Section: Research Paper

Surgical treatment and outcome of hydatid Cyst : study from tertiary care center

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ABSTRACT

Background: Hydatid cyst is a zoonotic disease caused by larval stage of Echinococcusgranulosus which leads to cyst formation commonly into the liver. The present study was conducted to assess surgical treatment and outcome of hydatid cyst.

Materials & Methods:46 cases of hydatid cysts of both genders were included. Patients were divided into 2 groups of 23 each. Group I were treated with radical surgery and group II with conservative surgery. Parameters such as symptoms, size, depth and recurrence etc. was recorded. Hepatic hydatid cysts were classified as per WHO classification.

Results: Group I had 13 males and 10 females and group II had 12 males and 11 females. Symptoms recorded were jaundice in 11 and 15, pain in 23 and 23, fever in 9 and 5, lump abdomen in 11 and 14. Location was right lobe in 10 and 8, left lobe in 7 and 6 and both in 6 and 9 in group I and II respectively. Type of cyst was CE1 in 3 and 4, CE2 in 5 and 6, CE3 in 13 and 10 and CE4 in 2 and 3 in group I and II respectively. Depth of cyst was deep/central in 5 and 11 and peripheral/superficial in 18 and 12, size (cm) of the cyst was 10.5 cm and 10.2 cm in group I and II respectively. The difference was significant ($P< 0.05$). Management performed was omentopexy in 7 and 12, ext. drainage in 5 and 6 and no drainage in 11 and 5 in group I and II respectively. Complications were cholangitis in 1 and 2, intraabdominal abscess in 2 and 1 and surgical site infection in 1 and 0 in group I and II respectively. Post-operative recurrence was seen in 2 in group II. The difference was significant ($P< 0.05$).

Conclusion: Radical surgery is preferable over conservative surgical treatment in the management of hepatic hydatid cyst as it prevent recurrent disease.

Key words: Hydatid cyst, superficial, management

Introduction

Hydatid cyst is a zoonotic disease caused by larval stage of Echinococcusgranulosus which leads to cyst formation commonly into the liver.[1]Different management modalities were discussed before in literature, but surgery remains the standard treatment. Operative

modalities range from complete resection (e.g., total pericystectomy or hepatectomy) to minimal invasive procedures (e.g., percutaneous aspiration of cysts). More recently, laparoscopic approaches take a hand in the treatment of hepatic hydatid cysts.[2]

Surgery for hepatic hydatid cyst can be classified into two types. Conservative surgery (CS) aims at deroofing the cyst, evacuating its contents and management of the residual cavity.[3] Radical surgery (RS) consists of aggressive options like, total/subtotal cystopericystectomy, non-anatomical and formal hepatectomy. Residual thick non collapsible cyst wall in conservative approach becomes the seat of collection, infection, bilioma formation.[4] The exogenous vesiculations in the wall lead to high rates of recurrence. The purpose of radical surgery is to eliminate the parasite along with cyst and its vesiculations to prevent recurrence.[5] However, resectional approach in the past was considered too radical with its associated morbidity for supposedly benign disease. With better understanding of segmental liver anatomy, advent of efficient energy devices i.e. Cavitron ultrasonic surgical aspirator (CUSA), Harmonic & bipolar instruments and availability of intraoperative.[6]The present study was conducted to assess surgical treatment and outcome of hydatid cyst.

Materials & Methods

The present consisted of 46 cases of hydatid cysts of both genders. All gave their written consent to participate in the study.

Data such as name, age, gender etc. was recorded. Diagnosis was established by clinical evaluation, hydatid serology, sonography, contrast enhanced computed tomogram (CECT) of abdomen or magnetic resonance imaging (MRI) of abdomen and intraoperative findings. Patients were divided into 2 groups of 23 each. Group I were treated with radical surgery and group II with conservative surgery. Parameters such as symptoms, size, depth and recurrence etc. was recorded. Hepatic hydatid cysts were classified as per WHO classification.Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

Results

Table I Distribution of patients

Groups	Group I (23)	Group II (23)
M:F	13:10	12:11

Table I shows that group I had 13 males and 10 females and group II had 12 males and 11 females.

