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Laparoscopic Management of Hepatic Hydatid Cyst: A Case Report

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Abstract
Hydatid disease is quite prevalent in India; common in most of the states, of which Andhra Pradesh and Tamil Nadu predominate. Hydatid disease is mainly caused by infection of the tapeworm Echinococcus granulosus. We present a rare case of left & right hepatic hydatid cyst with transdiaphragmatic communication into the right pleural cavity along with communication with large cyst cavity below the anterior abdominal wall extending till the urinary bladder at infra-umblical region & a separate cyst at the splenic hilum. The anatomic location of the lesions are more important than any other peculiarity when laparoscopic management is used. The aim of this report is to discuss the effects and feasibility of laparoscopic treatment of left & right hepatic hydatid cyst. The procedure is feasible and safe, offering all the advantages of laparoscopic surgery.
Keyword: *Laparoscopy, Liver, Spleen, Hydatid Cyst.*

Introduction

There are two species predominantly affecting the human population; *Echinococcus granulosus* and *Echinococcus multilocularis* causing Cysti Echinococcosis (Hydatid disease) and Alveolar Echinococcosis, respectively. The other two species found very rarely in humans are *Echinococcus vogeli* and *Echinococcus oligarthrus*. Hydatid disease is quite prevalent in India [1,2]. Cystic hydatid disease usually affects the liver (50–70%) and less frequently the lung, the spleen, the kidney, the bones, and the brain [3-5]. Infection of the cyst can facilitate the development of liver abscesses and mechanical local complications.

The main stay of treatment involves surgeries such as encapsulation, cystectomy, evacuation, marsupialization, etc. but involve a significant morbidity. Recently successful attempts have been reported for the management of Hydatid cyst of the liver by laparoscopic methods[6]. The following case report illustrates the feasibility of this technique.The primary concern remains the possibility of cyst content spillage.

Case Presentation

A 36 year old male was presented to us with features of cholangitis.He has chief complaints of on/off pain in abdomen since 4 month which was generalized in nature, not associated with

vomiting or nausea. He had not any history of trauma, fever, cough, constipation, burning micturition, hematuria, loose stools, melana, per rectum bleed. He had not any history animal or pet contact. Abdominal examination revealed distention of abdomen, diffuse lump palpable in right hypochondrium. Laboratory investigation revealed hemoglobin 8.3 g/dl, Total leucocyte count: 9900, serum sodium: 128. Ultra sonography of abdomen and pelvis showed Multiple Hydatid cysts. Liver showed few collapsed cysts with internal air in Right lobe. A subhepatic cyst was noted along the inferior wall measuring 7×2.4cm. Another cyst was located right to the above mentioned cyst measuring 2.7×1.8 cm(Figure 1).Spleen showedcyst near the hilum region which was measuring 4.5× 3 cm 7 and another cyst was noted at upper pole measuring 4×3.6 cm.Cysts measuring3.4×2.8cm and 7.4×4 cm were noted just beneath the anterior wall at infra umbilical region.

Figure 1. Hydatid cyst of the liver on ultrasound examination. Note the multiloculated appearance of the cyst. This multiseptated anechoic or hypoechoic appearance on sonography is typical of hydatid cyst.

High-resolution computed tomography (HRCT) of thorax with contrast revealed well defined rounded enhancing lesions with multiple septae within were noted in the middle lobe and basal segment of right lower lobe, presenting hydatid cyst; similar cyst were noted in liver, spleen and anterior abdominal wall. XRAY chest posterior anterior view revealed possible hydropneu-mothorax on right side with surgical emphysema on right chest wall.XRAY chest lateral view revealed raised bulging diaphragm the dome and right pleural fluid.

