



DIFFERENT REPRESENTATIONS OF HEPATIC HYDATIDS AND THEIR MANAGERMENTS

General surgery

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ABSTRACT

Introduction: Hydatid disease is a parasitic infestation by a tape worm of the kind echinococcus. The larval form of cestode, Echinococcus granulosus, manifesting as cyst located mainly still not exclusively, in the liver (up to 80%) is the reason of disease in the mankind. Echinococcus can involve any organ, but liver is the most common organ follow by the lungs. Our study showed the different clinical presentations of hydrated cyst of liver, we showed the various complications and their management and the treatment options especially surgical methods.

Materials And Method: This study of 30 patients with hydrated cyst of liver included the patients admitted in the Department of General Surgery In M.G.M Medical College and L.S.K Hospital in a period between august 2014 to September 2016. Patient of all ages and both sexes are included in this study. Department of General Surgery in M.G.M Medical College and L.S.K Hospital, Kishanganj

Results & Analysis: Our study showed that 1 patient had Retained cyst complications, 2 patients had Biliary fistula complications, 2 patients had Post operative cholangitis complications and 2 patients had Surgical site infection. 29 patient had modality of treatment is surgery, 30 patient had modality of treatment is Preoperative Chemotherapy and 30 patient had modality of treatment is Postoperative Chemotherapy.

Conclusion: The largest cyst was 14.5x14x11 cm. in right lobe of liver. Most common modality of treatment is surgical, with pre & post operative chemotherapy. The scolical agents most commonly used are combination of 0.5 % Certified and 0.05 % of chlorhexidine (SAVLON) TM. The chemotherapeutic agents were Albendazole in doses of 10 mg /kg. body wt. twice daily for 28 days for 3-4 cycles with an interval of 14 days in between the cycles. All the patients were monitored for liver dysfunctions and granulocytopenias. So, for symptomatic hydatid cyst of liver, open surgical method is the best modality of management. And in this study out of 30 patients 29 recovered well and due to associated comorbidities 1 patient was not operated, who was managed conservatively.

KEYWORDS

Different Representations , Hepatic Hydatids , Managements

INTRODUCTION

Hydatid disease is a parasitic infestation by a tape worm of the kind echinococcus. The larval form of cestode, Echinococcus granulosus, manifesting as cyst located mainly still not exclusively, in the liver (up to 80%) is the reason of disease in the mankind. Echinococcus can involve any organ, but liver is the most common organ follow by the lungs.¹ In most developed countries, cystic echinococcosis is an imported infection of very low incidence and prevalence and is found almost wholly in migrants from endemic regions. The endemic areas are the Mediterranean country, the Middle East, the southern part of South America, Iceland, Australia, Newzeland etc. The incidence in our country is as well very high. Echinococcosis is amongst the most neglected parasitic disease. Diagnosis is often late, as many hydatid cysts may remain asymptomatic even in advanced stage.²

Parasitic load, the site, the size of the cyst determines the degree of symptoms. Symptoms can be aroused by mass effect or cyst complications. Pressure outcome may initially vague. They may include nonspecific pain, cough, low grade fever, and sensations of abdominal fullness. As the mass grows the symptoms become more precise because the mass impinges on or obstruct specific organs. Complications may occur as a result of infection of the cyst or leakage of the cyst contents. The complication s includes infection; rupture into the biliary tree, peritoneal cavity, cystobiliary communication with cholangitis and sometimes anaphylactic reactions and shock rarely. The mortality rate is about 2-4%, but in untreated or in inadequately treated patients mortality is more than 90% within 10-15 yrs. of diagnosis. Hydatid cyst of liver can be managed by medical means, interventional radiology (PAIR) and by surgery. But surgery remains the primary treatment and the only hope for complete cure.³

In our country, predominantly settings with limited resources, the number of patients are high. Whole communities do not have access to appropriate treatment. The choice of treatment modalities is limited because of poor infrastructure and shortage of equipments and drugs. Furthermore, the terminology related to the designations around the parasite, its evolution and some therapeutic procedures is not uniform and sometimes inappropriate terms and wrong designations are used based on incorrect concepts. Despite high incidence, there are few published data from our country.⁴ Most of the treatment modalities we follow are from outside of India. So, i think it is pertinent to clarify some aspects concerning the hydatid cyst of the liver in order to better understanding the different presentations, therapeutic options, particularly the surgical approaches.⁵

Our study showed the different clinical presentations of hydrated cyst of liver, we showed the various complications and their management and the treatment options especially surgical methods.

MATERIALS AND METHOD

This study of 30 patients with hydrated cyst of liver included the patients admitted in the Department of General Surgery In M.G.M Medical College and L.S.K Hospital in a period between august 2014 to September 2016. Patient of all ages and both sexes are included in this study.

Study Area:

Department of General Surgery in M.G.M Medical College and L.S.K Hospital, Kishanganj.

Study Population:

Inclusion Criteria:

All patients of either sex, male or female admitted with the diagnosis of hepatic hydatid cyst.

Exclusion Criteria:

Patient present with non parasitic cystic disease of liver e.g.