Table II Assessment of parameters

Parameters	Variables	Group I	Group II	P value
Symptoms	Jaundice	11	15	0.62
	Pain	23	23	
	Fever	9	5	
	Lump abdomen	11	14	
Location	Right lobe	10	8	0.75
	Left lobe	7	6	
	Both	6	9	
Type of cyst	CE1	3	4	0.91

	CE2	5	6	
	CE3	13	10	
	CE4	2	3	
Depth of cyst	Deep/central	5	11	0.05
	Peripheral/superficial	18	12	
Size (cm)		10.5	10.2	0.97

Table II, graph I shows that symptoms recorded were jaundice in 11 and 15, pain in 23 and 23, fever in 9 and 5, lump abdomen in 11 and 14. Location was right lobe in 10 and 8, left lobe in 7 and 6 and both in 6 and 9 in group I and II respectively. Type of cyst was CE1 in 3 and 4, CE2 in 5 and 6, CE3 in 13 and 10 and CE4 in 2 and 3 in group I and II respectively. Depth of cyst was deep/central in 5 and 11 and peripheral/superficial in 18 and 12, size (cm)of the cyst was 10.5 cm and 10.2 cm in group I and II respectively. The difference was significant (P< 0.05).

Graph IAssessment of parameters

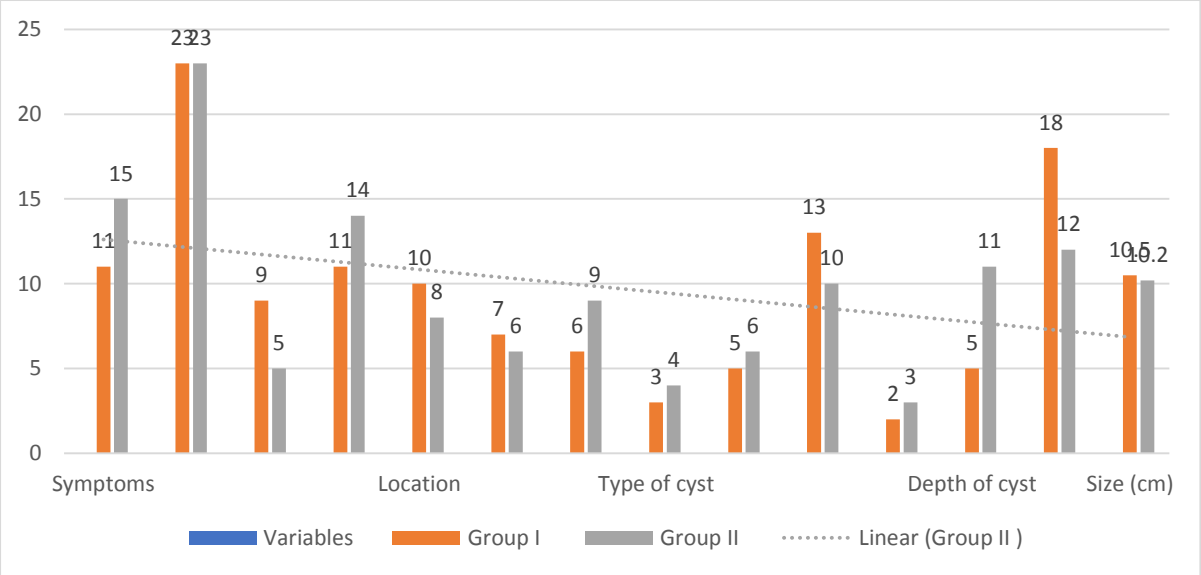

Table III Management, recurrence and complications

Parameters	Variables	Group I	Group II	P value
Management	Omentopexy	7	12	0.05
	Ext. drainage	5	6	
	No drainage	11	5	
complication	Cholangitis	1	2	0.75
	Intraabdominal abscess	2	1	
	Surgical site infection	1	0	
Post-operative recurrence		0	2	0.03

Table III shows that management performed was omentopexy in 7 and 12, ext. drainage in 5 and 6 and no drainage in 11 and 5 in group I and II respectively. Complications were cholangitis in 1 and 2, intraabdominal abscess in 2 and 1 and surgical site infection in 1 and 0

in group I and II respectively. Post-operative recurrence was seen in 2 in group II. The difference was significant (P< 0.05).

