cysts were evaluated. The outcome of management of hepatic and pulmonary hydatids was reviewed.

Results

Thirty-five patients with hydatid disease were seen over a 3-year period. Twenty patients had hepatic and 15 pulmonary hydatid cysis.
There were 9 males and 11 females with hepatic hydatid whose ages ranged from 2 5-65 years (Table I).

Table I. Demographic profile of Hydatid disease cases.

	Pulmonary hydatid	Hepatic hydatid
n=patients	15	20
Age	11-56	25-65
Concomitant	4/15	1/20
Sex (M:F)	12:3	9:11
Cyst characteristics		
Calcification	0	4
Location		
Right	8	19
Left	5	1
Number	Single=13	Single 15
	Bilateral=1	Double=3
	Multiple=1	Multiple=2
Size	3-12 cm	3-19 cm
	Mean 8.03 cm	mean 8.4 cm.
Infection	1	6
IHA	n=7	n=16
<1:16	3 (42%)	4 (25%)
>1:16	4 (57%)	12 (75%)
FNA	3	1

None of the 20 patients with hepatic cysts had pulmonary cysts at the time of presentation. Calcification was seen in four cases. More hepatic lesions were right sided (19: 1), Six patients presented with symptoms of infection like lever and pain. The fluid obtained from these cysts grew a variety of enteric organisms (Kiebsiella in two, Pseudornonas in two and Enterococcus, Streptococcus and Salmonella paratyphi A in one each). Sixteen patients had IHA titres done, of whom 12 (75%) had a level >1: 16. Anaphylaxis was seen in three patients. Two patients manifested intraoperative hypotension and one had urticaria and bronchospasm in the immediate postoperative period.
Except two all patients underwent suction - evacuation of the cyst after isolation by gauze packs soaked in scolicidal solution (Table II).

Table II. Procedures for hydatid disease.

	Pulmonary hydatid	Hepatic hydatid
N=Patients	15	20
Enucleation and drainage	3	4
PCPC+Drainage	11	8
PCPC+Omentoplasty	-	5
Resection	-	1
Non surgical/medical	-	2
Scolicidal agent used		
Pyodine 1%	-	1
Formaline 1% - 3%	2	8
Hypertonic saline 10%	11	5
Chemotherapy		
Pre-operative	-	5
Post-operative	10	16
Without surgery	1	2

Fonnalin 3%or hypertonic saline 10% was used mostly, pyodinc 1% was used once, The cysto-bitiary communications were closed with 3/0 vicryl. The residual cavity was drained in 10 and omentoplasty was perfonued in 5 cases (Table III).

Table III. Outcome of hydatid disease.

	Pulmonary hydatid	Hepatic hydatid
N=patients	15	20
Complications		
- anaphylaxis	-	3
- infection	1	1
- fistula	4	2
Mortality	-	-
Follow-up (Mean)	3 weeks to 3 months (10.4 months)	Range (12.7 months)
Recurrence	None	None

Post-operative infection of the residual cavity occurred in one patient who had cytobiliaiy fistula and required long term tube drainage and antibiotics. Two patients had long term bile drainage (17 days and 2 and half months). Both these patients had jaundice pm-operatively and had cysts in the common bile duct, which were cleared per-operatively by common bile duct exploration and T-tube drainage. Neither of them required any further operativc procedure and the fistulac closed gradually.
Pre-opcrative chemotherapy with Mebendazole was used in 5 patients. Post-operatively patients were discharged on three 4 week courses of tablet Albendazote 200 tug BD, each course lasting for four weeks. A gap of two weeks was given between each course to minimize the risk of hepatotoxicity. One patient with an 1HA titre of 1:256 had an infected cyst which responded to ofloxacin and met ronidazole for 10 days with evidence of reduction in size and appearance of calcification indicating cyst death. Another patient with a hepatic cyst and IHA titre oil :256 grew Salmonella Paratyphi A on culture of fluid obtained by ultrasound guided aspiration thrice along with antibiotics ceftriaxone and albendazole.
There was no mortality, No cases of recurrence have been encountered over a follow up of 3 weeks to 3 years with a mean of 12.7 months for the hepatic disease,
There were 12 males and 3 females with pulmonary hydatid disease whose ages ranged from 11-56 years. Four patients (1 able 1) with pulmonary cyst had associated hepatIc disease. Two of whom had been treated for liepatic hydatid disease 2 and 3 years prior to presentation. One had multi-organ hydatidosis involving the liver, Lung and spleen and one had a hepatic hydatid cyst with intrathoracic growth. None of the pulmonary cysts was calcified, eight cysts were right and 5 left sided.
One patient had infection on culture; this patient had a previous surgical exploration and had presented with recurrent extensive pleuropulmonary hydatidosis. Seven patients had IHA titres of whom 4 (57%) had IH A Litres >1: 16. Fine needle aspiration was performed in three patients with puhuonarv cysts pre-opcratively for diagnostic purposes without any untoward event, All except one patient underwent suction evacuation of the cysts after isolation with gauze soaked in hypertomic saline. The residual cavity was managed by suture of bronchocystic fistulac and capitonnage with 3/0 chromic catgut. The chest cavity was drained in all patients. No patient experienced allergic or anaphylactic reactions (Table II). One patient developed post-operative infection of the residual cavity with formation of broncliocystic fistula. Bronchocystic fistula without infection was encountered in 4 patients postpcrativcly manifested as persistent air leaks noticed in the drainage bags attached to the chest tube drains. They were managed with long term tube drainage (average 2 months) and all closed uneventfully. The patient with muLtiple pulmonary and associated hepatic, splenic and peritoneat hydatids was diagnosed on a CT guided fine needle aspiration of clear fluid from one of his pulmonary cysts and was put on long term course of Albendazole. Nine other patients were also discharged on three courses of Albendazole post-operatively.

