## **Original Research Article**

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# Hydatid cyst of liver: different modalities of management and outcome

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### **ABSTRACT**

**Background:** Echinococcosis affects the liver rather than other organs in 50-70 % of cases. While surgery is recognized as the only satisfactory method of treatment for liver echinococcosis (LE), many controversial results have been reported but total excision of the cyst alone or with part of the liver appear to be the most effective. This method is not always feasible, since it depends on the size and site of the cyst.

**Methods:** The study information was collected using pre-tested semi structured questionnaire. The questionnaire was presented in the Department for critical review, following which necessary changes were made in the questionnaire. For all patients meticulous records was maintained regarding clinical features, family history, dietary habits and by performing various investigations.

**Results:** Surgery was the mainstay of management. Out of 30 patients, 24 patients underwent complete pericystectomy (80%), 4 patients underwent incomplete pericystectomy (13.4%) and 3 patients had other procedures along with pericystectomy. Only 2 patients managed conservatively (6.7%).

Conclusions: A variety of techniques, both radical and conservative, are used in the treatment of liver hydatid cyst.

Keywords: Conservative management, Hydatid cyst, Surgery

#### INTRODUCTION

Liver hydatid cyst is an infestation caused by the larvae of *Echinococcus granulosus tenia*. Man is an accidental intermediate host in the evolution of this parasite. It is still an important health problem in our country, which is an endemic area for the infection. It has a variety of courses, sometimes even remaining asymptomatic for years, and diagnosed only incidentally using screening methods. Most commonly, it causes pain and sensation of fullness. Less commonly, it may present after rupturing into the biliary tract causing obstructive jaundice and cholangitis, or rupturing into the abdominal cavity causing acute abdomen. Until recently, the treatment of hydatid cyst was only surgical. However, percutaneous puncture and aspiration of the cyst, injection of scolex eliminating substance and reaspiration

(PAIR) combined with chemotherapy has emerged as an alternative treatment.<sup>5-7</sup> Mebendazole and albendazole are used as medical treatment.<sup>8,9</sup> There are recent studies mentioning successful results with albendazole injected into the cyst.<sup>10</sup> As medical treatment alone is not an ideal solution, it is used in combinations such as before/after PAIR or before/after surgery.<sup>10</sup> Nevertheless, especially in late stage cysts, surgery remains the gold standard.

Echinococcosis affects the liver rather than other organs in 50-70 % of cases. <sup>11</sup> While surgery is recognized as the only satisfactory method of treatment for liver echinococcosis (LE), many controversial results have been reported but total excision of the cyst alone or with part of the liver appears to be the most effective. <sup>12,13</sup> This method is not always feasible, since it depends on the size and site of the cyst. Moreover, intraoperative blood

loss and postoperative bile leakage from the resected area may occur. A conservative approach of evacuation of the cyst contents may lead to problems of a residual cavity with the subsequent complications of biliary fistula, cavity contamination and drainage of purulent material. Various procedures have been developed to overcome these complications such as external or internal drainage following evacuations and capitonnage with or without omentoplasty. 15,16

#### **METHODS**

This study was carried out for a period of 12 months at a Medical College Hospital to know the management modalities and their outcome. The patients attended surgical OPD and got admitted with hyatid cyst of liver during the study period were the study subjects

Patients presenting with varying gastrointestinal symptoms and signs, and symptoms of space occupying lesions of liver like obstructive jaundice, mass per abdomen, patients with complications due to rupture of hydatid cyst were included for the study whereas patients with extra hepatic hydatid cyst and advanced complications where diagnosis was difficult, were excluded.

A total of 30 patients were considered for the study and these patients were selected by non-probability purposive sampling technique.

The study information was collected using Pre tested semi structured questionnaire. The questionnaire was presented in the Department for critical review, following which necessary changes were made in the questionnaire.

For all patients meticulous records was maintained regarding clinical features, family history, dietary habits and by performing various investigations

### Investigations

- Blood routine
- Blood urea
- Serum creatinine
- Liver function tests
- Plain X ray erect abdomen
- USG abdomen
- CT abdomen.

#### **RESULTS**

Table 1: Distribution based on number of cyst (USG).

Cyst	Frequency	Percentage
Single	28	93.3
Multiple	2	6.7
Total	30	100

On USG, the proportions of patients with single cyst found were 93.3% and with multiple cysts were 6.7%.

Table 2: Distribution based on lobe of liver involved (USG).

