

Asymptomatic Liver Hydatid cysts; a Preferred Approach

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Abstract

Background: Surgery is the accepted method for treatment of complicated liver hydatid cysts. However, there is no consensus about the most appropriate management of incidentally discovered asymptomatic echinococcal cysts of the liver. Expectant management poses many patients at risk while operating all clinically silent liver hydatids, would impose burden on local health resources of endemic areas.

Methods: We investigated 47 patients with clinically silent, ultrasonographically diagnosed liver hydatids during a period of one to ten years, to clarify the natural history of hepatic echinococcal cysts. Patients had a single asymptomatic liver hydatid cyst. We offered the patients to choose surgical treatment, or medical treatment with Albendazole. All patients declined both forms of treatment on grounds of not feeling particularly ill. Forty-three patients came back for regular follow-up visits lasted for 13 to 118 months. They were placed into three distinct groups, depending on their ensuing clinical course of disease.

Results: Group A comprised of 16 patients whose initial complaints did not worsen nor developed new symptoms. In these patients the largest diameter of the cysts became smaller or the cyst disappeared completely. Group B consisted of 19 asymptomatic patients. Their liver cyst had increased in size from 2 to 7 cm with a mean diameter of 3.4 cm on ultrasound evaluation. Group C consisted of 8 patients who returned with complications of the cysts.

Conclusion: Because of low rate of complications among incidentally discovered liver cysts, we suggest medical treatment for such patients. Operation can be reserved for complicated cases.

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Keywords • Hydatid cyst • asymptomatic • obstructive jaundice • liver abscess

Introduction

Surgery is the accepted method for treatment of complicated liver hydatid cysts.¹⁻⁵ The plan is to evacuate the offending cyst, clearing the biliary system from obstructing parasitic materials, and establishing drainage in case of secondary infection.^{4,6-9} However, there is no consensus about the most appropriate management for incidentally discovered asymptomatic echinococcal cysts of the liver.^{10,11}

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The assumption is that most of these benign cystic lesions will grow and eventually be complicated. Since no reliable medication is available for cystic echinococcal disease (CED),¹²⁻¹⁵ and most patients may face risks with expectant management,^{6,8,12} it is justified to perform a pre-emptive surgical intervention for liver hydatids.¹⁶⁻¹⁹ On the other hand, operating all clinically silent liver hydatid cysts, would burden local health resources of endemic areas.

Without adequate information about the natural history of CED of the liver, there is no way to know how often and which asymptomatic liver hydatid cysts will ultimately be complicated. Such information is difficult to obtain, mainly because of the unpredictable and very slow growth rate of these hepatic lesions.^{2,10,20} In this study we followed 43 patients with clinically silent, ultrasonographically diagnosed liver hydatid cysts over a period of one to ten years.

Patients and Methods

Using ultrasonography, we diagnosed single liver hydatid cysts of liver in 47 patients. Thirty two patients presented vague and nonspecific upper abdominal and flank pain. These complaints could not be correlated with or attributed to any serious intra or extra hepatic liver disease. In 15 other patients, a liver cyst was detected in the course of evaluation of other organs. All 47 patients were, therefore, considered to have asymptomatic, uncomplicated liver hydatids. The results of liver function tests (LFT) consisting of liver enzymes, serum bilirubin and alkaline phosphatase performed in all 47 patients were within normal range.

Two patients died subsequently of unrelated causes and two others were lost to follow-up. Of the remaining 43 patients which aged from 15 to 52 years, 16 were males and 27 were females. The ultrasound diagnosis of liver hydatid cysts was made in all patients on the basis of characteristic image of daughter cysts.²¹ The finding was supported in 21 patients by a positive counter-current immunoelectrophoresis (CCIEP) pattern.

We explained to all 43 patients the risk of complication of their liver cyst, which needed urgent surgical intervention. We also informed them about the medical treatment with Albendazole. We explained that medical treatment had fifty percent chance of effectiveness, should be taken for several months, and had rare possibility of temporary hair loss. We offered the patients to choose surgical treatment, or medical treatment with Albendazole. Needle aspiration of their cysts was not considered as an option.

All patients declined both forms of treatment on grounds of not feeling particularly ill.

All agreed, however, to return for regular follow-up visits lasted from 13 to 118 months. We collected their data retrospectively. On follow-up visits, we did a general physical examination and repeated LFT. A qualified radiologist, familiar with CED, evaluated the liver by ultrasonography.

Results

Group A consisted of 16 patients (37%). Of them, 12 had univesicular and four had multivesicular cysts. They were clinically well during the entire course of follow-up visits, lasted for a minimum of 13 and a maximum of 118 months. None had experienced worsening of their initial complaints or had developed new symptoms during this period. In 13 patients, the largest diameter of the cysts had become smaller, at least one centimeter, compared with the initial sonographic image. In three patients, the cysts that initially measured 4 to 7 centimeters in diameter were disappeared. Calcific spots were detected around 9 cysts. We reassured all patients in this group that they did not need any treatment and their cysts were unlikely to become complicated in the future, but they required to continue regular follow-up.