Discussion

Hydatid disease effects almost every organ of the body[2] but the Liver and the lung are most commonly involved. Systemic anaphylaxis is seen infrequently. In our series it was SCCfl in three patients undergoing surgery for hepatic hydatid. There are two reported instances of anaphy laxis[4,5] in the various series comprising of 806 cases of hepatic hydatid diseasc[4-9]. Anaphy taxis was not encountered in our series of pulmonary hydatid cases and has not been reported in the literature on pulmonary hydatid disease[10-15] comprising of 1773 patients.
Surgical management has been the mainstay of treatment, lntracystic instillation of solicidal agents is now largely considered ineffective as it fuils to kill or neutralize cyst contents due to their heterogenous consistency[5]. A more rational approach is the isolation of the cyst bearing area by scolicidal soaked

gauze packs and controlled evacuation of the contents[5]. Various methods have been used for the management of the residual cavity after evacuation of the cyst contents. In liver the cavity may be drained externally by simple drainage or marsupialization; both these methods have been associated with long tenn bile drainage and sepsis[16]. A more efficient obliteration of the cyst cavity is accomplished by omentoplasty[4]. Open capsulorrhaphy with free drainage of the cyst in the peritoiieal cavity has also been reported[6]. The pulmonaiy cyst cavity may be left to open drainage within the pleural cavity[10] or obliterated by the capittonage technique of Barrett. The Allende and Langer technique consists of individual closure of bronchocystic fistulae followed by capittonage. Finally the Fontana technique entails the excision of the fibrous pericyst by blunt and sharp dissection to facilitate the collapse of the cyst cavity[11-13]. Surgeons working in the non-endemic areas price in toto excision of the cyst when located superficially. For deep seated cysts radical excision by appropriate lobectomy or segmentectomy is performed[9,10-15]. Another alternative is the excision of the cyst in a plane outside the pericyst, a procedure called cystopericystectomy[9]. Results with these radical excisions or resections in terms of prevention of recurrence in the long term are difficult to assess because of small numbers of patients managed, as well as the short duration of fol low-up. Also these procedures are associated with a higher short term morbidity. Our practice has been cyst evacuation with obliteration of the cavity by omentoplasty in case of the liver and capittonage in case of the lung.

Alternatives to surgery are being evaluated because of the morbidity associated with the surgical approach especially the recurrence rate of upto 10% on follow-up of upto 6 years[17,18]. Percutaneous radiologically guided needle aspiration has been perfonned in the liver[19-20] and the lung[21,22] Spillage oranaphylaxis was not encountered. These were selected uncomplicated cysts with a prominent fluid component.

Experience at centers in endemic areas has shown that recurrence after surgical treatment of hepatic cysts. manifests after an average follow-up of atleast 5 years[30]. Recurrence is rare after treatment of pulmonary hydatid disease[31]. Radical resection leads to a greater immediate morbidity but lesser long term recurrence. The current recommendation is to use Albendazole as an adjuvant to surgery to prevent recurrences, for recurrences detected on follow-up and for inoperable multi-organ involvement. Drug treatment with Albendazole has been cited in various reports[23,24] with variable success and sometimes conflicting reports of efficacy[25-27]. Among the reasons for this is the unpredictable absorption of the drug and the variation in the drug levels in the cyst fluid[28,29]. The optimum and safe dose and the ideal duration of treatment have yet to be identified.

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