Pre-operative computed tomography (CT) scan of abdomen and pelvis showed multiple cysts of variable sizes ranging from mm to cm with internal septae are noted in sub-diaphragmatic perihepatic region, within right as well as left lobes of liver, inferior to gall bladder, spleen, superior to urinary bladder. Many of the cysts showed daughter cyst. None of the cysts show wall calcification. Multiple hydatid cyst in liver, spleen and peritoneal cavity. Lobulated hydatid cyst in the right sub-diaphragmatic region with internal separations and daughter cyst within with extension into right pleural cavity. Thus, concluding remark was multiple abdominal hydatid cysts.

Case Management

It was decided to manage this case laparoscopically because it does not respond to drugs orally or IV, and the patient was put on albendazole (10 mg/kg/day) for 14 days before surgery.We have chosen this way because multiple cysts were there.

Surgical approach was Laproscopic Trans-thorasic drainage of cyst cavity with drainage of abdominal cyst via umbilical port. Post-operative drains were kept in cyst cavity and ICD in chest and washes were given TDS with 3% Normal saline following which after one month open splenctomy was done along with cystectomy of splenic cyst with successful outcome.

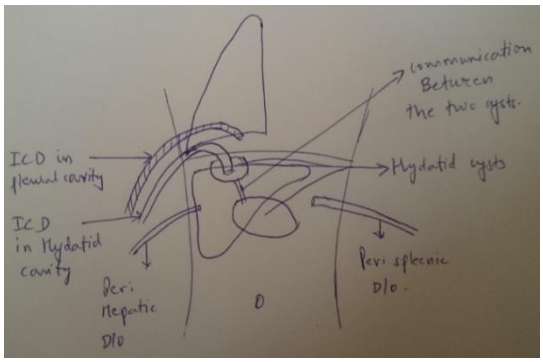

Figure 2. The diagram represents the overview of surgical treatment.

Laproscopic trans-thoracic drainage of cyst cavity with drainage of abdominal cyst via umbilical port.

At surgery patient was positioned in supine position, general anesthesia applied, head raised and left lateral tilt. Hand was extended over the head to expose the axilla on the right side.When incision was taken in mid axillary line below the 5th rib, through which 10 mm port was inserted.Right lung was visualized and it was normal. Visceral layer of the lung was normal, partial layer showed a hazy patch. A second 10mm port was inserted in the next rib space below the first port. Below the hazy parital layer, hydatid cavity was visualized and punctured laparoscopically (Figure-3), aspirated and drained.

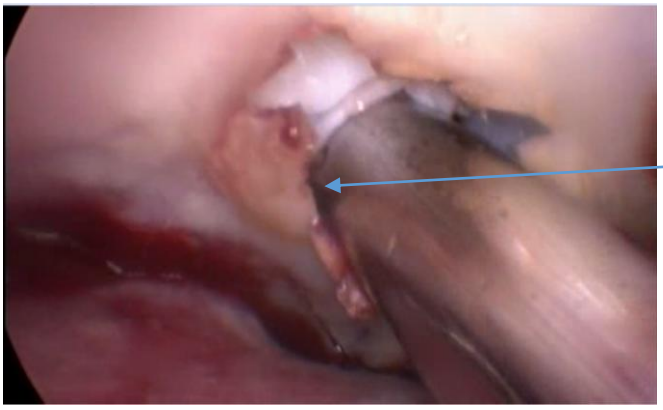

Figure-3

Figure-4

After it was no longer possible to drain via laparoscopic aspirated, a no. 32 drain was inserted into the cavity and suction was continued. 50 cc fluid was drained along with daughter cyst (Figure-4). Once cyst cavity was drained, One ICD was inserted in the right chest and the second one was inserted into the right chest cavity through diaphragm into the cyst cavity, and fixed with IFT going through it.Wash of cavity given by betadine and normal saline and drain fixed. Normal saline and betadine was used as scolicidal. In this case abdominal approach was also done as the large cyst cavity below the anterior abdominal wall extending till the urinary bladder at infra-umblical region & a seprate cyst at the splenic hilum.

