

Surgical Management of Abdominal Hydatid Disease in Adults in Tertiary Care Hospital: A Prospective Observational StudyAijaz Ahmad¹, Zahoor Ahmad Naikoo², Raja Nahid Ali Khan³^{1,2,3}Senior Resident, Department of General Surgery, GMC, Srinagar

Received: 25-05-2024 / Revised: 23-06-2024 / Accepted: 26-07-2024

Corresponding Author: Dr. Raja Nahid Ali Khan

Conflict of interest: Nil

Abstract:

Background: Treatment of hydatid cyst typically involves a combination of medical, radiological and surgical approaches. Surgery is the primary and gold standard for hydatid disease. Surgical techniques for hydatid disease are conservative and radical. Radical procedures are open cystectomy, near total open cystectomy, subadventitial cystectomy, non-anatomical liver resection, anatomic liver resection, cystectopericystectomy & total cystopericystectomy; additional procedures are lobectomy & cholecystectomy.

Methods: This was a prospective observational study conducted in the postgraduate department of general surgery at SMHS hospital, Gmc Srinagar J&K India over period of 18 months. The study included 25 patients who met the specified inclusion & exclusion criteria. Ethical clearance was obtained from the institutional ethical committee prior to commencing the study. Once diagnosed, patients were counselled on further management and treatment options available at the hospital.

Results: The mean age in our study was 32.1±11.50 with range of 18-65 years. the most common age group involved in this disease was 18-35years (72%), followed by 35-50 years(24%) and >50 years had 4%. in our study most of patients were females 15 cases (60%) and males 10 cases(40%). Male: Female ratio in our study was 1:1.5. Most common organ involved in our study, liver in 24 cases (96%) followed by spleen in 1 case (4%). In 24 cases (96%) single cyst were found and multiple cysts only in 1 case (4%) .Laparoscopic hydatid cystectomy (LHC) in 6 cases, Open hydatid cystectomy in 16 cases, open hydatid cystectomy with left lateral segmentectomy in 2 cases and open splenectomy in 1 case (4%) was done. External tube drainage for management of residual cavity was done in 11 cases (68.7%) followed by omentopexy in 2 cases (12.5%) capitonage in 1 cases (16.2%) and primary repair of CBC with omentopexy. Wound infection was seen in 2 cases, prolonged drainage in 1 case, CBC in 1 case, and recurrence in 1 case.

Conclusion: The surgical approach may vary depending on factors such as cyst location, size, presence of multiple cysts and cystobiliary communication (CBC).Hydatid cystectomy with external tube drainage is commonly used technique that offers effective management with less complication.

Keywords: CBC, LHC, Hydatid Cystectomy.

This is an Open Access article that uses a funding model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.

Introduction

Hydatid disease also known as cystic echinococcosis (CE) is a parasitic infestation caused by the flatworm echinococcus granulosus. [1] Echinococcus granulosus is the most common cause of hydatid cyst. [2] There are three main morphological forms of echinococcus that are recognized clinically cystic echinococcosis (CE) caused by echinococcus granulosus, alveolar echinococcosis (AE) caused by echinococcus multilocularis and polycystic echinococcus (PE) caused by echinococcus vogeli or oligarthus. [3-8]

Symptoms of hydatid disease are largely dependent on the organ involved, size and location of the cyst. In hepatic hydatidosis common symptoms are abdominal pain, palpable mass, jaundice or asymptomatic.9 Various diagnostic investigations

are employed to diagnose hydatid liver disease ,these include ELISA,USG,CECT abdomen & pelvis, eosinophillia, [10] but computed tomography is most sensitive imaging modality for assessing the lesion and its complications like rupture and cystobiliary communications(CBC). [11]

Treatment of hydatid cyst typically involves a combination of medical, radiological and surgical approaches.12Surgery is the primary and gold standard for hydatid disease.13-14Surgical techniques for hydatid disease is conservative and radical. Radical procedures are open cystectomy, near total open cystectomy, subadventitial cystectomy, non-anatomical liver resection, anatomic liver resection, cystectopericystectomy &

total cystopericystectomy; additional procedures are lobectomy & cholecystectomy. [15] This study was conducted to evaluate the surgical management options of abdominal hydatid disease in adults and to determine short and long term treatment outcomes.

Methods

This was a prospective observational study conducted in the postgraduate department of general surgery at SMHS hospital, Gmc Srinagar J&K India over period of 18 months.

The study included 25 patients who met the specified inclusion & exclusion criteria. Ethical clearance was obtained from the institutional ethical committee prior to commencing the study.

