Case Report

DOI: http://dx.doi.org/10.18203/2349-2902.isj20170239

Giant hepatic hydatid cyst: one: in difficult hepatic segments VIII and the other: in segment VI

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Received: 05 December 2016 **Accepted:** 02 January 2017

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ABSTRACT

Study present 02 cases of large hepatic hydatid cysts which were very challenging in their management due to their site, the approach taken during surgery and the close proximity to very vital structures. Hydatid cyst as a disease has remained a considerable potential of upsurge and re-emergence in humans. These patients presented with right upper abdominal pain for a prolonged duration. They were diagnosed as hepatic hydatid cysts after investigations. They underwent subtotal cystectomy with omentoplasty with excellent result without any recurrence and a high level of patient satisfaction.

Keywords: Computed Tomography, Echinococcus granulosus, Hydatid cyst, Sonography

INTRODUCTION

Hepatic hydatidosis (HH) is a zoonosis produced by *Echinococcus Granulosus* in most cases, it is endemic mainly in the Mediterranean countries (particularly Greece), the Middle East, the Baltic areas, South America, India, northern China, and other sheep-raising areas; however, owing to increased travel and tourism all over the world, it can be found anywhere, even in developed countries.¹

In India, hydatid disease is common in most of the states of which Andhra Pradesh and Tamil Nadu predominate. The liver is the most common site for hydatid disease (75% of cases), followed by lungs (15%), spleen (5%), and other organs (5%).²

As far as treatment options are concerned as per World Health Organization's guide and our group's experience, surgery is the most effective treatment for Hepatic Hydatid.³ There is a wide range of surgical techniques for

the treatment of hepatic hydatid cysts, from radical surgery (pericystectomy or regulated hepatic resections) to more conservative techniques (subtotal cystectomy with or without epiploplasty; subtotal cystectomy plus capitonnage, cystostomy plus epiploplasty/omentoplasty, among others). Some reports show that omentoplasty or epiploplasty decreases the incidence of abdominal abscess after surgical treatment. The surgical technique preferred by our surgical team is subtotal cystectomy, with omentoplasty.

The objective of this study was to bring forward two cases of giant hepatic hydatid cyst in segment 6 and 8 of the liver which were operated in 2014 and 2016 in our hospital with similar presentation. Cysts larger than 10 cm is termed giant cysts. Large hydatid cyst of the liver in segments VIII and VI are a surgical challenge!

The surgical treatment was exciting but nevertheless difficult due to the site, its approach and presence of very vital structures in close vicinity of the cyst. The results were excellent with high level of patient's satisfaction and without any recurrence.

CASE REPORT

The patients diagnosed as hepatic hydatid cysts were in the age group 35 to 40 years in our case report. They had almost similar presentation of intermittent pain in the right upper abdomen, with low grade fever for about 2 years prior to admission. No other symptoms, such as nausea, vomiting, diarrhea or skin rash were noted. They were evaluated in the OPD and were found to have low grade temperature with mild right upper abdominal tenderness. There was evidence of liver enlargement on vertical span. Systemic examination was unremarkable. On hematological evaluation, white blood cell count was 8,500/mm³, with 65% neutrophils and 3.6% eosinophils. Urine and stool analyses were unremarkable. Biochemical tests for alkaline phosphatase, gammaglutamyl transferase, aspartate aminotransferase, and bilirubin were within normal limits, but alanine aminotransferase was increased to 50 U/L. Tests for Antihepatitis C virus antibody, hepatitis B surface antigen (HBsAg), and anti-HBsAg antibody were negative. Plain chest X-ray examination showed no abnormal findings. Due to the abnormal liver function test and right upper abdominal pain, abdominal sonography was performed. A cystic mass in the right lobe of the liver was revealed in segment VIII and VI.



Figure 1: CECT chest and abdomen shows 'Giant' hydatid cyst in segment VIII of liver.

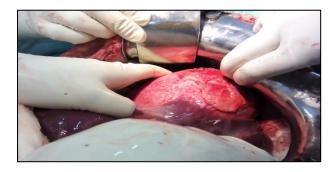


Figure 2: 'Giant' hydatid cyst in segment VIII of liver, as seen after mobilization of liver and application of Rochard's Costal Arch retractors.



Figure 3: 'Giant' hydatid cyst seen occupying segment VI of Liver.



Figure 4: 'Giant' hydatid cyst in segment VIII of liver, well cordoned off with hypertonic saline (20%) soaked swabs. After de-roofing the cyst, the daughter cysts are removed manually.



Figure 5: 'Giant' hydatid cyst in segment VI of Liver is cordoned off by hypertonic saline (20%) soaked swabs, de-roofed and contents removed by sponge holding forceps.