Abdominal approach

10mm umbilical port was inserted and 5 mm port was also inserted lateral to it on the right side.A cyst cavity was visualized. Laparoscopic aspiration was done of the cyst along with daughter cysts and the cavity was examined which showed a communication with the hepatic cyst that was drained earlier. Washes were given with 3% N.S. and Betadine solution. Two drains were

put, one at right periheaptic region and left perisplenic region.

Post op ct scan abdomen & pelvis shows Post-operative residual cavity in segment VI and VII of right lobe of liver with fluid collection and few air foci within. Drain in situ in the cavity (Figure-5). Large cystic lesion visualized in previous CT appears collapsed with its wall still seen along anterior abdominal wall with drain seen in situ.Mild right pleural effusion.

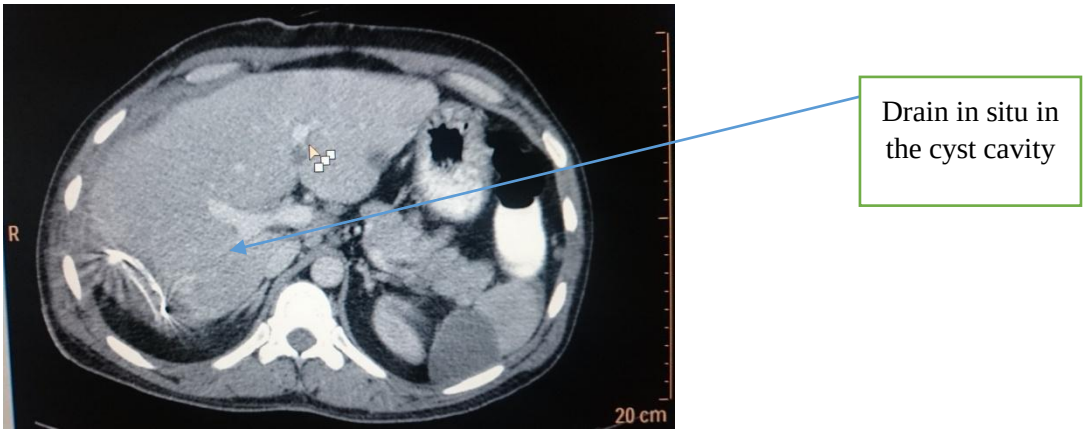

Figure-5

Patient recovered well postoperatively and was sent home at the third postoperative day. He was advised to do postoperative follow up, which showed no recurrence of the disease.

Discussion

All surgical treatments require complete cyst exposure, cyst decompression evacuation and sterilization, ligation of bile duct communications, and cavity management[7]. Open procedures can be classified into (1) conservative tissue sparing techniques that remove the parasite and leave the majority of the pericyst in place and (2) radical procedures that extricate the entire pericyst. Conservative techniques include partial cystoperi-cystectomy and near-total pericystectomy. Radical procedures such as cystopericystectomy, hepatic lobectomy, and hepatectomy have been used in the past. Currently, they are rarely used and are being replaced by cystotomy, partial cystectomy, and omentoplasty, which can all be done laparoscopically. Advantages of the laparoscopic procedures include less pain, good cosmetic results, rapid recovery, and decreased complications.

The chosen operative procedure depends on the location, size, type of cyst, and the surgeon's skills. Total pericystectomy is often avoided if the pericystic area is near major vascular or biliary structures because of a high risk of severe bleeding and bile duct injury. A total pericystectomy, however, is considered by some to be preferable due to its low risk of recurrence, lower risk of biliary leakage, reduced inflammatory complications, and increased rate of detection of daughter cysts[7-9]. The higher risk of total pericystectomy limits some surgeons to recommend this only for small peritoneal cysts or cyst on the exterior surface of the liver[10]. Another radical surgical procedure is hepatic resection, but it is accompanied by a high morbidity rate[7]. Liver resection is suggested when a complete lobe is involved or when other procedures have failed[10]. Casado et al. suggested radical resection for hepatic hydatid cyst has better outcomes than puncture-aspiration-injection-re-aspiration (PAIR) or partial resection regarding morbidity and mortality with almost no recurrence rate[11].