1. Simple cyst,
2. Amoebic liver abscess,
3. Pyogenic liver abscess and other space occupying lesions.

Study Period: August 2014 to September 2016

Sample Size: 30 cases

Sample Design: Prospective observational study.

RESULTS & ANALYSIS

In our study we showed 1 patient were 10 -19 years old, 4 patients were 20 -29 years old, 7 patients were 30 -39 years old, 12 patients were 40 -49 years old, 5 patients were 50- 59 years old and 1 patient were >60 years old. 17 patients were male and 13 patients were Female.

22 patients had Pain abdomen, 16 patients had abdominal lump/ mass, 2 patients had Jaundice, 18 patients had Fever, 2 patients had Constitutional and 5 patients had Cholangitis. 22 patients had Hepatomegaly Signs, 16 patients had Jaundice Signs, 30 patients had Pallor Signs and 16 patients had Poor nutritional states Signs.

We found in our study 20 patients had Right lobe and 10 patients had Both lobes. 20 patients had True (+) ive Echinococcal Antibody, 10 patients had True (-) ive Echinococcal Antibody and 1 patient had False (+) ive Echinococcal Antibody. 12 patients had Deroofing and omentoplasty and wound drainage, 9 patients had Partial pericystectomy, 6 patients had Pericystic cystectomy, 2 patients had Marsupialization and 2 patients had Nonoperative.

Our study showed that 1 patient had Retained cyst complications, 2 patients had Biliary fistula complications, 2 patients had Post operative cholangitis complications and 2 patients had Surgical site infection. 29 patient had modality of treatment is surgery, 30 patient had modality of treatment is Preoperative Chemotherapy and 30 patient had modality of treatment is Postoperative Chemotherapy.

Table: Distribution Of Age, Sex, Symptoms, Presentation Signs, Lobar Involvement, Echinococcal Antibody, Operation Performed, Post Operative Complications And Modality Of Treatment

	Frequency	No. Of patients
Age	10-19	1
	20-29	4
	30-39	7
	40-49	12
	50-59	5
	>60	1
Sex	Male	17
	Female	13
Symptoms	Pain abdomen	22
	Abdominal lump / mass	16
	Jaundice	2
	Fever	18
	Constitutional	2
	Cholangitis	5
Presentation Signs	Hepatomegaly	22
	Jaundice	16
	Pallor	30
	Poor nutritional states	16
Lobar involvement	Right lobe only	20
	Lt. Lobe only	0
	Both lobes	10
Echinococcal Antibody	True (+) ive	20
	True (-) ive	10
	False (+) ive	1
	False (-) ive	0
Operation performed	Deroofing and omentoplasty and wound drainage	12
	Partial pericystectomy	9
	Pericystic cystectomy	6
	Marsupialization	2
	Nonoperative	1
Post operative complications	Retained cyst	1
	Biliary fistula	2
	Post operative cholangitis	2
	Surgical site infection	2
Modality of treatment	Surgery	29
	Preoperative Chemotherapy	30
	Postoperative Chemotherapy	30

DISCUSSION

Baruah A et al⁶(2020) Of the 26 adult patients with hydatid cysts who were part of the study, 14 (53.8%) were males and 12 (46.2%) were females. The mean age was 34.6 years. The most common site of involvement was the liver (69%) followed by lung (19.2%) and brain (7.7%). Palpable mass in the right upper quadrant of the abdomen was the most common symptom (88.3%) for liver hydatid cyst followed by pain abdomen (66.6%). Systemic symptoms like fever and weakness were present in most of the patients. The majority of patients (80%) were from rural areas.

We found that 1 patient was 10 -19 years old, 4 patients were 20 -29 years old, 7 patients were 30 -39 years old, 12 patients were 40 -49 years old, 5 patients were 50- 59 years old and 1 patient were >70 years old. 17 patients were male and 13 patients were Female.

E. D. Avgerinos et al⁷(2006) found that in presenting symptoms or

findings leading to the diagnosis of liver echinococcosis were jaundice (six cases, 17%), abdominal pain (five cases, 14%), gastrointestinal discomfort of the upper abdomen (e.g. nausea, vomiting, distention, anorexia) (two cases, 6%), acute pancreatitis (one case, 3%) and portal hypertension (one case, 3%). The rest of the cases were diagnosed incidentally (20 cases, 57%). External drainage and cystectomy with omentoplasty was performed in 21 cases (60%) and pericystectomy in 14 cases (40%). The mean hospital stay was 16.8 days. Morbidity and mortality were 18% and 3%, respectively, with no statistically significant differences between the two surgical approaches. The recurrence rate averaged 3%.

We also found that, 22 patients had Pain in abdomen, 16 patients had abdominal lump/ mass, 2 patients had Jaundice, 18 patients had Fever, 2 patients had Constitutional and 5 patients had Cholangitis.

Venukumar R et al⁸(2016) found that most common presenting complaint was pain abdomen (90%) followed by mass abdomen (30%). Prodromal symptom was present in 50% of patients. Jaundice was present in 3.3% of patients.

