Original Research Article

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A case series of laproscopic management of hydatid cyst of liver

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ABSTRACT

Background: Hydatid cyst is zoonosis caused due to Echinococcus species mainly, *Echinococcus granulosus* and *Echinococcus multilocularis*. It was first described by Hippocrates as "liver full of water". In developing countries like India, Iran, China and Mediterranean countries it is still remains a major problem. It can involve any organ and can mimic almost any pathological condition.

Methods: The present study was carried out from January 2014 to December 2015. Total 20 cases of liver hydatid operated laproscopically studied prospectively. Omentoplasty with external drainage was done as sole operative modality. Postoperative follow up was done on 2nd week, 1, 3 and 6 months.

Results: Among the observed patients most common age group was 31-40 years (40%), with male predominance (60%). Abdominal pain was most presenting symptom (65%). Right lobe involved involved in 75% patients. Cysts are usually single (90%). Bleeding and contamination of peritoneal cavity with scolices was main intra-operative complication (5% each). Mean operative time was 99.95 minutes. In post-operative period biliary leak was major complication (10%). Cosmetic results were good with barely visible scar (90%).

Conclusions: Surgery is the gold standard treatment for hydatid liver and laproscopic technique is gaining more and more importance with advantage of being minimal invasive and less complications with better patient satisfaction.

Keywords: Echinococcus granulosus, Hydatid disease

INTRODUCTION

Hydatid cyst is zoonosis caused due to Echinococcus species mainly, *Echinococcus granulosus* and *Echinococcus multilocularis*. It was first described by Hippocrates as "liver full of water". With evolving science, advanced diagnostic and treatment facilities and above all better living conditions in developed countries, the disease now being limited only to agriculture and ranch work associated people of Australia, Latin America, Eastern Europe and New Zeland.²

But in developing countries like India, Iran, China and Mediterranean countries it is still remains a major problem. In India the most affected areas are Central India, Andhra Pradesh and Tamil Nadu.² It can involve any organ and can mimic almost any pathological condition. Although hydatid cysts can be treated by various modalities, like surgery, chemotherapy, and or percutaneous aspiration, but surgery by far remains the gold standard for treatment among day by day evolving new procedures. Among surgical procedures laproscopic modality is rapidly gaining acceptance and performed regularly.

METHODS

The present study was carried out from January 2014 to December 2015. Total 20 cases of liver hydatid operated

laproscopically studied prospectively. All patients diagnosed by ultrasound and then diagnosis confirmed by CT scan. Patients included in study are hydatid disease of liver with or without symptoms, gharbi Type I, II and III, cysts that were peripherally situated and those with size between 5 to 15 cm only. Rest others are excluded from study. All the diagnosed cases were subjected to detailed history and physical examination with all the base line investigations. Patients were operated after a preoperative albendazole therapy for 28 days in dose of 10 mg/kg and postoperatively all patients were put on albendazole three courses of 28 weeks each with 1 week gap in between.

All patients are operated with standard 3 chip stortz laproscope with 10 mm suction. After port placement according to lobe of liver involved, 2% savlon is instilled

into the cyst cavity as a scolicidal agent. After 10 minutes, the scolicidal agent is sucked and the cyst wall opened. In case of overt signs of cyst-biliary communication, use of scolicidal agent is avoided. The open edges are sutured using 3-0 vicryl. Omentoplasty is done for all cases. Drainage tube is kept near the cyst. Postoperatively assessment is done on time taken for surgical procedure, intra-operative complications, conversion post-operative to open procedure, complications, biliary leak and hospital stay. Postoperative follow up was done on 2nd week, 1, 3 and 6 months.

RESULTS

20 patients were studied.

Table 1: Age distribution.

Age group	No. of patients	Percentage	Weatherston et al ³	Tiwary et al ⁴
1-10	0	0	0	0
11-20	3	15%	8.7%	9.09%
21-30	4	20%	39.1%	15.15%
31-40	8	40%	41.3%	45.46%
41-50	3	15%	10.87%	15.16%
51-60	2	10%	0	15.16%

Table 2: Sex distribution.

Sex	No. of patients	Percentage	Weatherston et al ³	Tiwary et al ⁴
Female	8	40%	37%	69.05%
Male	12	60%	63%	30.95%

Table 3: Clinical presentation.

Presentation	No. of patients	Percentage	Malik et al⁵	Akther et al ⁶
Pain	13	65%	76.81%	89.47%
Lump	10	50%	55.07%	85.26%
Jaundice	4	20%	8.70%	6.31%
Fever	1	5%	30.43%	26.31%
Asymptomatic	1	5%	-	-

Table 4: Lobes involved.