Seven et al. established that laparoscopy could be used to treat hepatic echinococcal cysts with morbidity and recurrence rates comparable to those observed in open series[12]. Laparoscopic treatments that have been described include

cystotomy, partial pericystectomy, and total pericystectomy[7,13]. Laparoscopic techniques are gaining popularity even though no fail-safe methodology has been devised to completely ensure the prevention of cyst spillage. A laparoscopic hand-assisted procedure has been suggested to prevent intra-abdominal spillage[14].

Conclusion

Surgery is the gold standard in the management of hydatid cyst liver and other sites as well [7]. Treatment is surgical, because it does not respond to drug administration. There is still controversy regarding the appropriate surgical technique[15]. In our case, multiple cyst were found and cyst content spillage in open surgery has higher probability and as well as we need to take a wide incision and increased morbidity. Laparoscopic offers a lower morbidity outcome and a shorter hospital stay.In addition to that advantage, Laparoscopic procedure gives a better visual control of the cyst cavity under magnification. Earlier reported case has described a single location of cyst but in our case it was at multiple sites. However, to avoid demerits of open surgery, we choose to perform lap surgery so that in a single seating, drain of multiple cyst can achieved as well as patient can recover faster with no major systematic infection and major blood lose.Beside this, we can reduce the chance of morbidity through lap surgery.