Group B consisted of 19 patients (44%) returned 32 to 99 months after their initial visit for routine follow-up without having any further symptoms. However, their liver cysts had increased in size on ultrasound evaluation from two to seven cm (mean of 3.4 ± 1.2 cm) compared with their size at the initial study. This enlargement signified the viability of the protoscoleces, portended a complication and hence justified surgical interventions. These patients consented to surgical operation. Eight of these patients had univesicular cysts and 11 had multivesicular cysts (Table 1). At operation clear hydatid fluid was aspirated from those who had univesicular cyst, and daughter cysts were observed in those who had multivesicular cysts. To clarify the types of the cysts, we microscopically examined the mobile protoscoleces obtained from both types of cysts. This proved the pre-operative impression of their viability.

Table 1: The relationship between the type of the cysts and other criteria in group B

Type of cyst	laps (moths)	In size (cm)	Ser status
Univesicular	32-87	2-5	+
Multivesicular	39-99	2-7	Not done

Lap= laps from ten last visit; In size= increased size; Ser S= Serologic status

Group C consisted of eight patients (19%) returned between 39 and 81 months after their initial visit. They presented with fever, right

upper quadrant pain, or jaundice. Three patients had univesicular and five patients had multivesicular cysts (Table 2). Ultrasonography at this stage showed an "abscess cavity" along with mild dilatation of intrahepatic biliary ducts, which was distinctly different from that of the initial study. The sizes of cysts in these patients were variable, smaller or bigger, compared with the initial size. The initial and new sonographic images attested independently by two radiologists.

Table 2: Complications in group C according to the type of cyst

Type of cyst	LA	ObJ
Univesicular	3	0
Multivesicular	3	2

LA= liver abscess; ObJ= obstructive jaundice

All cysts in this group of patients, who underwent operation, were located in the right lobe of the liver. Secondary infection had occurred in six patients, and cultures taken at operation grew mixed microorganisms, mostly *Escherichia Coli*. In two patients who had elevated total serum bilirubin levels of 12 and 15mg/dL, we explored the common bile duct and found solid hydatid elements consisting of small daughter cysts and/or fragments of the laminated membrane of the parasite. So we evacuated the material and performed sphincteroplasty for both patients. All patients in this group recovered fully.

Discussion

Having considered the broad spectrum of pathology and clinical presentation of CED of the liver, the total number of patients in this series was too small to fully reflect the natural course of the disease. But the fact that, 37% of asymptomatic liver hydatids followed over a period of one to ten years aborted spontaneously can weaken the idea that all such cysts should be treated prophylactically to avoid the complications at an unknown future date.

Surgical operation was performed on 44% of patients without assurance that a mean increase of 3.4 centimeter in cyst diameter was a reliable sign of impending complication. Such enlargement was consistent with viability of the cysts, but it did also indicate an impending complication justifying pre-emptive intervention. Further expectant management would have clarified the situation, if one had been able to rationalize such risk taking. The fact that sometimes completely asymptomatic liver hydatids as large as 15 to 20 centimeters, have calcified in endemic regions, suggests that there is no direct correlation between size and the likelihood of complication.

Only two patients (4.6 %) faced the most serious complication of this disease, which was rupturing into major bile ducts and precipitating obstructive jaundice. Secondary bacterial infection was seen in six (13.9%) patients, raising again the question whether the probable complications justify the prophylactic intervention.

None of the 43 patients received any medications. This may have affected the 37% rate of spontaneous involution and 44% rate of further growth. Assuming the approximately 50% efficacy for Albendazole treatment,¹⁴ the frequency of intrabiliary rupture of liver hydatids might have been reduced to 2.3 %. This can further weaken the pre-emptive surgical option for all incidentally discovered liver hydatids. Considering the relatively low toxicity and cost of Albendazole, a prolonged course of such medical treatment might well be more judicious approach to manage asymptomatic liver hydatids.

What can be readily ignored in deciding whether an incidentally discovered liver hydatid cyst should be treated or not, are the presenting signs and symptoms of the patient. Nonspecific aches and pains cannot be relied upon as indicating progressive growth or impending complication of liver hydatids. Calcification of a portion of the pericystic layer can, with reasonable assurance, be taken that spontaneous abortion is likely to take place.²² Another sign indicative of spontaneous or drug assisted involution, is collapse of the cyst, or at least loss of its round and tense configuration. Once the internal pressure of a liver hydatid cyst decreases the chance of complications will be decreased. And expectant management can be a suitable option.⁵

There is a general belief about the surgical approach for treatment of all complicated and symptomatic liver hydatid cysts.¹⁻⁹ But, there is no consensus about the most appropriate management for incidentally discovered asymptomatic echinococcal cysts of the liver.^{10,11,23} Most authors advise an intervention surgery or puncture, aspiration, injection, and reaspiration of scolical (PAIR method) for the treatment of asymptomatic liver hydatid cysts, especially when the size of the cyst is more than four cm.^{23,24} But postoperative complications is as high as 30%.^{25,26} Our study showed only 19% of asymptomatic liver hydatid cysts eventually complicated without any treatment. This percent is less than postoperative complications. The rate will surely be the least if we medically treat the patients and follow them up.

Conclusion

A good percentage of asymptomatic incidentally discovered liver hydatid cysts, if followed long

enough, will spontaneously be aborted without any treatment, whereas a large proportion will continue to grow silently. Less than 5% of asymptomatic liver hydatid cysts eventually ruptured into major bile ducts and precipitating foremost complications that would require surgical intervention. Therefore, indiscriminate active intervention for all incidentally discovered liver cysts, especially in endemic areas where echinococcosis remains a very common condition, is not recommended and operation can be reserved for complicated cases.

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