In our study, 22 patients had Hepatomegaly Signs, 16 patients had Jaundice Signs, 30 patients had Pallor Signs and 16 patients had Poor nutritional states Signs.

Kumar P et al⁹(2019) studied that hepatomegaly was seen in 22 patients, Jaundice seen in 16 patients. Right lobe of liver was involve in 20 patients while both lobes were involved in 10 patients. Isolated left lobe involvement was not seen. ELISA for Echinococcal Antibody was performed in all 30 patients. Sensitivity was 100% while specificity was 99%. Deroofing with omentoplasty and wound drainage was the most commonly performed procedure and was performed in 12 patients.

In our study, 20 patients had Right lobe and 10 patients had Both lobes.

Bayrak M et al¹⁰(2019) found that the surgical procedures chosen for open treatment of the residual cavity were partial pericystectomy and omentoplasty (17cases), total pericystectomy (3cases) and partial and total pericystectomy(3cases).Cysto-biliary communication was found in 9 patients. A total of 10 patients underwent preoperative endoscopic retrograde cholangiography, and one patient underwent postoperative endoscopic retrograde cholangiography. There was a progression of hypernatremia in 1 patient, wound infections in 3 patients, and perioperative hemorrhage in 3 patients. There were no statistically significant differences concerning age($p=0.344$), gender($p=0.318$), ASA classification($p=0.963$), Gharbi classification($p=0.649$) whereas there were significant differences related to cyst location($p=0.040$) and size($p=0.022$) in patients undergoing laparoscopic and open surgery.

We found that, 20 patients had True (+) ive Echinococcal Antibody, 10 patients had True (-) ive Echinococcal Antibody and 1 patient had False (+) ive Echinococcal Antibody.

Avgerinos ED et al⁷(2006) showed that external drainage and cystectomy with omentoplasty was performed in 21 cases (60%) and pericystectomy in 14 cases (40%). The mean hospital stay was 16.8 days. Morbidity and mortality were 18% and 3%, respectively, with no statistically significant differences between the two surgical approaches. The recurrence rate averaged 3%.

In our study, 12 patients had Deroofing and omentoplasty and wound drainage, 9 patients had Partial pericystectomy, 6 patients had Pericystic cystectomy, 2 patients had Marsupialization and 2 patients had Nonoperative.

Joshi U et al¹¹(2020) found that the diagnosis of hydatid cyst of the liver based on clinical manifestations, imaging studies, or serology between 2016 and 2019. Abdominal pain (49, 92.5%) and a palpable liver (17, 32.1%) were the most common complaint and physical finding in our study population, respectively.

We showed, 1 patient had retained cyst complications, 2 patients had Biliary fistula complications, 2 patients had Post operative cholangitis complications and 2 patients had Surgical site infection.

Safioleas MC et al¹²(2006) showed that all patients were treated surgically. Surgical procedures included external drainage, simple closure, marsupialization, partial cystectomy with omentoplasty,

radical procedures, laparoscopic drainage, and radiofrequency ablation. The first 3 techniques carried a higher complication rate (36.5%) compared with the other techniques (17.85%; $P < .05$). However, omentoplasty and external drainage carried a higher recurrence rate (7.42% overall), as compared with radical procedures (3.22%).

We found, 29 patient had modality of treatment is surgery, 30 patient had modality of treatment is Preoperative Chemotherapy and 30 patient had modality of treatment is Postoperative Chemotherapy.

CONCLUSION

Complications seen were a) retained cyst, b) biliary fistula c) Cholangitis and d) surgical site infection. Patients who were treated surgically had abdominal USG post operatively & ELISA for IgM were done in follow up period. Abdominal USG is a very cost effective & reliable tool in the follow up period, because it helps to detect recurrences in the liver or any other sites in peritoneal cavity. On specific analysis of patients with hydatid cyst in liver, the following conclusions were drawn in addition to the above: Most patients were in the 3rd -4th decades of life. The predominant symptoms were right upper abdominal pain. Hepatomegaly seen in majority of patients and pallor & malnutrition were seen in almost all patients. And jaundice seen in one half of patients. The right lobe of liver is involved in almost $> 2/3$ rd of the cases, while isolated left lobe involvement was not seen in this study. Both lobes involvement were seen in $1/3$ rd of cases, hence correlating with published literatures. Solitary hydatid cyst in liver was present in $1/3$ rd of cases and multiple cysts were found in $2/3$ rd of cases and some had cystobiliary communications.

The largest cyst was 14.5x14x11 cm. in right lobe of liver. Most common modality of treatment is surgical, with pre & post operative chemotherapy. The scolicidal agents most commonly used are combination of 0.5 % Certified and 0.05 % of chlorhexidine (SAVLON) TM. The chemotherapeutic agents were Albendazole in doses of 10 mg /kg. body wt. twice daily for 28 days for 3 -4 cycles with an interval of 14 days in between the cycles. All the patients were monitored for liver dysfunctions and granulocytopenias. So, for symptomatic hydatid cyst of liver, open surgical method is the best modality of management. And in this study out of 30 patients 29 recovered well and due to associated comorbidities 1 patient was not operated, who was managed conservatively.

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