Liver	Frequency	Percentage
Right lobe	25	83.3
Left lobe	3	10.0
Both	2	6.7
Total	30	100

The most common lobe involved was right lobe (83.3%). Both lobes were affected in 6.7% of patients.

Table 3: Distribution based on size of cyst (USG).

Size cyst	Frequency	Percentage
<5 cms	3	10.0
5 - 10 cms	17	56.7
>10 cms	10	33.3
Total	30	100

Majority of cyst size were between 5 - 10 cms (56.7%) followed by more than 10 cms (33.3%) and less than 5 cms (10.0%).

Table 4: Distribution based on other positive findings (USG).

USG	Frequency	Percentage
Yes	4	13.3
No	26	86.7
Total	30	100

The other USG findings were found in 13.3% of patients.

Table 5: Distribution based on chest X ray findings.

Chest X ray	Frequency	Percentage
Normal	29	96.7
Abnormal	1	3.3
Total	30	100

Abnormal chest X ray finding was present in only one patient (3.3%).

Table 6: Distribution based on erect X ray abdomen.

Erect X ray abdomen	Frequency	Percentage
Normal	30	100.0
Abnormal	00	00
Total	30	100.0

Erect X ray abdomen was within normal limits in all patients (100%).

Table 7: Distribution based on CT abdomen.

CT abdomen	Frequency	Percentage
Done	9	30.0
Not done	21	70.0
Total	30	100.0

CT abdomen was done only in 30% of patients.

Table 8: Distribution based on management.

Management	Frequenc y	Percenta ge
Conservative		
Albendazole/mebendazole	02	06.7
Percutaneous aspiration	00	00
Surgery		
Completet pericystectomy	24	80.0
Incomplete pericystectomy	04	13.4
Others	03	10.0

Surgery was the mainstay of management. Out of 30 patients, 24 patients underwent complete pericystectomy (80%), 4 patients underwent incomplete pericystectomy (13.4%) and 3 patients had other procedures along with pericystectomy. Only 2 patients managed conservatively (6.7%).

Table 9: Distribution based on outcome.

Outcome	Frequency	Percentage
Complete recovery	24	80.0
Partial response	02	06.7
Not responded	04	13.3
Total	30	100

Out of 30 patients, 24 patients recovered completely (80%). 2 patients had partial response (6.7%). 4 patients did not respond (13.3%).

Table 10: Distribution based on post-operative complications.

Post op.complications	Frequency	Percentage
Bile leak	02	06.7
Wound infection	02	06.7
Residual cyst	02	06.7
Others	06	20.0

Post-operative complications like bile leak (6.7%) and wound infection (6.7%) was observed in 2 patients.

### **DISCUSSION**

Surgery remains the gold standard treatment for hydatid liver disease. The aim of surgical intervention was to inactivate the parasite, to evacuate the cyst along with resection of the germinal layer, to prevent peritoneal spillage of scolices and to obliterate the residual cavity. It can be performed successfully in up to 90% of patients if a cyst does not have a risky localisation. However, surgery may be impractical in patients with multiple cysts localised in several organs and if surgical facilities are inadequate. The introduction of chemotherapy and of the PAIR technique (puncture - aspiration - injection - respiration) offers an alternative treatment, especially in inoperable patients and for cases with a high surgical risk. Cysts with homogeneously calcified cyst walls need, probably, no surgery but only a 'wait and observe' approach.

The choice of an optimal treatment should be carefully assessed in each case. <sup>17,18</sup> The principles of hydatid surgery are; Total removal of all infective components of the cysts; the avoidance of spillage of cyst contents at time of surgery; management of communication between cyst and adjacent structures; management of the residual cavity; minimize risks of operation.

Conservative procedures are safe and technically simple, and are useful in the management of uncomplicated hydatid cysts. Marsupialization was the most common used procedure because it is quick and safe. However, their main disadvantage is the high frequency of postoperative complications, the most common being bile leak from a cyst-biliary communication, bilomas and bile peritonitis (4% - 28%).

#### **CONCLUSION**

None of the techniques is applicable alone in the treatment of all cysts. Technique should be chosen based on the characteristics of each cyst. Cyst characteristics, experience of the surgeon and conditions of the medical center will be factors in the choice of the approach. A recent tendency is to prefer treatment of early stage cysts by methods with less morbidity such as PAIR or laparoscopy. For later stage cases, where these methods are not appropriate, non obliterative surgical techniques should be preferred. But regardless of the surgical treatment used in liver hydatid cyst, combination with chemotherapy is the safest and most effective approach

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institutional ethics committee

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