Discussion

Hydatid disease increased in sheep raising areas. The increased number of cases are due to contamination of vegetables with dogs' excreta, enhance the incidence of hydatid disease.[7]Surgery remains the standard of care for management of larger hydatid cyst not amenable to medical or interventional therapy. There is a controversy in the surgical approach for management of hepatic hydatid cyst.[8] Many authors consider that radical surgery is the most suitable technique due to its low incidence of bile leak and recurrence, while others consider that radical procedures subject the patient to a disproportionate risk to treat a "benign" disease and favour conservative surgical techniques.[9,10]The present study was conducted to assess surgical treatment and outcome of hydatid cyst.

We found that group I had 13 males and 10 females and group II had 12 males and 11 females. Symptoms recorded were jaundice in 11 and 15, pain in 23 and 23, fever in 9 and 5, lump abdomen in 11 and 14. Location was right lobe in 10 and 8, left lobe in 7 and 6 and both in 6 and 9 in group I and II respectively. Deo et al[11] in their study sixty-four patients underwent surgery. RS was done in 27 (42.2%) patients and CS in 37 (57.8%) patients. The mean age was 35.6 (13–72) years. The mean size of the cyst was 10.3 ± 2.9 cm. The cyst location was peripheral in 81.5% and 56.8% in RS and CS groups respectively. Intraoperative Cyst biliary communication was detected in 48.1% of RS & 35.1% in CS group of patients. The post-operative bile leak was significantly less in RS group (7.4% vs 27.0%, p = 0.047). Postoperative endoscopic stenting for persistent biliary fistula was necessitated in five of CS and only one patient from RS group. None of RS patients had recurrence while 3 patients of CS developed recurrence.

We found that type of cyst was CE1 in 3 and 4, CE2in 5 and 6, CE3 in 13 and 10 and CE4 in 2 and 3 in group I and II respectively. Depth of cyst wasdeep/centralin 5 and 11 and peripheral/superficial in 18 and 12, size (cm) of the cyst was 10.5 cm and 10.2 cm in group I and II respectively. Mansy et al[12]evaluated radical treatment in management of liver hydatid cyston 103 patients Total pericystectomy was carried out in 80 (77.67%) patients; while hepatic resection was carried out in 14 (13.59%) patients. Laparoscopic management was done in 6 (5.82%) patients (5 cases with total pericystectomy and 1 case with sub-total pericystectomy and omentoplasty). Twenty-one patients developed post-operative complications, four patients suffered from biliary leak. There was no mortality. Follow-up period ranged from 6 to 60 months with no recurrence. Radical surgical procedures were safe and effective in management of hepatic hydatid cyst when it was done by experienced surgeons, with lower morbidity rates and no recurrence.

We found that management performed was omentopexy in 7 and 12, ext. drainage in 5 and 6 and no drainage in 11 and 5 in group I and II respectively. Complications were cholangitis in 1 and 2, intraabdominal abscess in 2 and 1 and surgical site infection in 1 and 0 in group I and II respectively. Post-operative recurrence was seen in 2 in group II.Aydin et al[13] did comparative retrospective study on 242 patients described significantly higher morbidity and

recurrence rates in patients managed by conservative surgery (11% vs. 3%; 24% vs. 3%). In another study by Tagliacozzo et al[14], from 454 patients, 214 were managed with conservative surgery (external drainage, marsupialization or omentoplasty), while the remaining 240 managed with radical surgery. Morbidity and recurrence rates were significantly higher in the group that was managed conservatively. In our study no recurrence was detected during the follow up period.

The limitation the study is small sample size.

Conclusion

Authors found that radical surgery is preferable over conservative surgical treatment in the management of hepatic hydatid cyst as it prevent recurrent disease.

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