



OPEN VERSUS LAPAROSCOPIC TREATMENT FOR HYDATID DISEASE OF THE LIVER

Malik Azad Hussain*

Senior Consultant Surgery District Hospital Anantnag.

*Corresponding Author: Malik Azad Hussain

Senior Consultant Surgery District Hospital Anantnag.

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ABSTRACT

Background: Laparoscopic approach is preferred now days both by the surgeons and the patients for any disease that needs surgical intervention, provided it is feasible. This study was designed to evaluate the results of laparoscopic treatment versus open approach in hydatid disease of liver. **Objectives:** To compare surgical outcome of laparoscopic approach versus open surgery for the management of hepatic hydatid disease. **Material and methods:** Patients, who were operated from June 2009 to June 2018 for hepatic hydatid disease, were enrolled in the study. Demographic and other baseline characteristics and results and complications of two surgical approaches (laparoscopic and open) were collected and recorded on a predesigned proforma. Data were analysed after applying statistical tests as appropriate. **Results:** A total of 54 patients had operative management for hepatic hydatid cystic lesions. Twenty seven patients had laparoscopic management and 27 patients were managed through open procedures. Hospital stay in laparoscopic group was 4.54 ± 1.59 days while as in open group it was 9.8 ± 1.61 days ($P < 0.05$). Wound site infection was significantly higher in open surgical group. Biliary leak was higher in laparoscopic group but was not significant ($p > 0.05$). Mean operative time in laparoscopic group was 93.80 ± 6.01 minutes, while as in open group it was 63.41 ± 7.96 minutes ($P < 0.05$). Follow up showed occurrence of recurrence in two of the open group only. **Conclusions:** Surgical site infection, hospital stay, recurrence are significantly reduced in laparoscopic as compared to open surgical approach except for greater operation time which favours open surgical approach. Our study suggests that laparoscopic approach for hepatic hydatid disease is feasible and safe.

KEYWORDS: Hepatic hydatid disease, Laparoscopy, open surgery.

INTRODUCTION

There are four known forms of echinococcosis in humans. Among them echinococcus granulosus is most common cause of hydatid disease. Echinococcosis is considered to be endemic in regions wherein farming is the basic occupation of the population.^[1] Although all the tissues can be affected but liver is affected in 75% of cases, lung in about 10% - 15% and other organs in 5% - 10%.^[2] Right lobe of liver is commonly involved.^[3] Hydatid disease must be treated once it is diagnosed. Surgery remains the gold standard therapy^[4,5] despite the increased interest in nonsurgical techniques. Because the open procedures are followed by significantly morbidity, especially in terms of wound infection^[4,5] the laparoscopic approach has become increasingly popular, although controversies regarding the role of laparoscopy in the management of hydatid disease have not been resolved to date.^[4] Laparoscopic approach is preferred now days both by the surgeons and the patients for any disease that needs surgical intervention, provided it is feasible. This study was designed to evaluate the results

of laparoscopic treatment versus open approach for hydatid disease of liver.

MATERIAL AND METHODS

This study was conducted at district hospital Anantnag which is a level 2 referral centre for the surgical patients in the state of Jammu and Kashmir. Study was commenced after taken ethical clearance from the hospital ethical committee. It was a retrospective observational study. Data of the patients who were operated from June 2009 to June 2018 for hepatic hydatid disease was collected as per predesigned proforma and analysed. The diagnosis of echinococcal cysts was based on patient's history, physical examination, serological testing, and ultrasound and computed tomography scan. This study followed our institutional guidelines. The study included all adult patients with the cysts located in segment 3,4,5,6 and 8, with no evidence of calcifications, major biliary communication or cyst infection. The patients which were excluded from the study included Cyst located in segment 1, 2, and 7 of liver, multiple

liver hydatid cyst or cyst located near vascular liver element, Intra-parenchymal cysts, patients having severe cardio-pulmonary disease, recurrent and ruptured hydatid cyst of liver and previous multiple upper abdominal surgery. Institutional protocol of management,

preoperative medical treatment with albendazole at a dose of 10–15 mg/kg was given for all cases that scheduled for surgery 1 month before surgery and continued at least 3 months following surgery.

RESULTS

Table 1: Depicts demographic and other baseline characteristics of patients. Table 2 depicts the complications and other outcomes of two surgical approaches.

Characteristics		Laparoscopic Group	Open surgery Group
Sex	Male	11	12
	Female	16	15
Type of cyst	Univesicular	23(85.1)	22 (81.40)
	Multi vesicular	4 (14.8)	5 (18.50)
No. Of cysts	1	25(92.5)	24 (88.8)
	2	2 (7.4)	2 (7.4)
	3	0 (0)	1 (3.7)
Site of cysts	Right lobe	20 (74.00)	19(70.30)
	Left lobe	6 (22.20)	7(25.90)
	Both lobe	1 (3.7)	1 (3.7)

Table 2: Complications and other outcomes of two surgical approaches.

Complication	Laparoscopic Group	Open Group	P Value ^a
Anaphylaxis	0	0	1
Surgical site infections	0	3 (11.1)	< 0.0001
Major Intraoperative spillage	1	1	1
Minor intraoperative spillage	3	2	0.771
Biliary leak	3(11.1)	2(7.4)	0.467
Mean operative time	93.8 ± 6.01	63.41 ± 7.96	< 0.0001
Recurrence	0	2(7.4)	0.040
Hospital stay(days)	4.54±1.59	9.8±1.61	< 0.0001

DISCUSSION

A total of 54 patients were enrolled in our study (27 in each group). Demographic characteristics including sex and age distribution were comparable in two groups (table 1). Although the mean operating time was higher in laparoscopic group but hospital stay and local wound infection was significantly lower.

In our study females outnumbered the males in both the groups (table 1). The mean age of distribution in laparoscopic group was 43.8±8.3 years while in open group was 45.80±7.9 years, which is comparable.

In our study none of patients had Anaphylaxis. Other researchers have also observed similar findings.^[6] Surgical site infections in open surgical group were significantly higher which in agreement with other studies.^[7,8]

Biliary leak was higher in laparoscopic group (11.1/7.4%). However the difference was not significant. Similar results have been reported by other studies.^[6,9] Mean operative time in laparoscopic group was

93.80±6.01 minutes, while as in open group it was 63.41±7.96 minutes which was statistically significant. However other studies have reported comparable operation timing in two approaches.^[10,11] This could be because we were using laparoscopy approach for the first time in our hospital. Hospital stay in laparoscopic group was 4.54±1.59 days while as in open group it was 9.8±1.61 days, which was statistically significant this was in agreement with other studies^[12]

In our study, there was no recurrence in laparoscopic group while as in open group 7.4% had recurrence. Researchers^[13] have reported zero recurrence rates in patients treated with Albendazole pre and post operatively.

CONCLUSION

Surgical site infection, hospital stay, recurrence are significantly reduced in laparoscopic as compared to open surgical approach except for greater operation time which favours open surgical approach. Our study suggests that laparoscopic approach for hepatic hydatid disease is feasible and safe.

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