All diagnosed cases of abdominal hydatid disease above 18 years were included. Patients with non-parasitic cysts, recurrent hydatidosis, and extra abdominal hydatid disease were excluded. In

addition to baseline investigations (CBC, LFT, KFT, Coagulogram, blood sugar, serum electrolytes, hydatid serology) patients underwent further testing including, USG abdomen & pelvis, CECT abdomen and MRCP (in indicated cases). Once diagnosed, patients were counselled on further management and treatment options available at the hospital. Patients were followed up for 6 months, follow up visits at 1 week, 10th day and 6 months.

Data Analysis: Statistical analysis of the data was carried out with the help of SPSS software version SPSS 20.0. $P < 0.05$ was considered significant.

Results

The mean age in our study was 32.1 ± 11.50 with range of 18-65 years. The most common age group involved in this disease was 18-35 years (72%), followed by 35-50 years (24%) and >50 years had 4% as shown in Table 1.

Table 1: Age distribution of study patients

Age(years)	Number	Percentage
18-35	18	72
35-50	6	24
>50	1	4
Total	25	100
Mean \pm SD(Range)= 32.1 ± 11.50 (18-65)		

In our study most of patients were females 15 cases (60%) and males 10 cases (40%). Male: Female ratio in our study was 1:1.5 as shown in Table 2.

Table 2: Gender distribution of study patients

Gender	Number	Percentage
Male	10	40
Female	15	60
Total	25	100
Male: Female=1:1.5		

Most common organ involved in our study, liver in 24 cases (96%) followed by spleen in 1 case (4%) as shown in Table 3.

Table 3: Incidence of hydatid cysts in different sites

Sites	Number	Percentage
Liver	24	96
Spleen	1	4
Total	25	100

In 24 cases (96%) single cyst were found, multiple cysts only in 1 case (4%) shown in table 4.

Table 4: Distribution as per number of hydatid cysts

Number of hydatid cysts	Number	Percentage
Single	24	96
Multiple	1	4
Total	25	100

Laparoscopic hydatid cystectomy in 6 cases, Open hydatid cystectomy in 16 cases, open hydatid cystectomy with left lateral segmentectomy in 2 cases and open splenectomy in 1 case (4%) was done as shown in table 5

Table 5: Distribution as per type of surgical procedure

Site	Surgical Procedure	Number	Percentage
Liver	Laparoscopic hydatid cystectomy	6	24
	Open hydatid cystectomy	16	64
	Open hydatid cystectomy with left lateral segmentectomy	2	8
Spleen	Open splenectomy	1	4
	Total	25	100

External tube drainage for management of residual cavity was done in 11 cases (68.7%) followed by omentopexy in 2 cases (12.5%) capitonnage in 1 cases (16.2%) and primary repair of CBC with omentopexy as shown in Table 6.

Table 6: Residual cyst management

Residual cyst management	Number	Percentage
External tube drainage	11	68.7
omentopexy	2	12.5
capitonnage	1	16.2
Primary repair of cystobiliary communication(CBC) with omentopexy	2	12.5
	16	100

Wound infection was seen in 2 cases, prolonged drainage in 1 case, CBC in 1 case, and recurrence in 1 case as shown in table 7.

Table 7: Post-operative complications

Post-operative complication	Number	Percentage
Wound infection	2	8
Prolonged drainage	1	4
Cystobiliary communication	1	4
Recurrence	1	4
No complication	20	80
Total	25	100

Discussion

The mean age in our study was 32.1±11.50 with range of 18-65 years. the most common age group involved in this disease was 18-35years (72%), followed by 35-50 years (24%) and >50 years had 4%. in our study most of patients were females 15 cases (60%) and males 10 cases(40%). Male: Female ratio in our study was 1:1.5.This was in accordance with the study conducted by Venukumar (2017) [15] in which most common age group affected was 25-29 years (50%) followed by 35-39 years (46.7%) and males constituted 46.7% and females 53.3%.

This signifies that hydatid disease distribution is seen in all age groups Female predominance in our study could be explained by their involvement in agricultural and cattle rearing activities. Most common organ involved in our study, liver in 24 cases (96%) followed by spleen in 1 case (4%). Baran et al (1995) [16] conducted a study in which liver was common organ involved 65% followed by lungs 15%, spleen 2%, Omentum was rarely involved. In 24 cases (96%) single cyst were found and multiple cysts only in 1 case (4%) Venukumar R (2017) [15] revealed 93% had single cyst and 7% multiple cyst. Laparoscopic hydatid cystectomy in 6 cases, Open hydatid cystectomy in 16 cases, open hydatid cystectomy with left lateral segmentectomy in 2 cases and open splenectomy in 1 case (4%) was done. External tube drainage for management

of residual cavity was done in 11 cases (68.7%) followed by omentopexy in 2 cases (12.5%) capitonnage in 1 cases (16.2%) and primary repair of CBC with omentopexy.