Lobes	No. of patients	Percentage	Malik et al ⁵	Akther et al ⁶
BL	2	10%	11.36%	4%
Right	15	75%	65.2%	62.5%
Left	3	15%	24.6%	26.13%

Table 5: Number of cysts (n = 23 cysts).

Cysts	No. of patients	%	Safioleas et al ⁷	Kalinova et al ⁸
Single	18	90%	60.60%	84.25%
Multiple	2	10%	39.40%	15.75%

Table 6: Gharbi classification of cysts (n = 23).

Gharbi's type	No. of cysts	%	Ezer A et al ⁹	Malki E et al ¹⁰
Type I	5	21.7%	5 (12%)	18 (11.3%)
Type II	5	21.7%	3 (7%)	14 (8.8%)
Type III	13	56.6%	23 (53%)	75 (47.2%)

Mean operative time was 99.95 minutes in our study. Chowbey PK et al reported mean time of 84 (+/-) 6 minutes while Ertem M et al reported time of 82 minutes. Conversion required: In only 1 patient due to presence of extensive adhesions. Chowbey PK et al in his study no one case is converted to open. Baskaran V et al

studied and only 2 patients were converted to open. ^{11,12} Mean duration of hospitalization was 5 days. Ertem M et al¹³ in their study found that post-operative hospital stay was 4.2 days. Saglam et al and Bickel A et al in their

study both found that post-operative hospital stay of 6 days each. No recurrence occurred in the follow up period. Chowbey PK et al, Ertem M et al and Palanivelu et al in their study also shows no recurrence. 11,13,14

Table 7: Intraoperative complications.

Complication	No. of patients	Percentage	Chowbey PK et al (16 patients) ¹¹	Baskaran V et al (18 patients) ¹²
Hollow viscous injury	0	0	1 patient	0
Bleeding	1	5%	0	0
Contamination with scolices	1	5%	0	5 patients
Anaphylaxis	0	0	0	0

Table 7: Post-operative complications.

Complication	No. of patients	%	Palanivelu et al (75 patients) ¹⁴
Port site infection	1	5%	2.7%
Bile leak	2	10%	12%
Sinus tract formation	0	0	0
Anaphylaxis	0	0	0
Recurrence	0	0	0

Table 8: Cosmetic results.

Cosmetic result	No. of patients	Percentage
Barely visible	18	90%
Well healed scars	2	10%
Complicated scars	0	0

DISCUSSION

Hydatid disease is still a major problem in rural agricultural population of Vidarbha region. It can involve any organ of body and can present with wide variety of symptoms, depending on the organ involved. Liver is most common organ involved and surgery is most commonly done procedure.

In our study of total 20 patients, the hydatid most commonly affected 31-40 year age group (40%) which is similar to previous studies of Weatherston et al (41.3%) and Tiwary et al (45%).^{3,4} In our study male female ratio was 2:3, which was comparable with Weatherston et al, but Tiwary et al shows more male preponderance.^{3,4} Most common clinical presentation was abdominal pain (65%), which is comparable with previous studies of Malik et al (76.81%) and Akther et al (89.47%).^{5,6}

Right lobe of liver was most commonly involved (75%), which is similar to studies of Malik et al (65.2%) and Akther et al (62.5%). Majority of cysts are single (90%), comparable to previous studies of Safioleas et al

(60.6%) and Kalinova et al (84.25%). ^{7,8} Most of operated cysts were of Gharbi type III (56.6%), similar to Ezer A et al (53%) and Maliki E et al (47.2%). With advent of time and expertise laproscopic surgery is gaining more and more importance and becoming procedure of choice. Laproscopic cyst evacuation and omentoplasty is most commonly done procedure. In our study all the patients were operated by laproscopic cyst evacuation and omentoplasty.

The most common intra operative complication encountered by us was bleeding and contamination of peritoneal cavity with scolices (5% each), which is similar to previous studies of Chowbey PK et al and Baskaran V et al. The most common postoperative complication encountered was biliary leak (10%) and port site infection (5%), which was comparable with Palanivelu et al (12% and 2.7 % respectively). Mean operative time was 99.95 minutes in our study. Chowbey PK et al reported mean time of 84 (±) 6 minutes while Ertem M et al reported time of 82 minutes.

The advantages of laproscopic surgery over open surgery are less operative time required, less intraoperative complications, less spillage of hydatid fluid, less conversion rate, shorter hospital stay and better cosmetic results. Mean duration of hospitalization was 5 days comparable to Ertem M et al (4.2 days), Saglam et al and Bickel A et al (6 days each). No recurrence occurred in the follow up period. Chowbey PK et al, Ertem M et al and Palanivelu et al in their study also shows no recurrence. 11,13,14

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institutional ethics committee

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