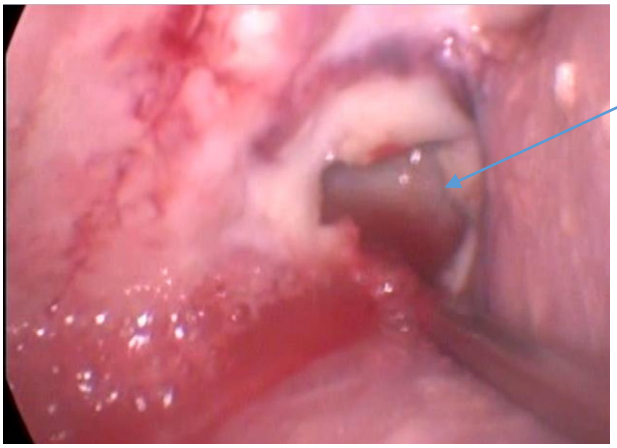

Figure-6 Abdominal approach

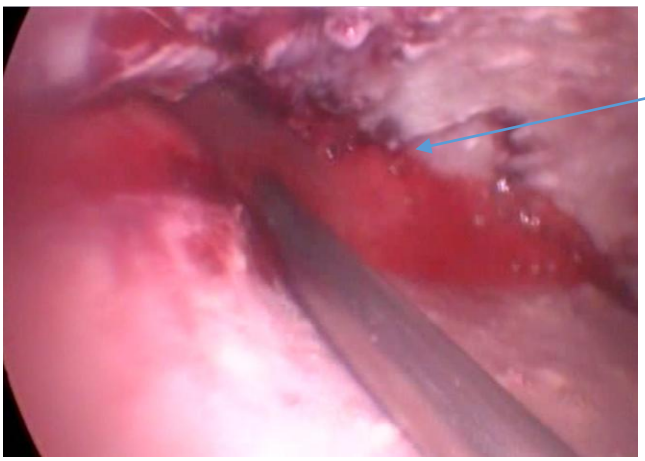

Figure-7

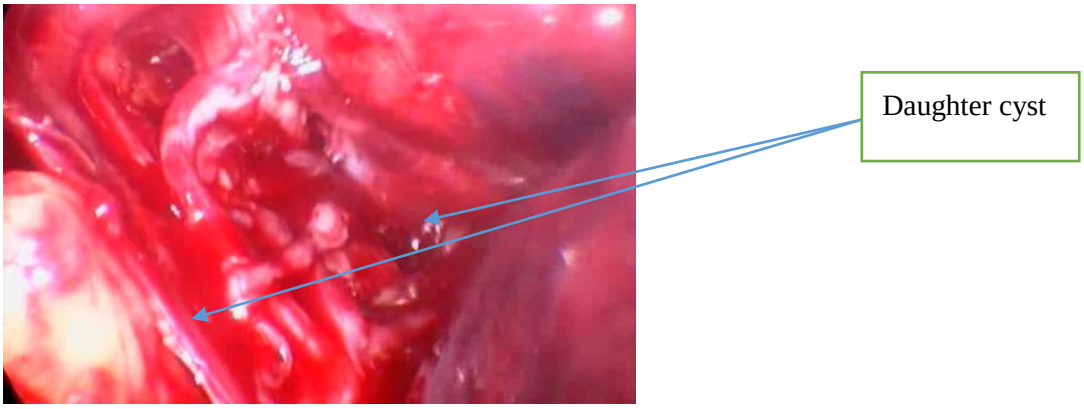

Figure-8

Consent-Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

References

1. Kayal A, Hussain A (2014) A comprehensive prospective clinical study of hydatid disease. ISRN Gastroenterol 2014: 514757.
2. Siddharth S Rao BM, Ravindra Narang (2012) The spectrum of hydatid disease in rural central India: An 11-year experience. Annals of Tropical Medicine & Public Health 5: 225-230.
3. Moro P, Schantz PM (2009) Echinococcosis: a review. Int J Infect Dis13:125-133.
4. Nunnari G, Pinzone MR, Gruttadauria S, Celesia BM, Madeddu G, et al. (2012) Hepatic echinococcosis: clinical and therapeutic aspects. World J Gastroenterol 18: 1448-1458.
5. Khanfar N (2004) Hydatid disease: a review and update. Current Anaesthesia & Critical Care 15: 173-183.
6. Ustunsoz B, Akhan O, Kamiloglu MA, Somuncu I, Ugurel MS, et al. (1999) Percutaneous treatment of hydatid cysts of the liver: long-term results. AJR Am J Roentgenol 172: 91-96.
7. Dervenis C, Delis S, Avgerinos C, Madariaga J, Milicevic M (2005) Changing concepts in the management of liver hydatid disease. J Gastrointest Surg 9: 869-877.
8. Cirenei A, Bertoldi I (2001) Evolution of surgery for liver hydatidosis from 1950 to today: analysis of a personal experience. World J Surg 25: 87-92.
9. Prousalidis J, Tzardinoglou E, Kosmidis C, Katsohis K, Aletras O (1999) Surgical management of calcified hydatid cysts of the liver. HPB Surg 11: 253-259.
10. Safioleas M, Misiakos E, Manti C, Katsikas D, Skalkeas G (1994) Diagnostic evaluation and surgical management of hydatid disease of the liver. World J Surg 18: 859-865.
11. Alonso Casado O, Moreno Gonzalez E, Loinaz Segurola C, Gimeno Calvo A, Gonzalez Pinto I, et al. (2001) Results of 22 years of experience in radical surgical treatment of hepatic hydatid cysts. Hepatogastroenterology 48: 235-243.
12. Seven R, Berber E, Mercan S, Eminoglu L, Budak D (2000) Laparoscopic treatment of hepatic hydatid cysts. Surgery 128: 36-40.
13. Ramachandran CS, Goel D, Arora V (2001) Laparoscopic surgery in hepatic hydatid cysts: a technical improvement. Surg Laparosc Endosc Percutan Tech 11: 14-18.
14. Bensaadi H, Champault G (2004) Laparoscopic hand-assisted surgery for hydatid cysts of the liver. Surg Laparosc Endosc Percutan Tech 14: 91-92.

15. Skroubis G, Vagianos C, Polydorou A, Tzoracoleftherakis E, Androulakis J (2002) Significance of bile leaks complicating conservative surgery for liver hydatidosis. World J Surg 26: 704-708.