Study by Ahmet (1999) et al [17] shows 40% underwent external drainage and 13.2% underwent omentopexy. On comparison we found that management of residual cavity with external tube drainage was common procedure adopted to deal with pathology. Wound infection was seen in 2 cases, prolonged drainage in 1 case, CBC in 1 case, and recurrence in 1 case, xynos et al [18] where wound infection was seen in 20% cases.

Conclusion

The surgical approach may vary depending on factors such as cyst location, size, presence of multiple cysts and cystobiliary communication. Hydatid cystectomy with external tube drainage is commonly used technique that offers effective management with fewer complications.

References

1. Barnes SA, Lilliemoe KD. Liver abscess and hydatid cyst disease In: Zinner Mj-Schwartz S.I-Ellis it Maingots abd. Operation 10th edition, Stanford ,Appleton and large.1997;1513-46
2. Aksu MF, Budak E, Ince U, Aksu C. Hydatid cyst of the ovary. Arch Gynecol Obstet. 1997; 261(1):51-3.

3. Mc Manus OP, Zhang W, Li J, Bartley PB. Echinococcosis Lancet 2003; 362: 1295-304.
4. Ci-Peny J, MCmanus PD, Malcom J. Liver alveolar echinococcosis in China. Clinical aspect with relative basic research. World J Gastroenterol 2005; 11 :4611-17
5. Raether W, Hanel H. Epidemiology, Clinical manifestations and diagnosis of zoonotic cestode infection; an update Parasitol. Res 2003; 91: 412-438
6. Thompson RC, Lymbery AJ, Constantine cc. Variations in echinococcus: towards a taxonomic revision of genus. Adv Parasitol 1995; 145-76
7. Khuroo MS. Hydatid disease: current status and recent advances Ann Saudi Med 2002; 22: 56-64
8. Xiao N, Qiu J, Nakao M, et al. Echinococcosis Shiquicus M. Sp A taenid cestode from Tibetan fox and plateau Pika in china. Int J.Parasitol. 2005; 35: 693-701
9. Nait Silmane N, Taieb M, Khiali R, Rabehi H, Bekhouche R and Bendjaballah. A huge primary hydatid cyst of uterus: A case report. Journal of universal Surgery 2018; vol.6, No.2: 2254-55
10. Sehitogullari A. Our results in surgical treatment in hydatid cysts of lungs. Eur J Gen Med 2007 ;4(1)
11. Anyfantakis D, Bievrakis E, Viachakisi. Hepatopulmonary hydatidosis in a ten year old girl: A case report. J Med Case Rep 2010; 4 : 200
12. Romero Torres R, Campbell JR. An interpretive review of the surgical treatment of hydatid disease. Surg Gynecol Obstet. 1965; 121 : 851-64
13. Men S, Hekimoglu B, YucesoyC, Arda IS, Baran L. Percutaneous treatment of hepatic hydatid cysts : An alternative to surgery, Am J Roentgenol. 1999; 172: 83-89
14. Bickel A, Daud G, Urbach D, Laparoscopic approach to Hydatid liver cyst: is it logical? Physical experimental and practical aspects. Surg. Endosc. 1998; 12:1073-74.
15. Gharaibeh KIA. Laparoscopic excision of splenic hydatid cyst. Postgrad Med J 2001; 77: 195-196.
16. Venukumar R. Clinical presentation of hydatid cyst of liver: descriptive study. Int Surg J.2017 Jan; 4(1): 214-16
17. Kir A, Baran E: Simultaneous operation for hydatid cyst of right lung and liver. Thorac Cardiovasc Surgeon. 1995, 43: 62-64. 10.1055/s- 2007-1013772
18. Ahmet A Balik, MD; Mahmut Basoglu MD; Fehmi Celebi et al.Surgical treatment of Hydatid disease of Liver. ARCH SURG/ vol.134, Feb1999.
19. Xynos E, Pechilvanides G, Tzortzinis A, Pappageorgiou A, Vassilakis J. Hydatid disease of liver. Diagnosis and Surgical treatment. HPB Surgery. 1991; 4(1): 59-67.