The mass measured around 10-15 cm in transverse diameter. Some echogenic material was seen in the center of the mass which were confirmed in pre- and post-intravenous contrast-enhanced dynamic enhanced CT scan of the upper abdomen demonstrated a well-defined non-enhanced mass measuring 15 cm in diameter in segments VIII and 10 cm in segment VI of the liver (maximum diameter). Both sonography and CT showed

daughter vesicles at the periphery of the lesion. On the basis of the imaging findings and the patient's history, a diagnosis of hydatid cyst of the liver was made. Ultrasonographic guided biopsy was not performed because of a fear of anaphylactic shock induced by leakage of the cystic content, and a spillage of the contents into the peritoneal cavity would have 'metastasized' the parasitic lesion all over the abdominal cavity, making a containable and a treatable condition hopelessly incurable! ELISA for hydatid disease was negative. Because there was only a single lesion in the liver in both the cases, a decision was made to perform a subtotal cystectomy with omentoplasty.

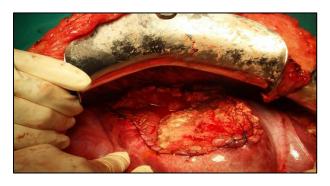


Figure 6: Giant' hydatid cyst in segment VIII of Liver is partially excised off with harmonic scalpel and edges 'hemmed' with haemostatic continuous interlocking vicryl sutures.



Figure 7: Cyst cavity in segment VIII of liver packed with 'live' tongue of omentum as 'cysto-omentoplasy'.



Figure 8: The contents of the hydatid cyst liver- 'The daughter cysts' as seen in the specimen tray in the pathology department.

Patient supine under GA draped and prepared. Incisionextended Rt sub costal given. Liver mobilized, Rochard's Costal-arch retractors applied and Hydatid cyst in Segment VI and VIII was brought down after careful dissecting it off from the right Cupola of the diaphragm. Retro hepatic hypertonic saline (20%) soaked packs were placed. The lesion was totally cordoned off with hypertonic saline soaked swabs (20%). At this stage the Anesthesiologist was cautioned against three serious issues- retro hepatic packs inadvertently compressing the IVC causing sudden hypotension; highly antigenic leaking hydatid cyst contents triggering anaphylactic shock and Hypertonic Saline causing hypernatremia due to absorption of 20% hypertonic saline. Hydatid cyst was aspirated, culture and sensitivity sent. 20 ml of hypertonic saline 20% was injected, cruciate incision given on the dome of the cyst and contents evacuated with ovum forceps and manually. Cyst de-roofed with electrocautry and harmonic scalpel. Cyst cavity was soaked with hypertonic saline. "White test"- a milk white warm sponge is pressed into the cyst cavity to locate the "yellow" impression of bilio-cystic communication which was obliterated with Vicryl 2/0 sutures. Heamostasis of the bleeding edges of the cyst were controlled by running interlocking vicryl sutures. Cyst cavity drained on 32 Fr and another 32 Fr drain placed in supra hepatic area. A tongue of omentum developed and placed into the cyst cavity (cysto-omentoplasty) and tagged to the cyst cavity wall. Abdomen closed accordingly. Suprahepatic drain removed on 5th post op day. Cavity drain gradually reduced from 150 ml to 20 ml and the drain was removed. Sutures removed on 15th post-op day. Patient put on Long-term course of Tab Albendazole 400 mg BD for 06 weeks with a 1 week drug holiday for one year. Histopathologic study of the lesion confirmed the diagnosis. The patient recovered uneventfully and there were no postoperative complications except for wound pain, which was treated conservatively. The patient was discharged in good health 02 weeks later. Advised long term Albendazole course as above with quarterly follow up with LFT and USG Abdomen.

DISCUSSION

Hydatid disease is a parasitic tapeworm disease caused by the larval stage of *Echinococcus Granulosus* or *Echinococcus multilocularis*.³ The liver is the most frequently involved organ in both forms, followed in frequency by the lung.⁴ However, these two species of *Echinococcus* are quite different, with different endemic regions and clinical manifestations. E. granulosus tends to produce a typical large, single, round or ovoid, well-defined Hydatid cyst and is the more prevalent species.⁵ It is most common in sheep- and cattle-raising areas, such as Central Europe, Africa, South America, New Zealand, Australia, Central Asia, and China. In contrast to E. granulosus, E. multilocularis is restricted mainly to cold and high-altitude regions, with a higher prevalence in Alaska, Canada, Central Western Europe, Siberia, and

Japan. It causes an irregular, small, fluid-filled cavity or an invasive spongy mass resembling an infiltrating malignant hepatic tumor, rather than a well-defined expansile cyst. It can manifest as a calcified mass that occupied the right hepatic lobe with extension to the left hepatic lobe. It can invade the diaphragm, right adrenal gland, inferior vena cava, and right portal vein. The present cases were diagnosed as a hepatic Hydatid cyst by imaging before de-roofing of the lesion. The liver lesion was a unilocular, ovoid, well-walled marginated cystic lesion, compatible with those developed due to E. granulosus infection of the liver. Hydatid cysts of the liver grow to 1 cm during the first 6 months and 2-3 cm annually thereafter, depending on host tissue resistance. This suggests that this patient may have been infected in India about 2-3 years prior to presentation. The clinical symptoms of hepatic hydatidosis are highly variable and diverse.6 Uncomplicated hydatid cysts of the liver may remain asymptomatic for years or even decades, depending on the size and site of the developing cyst.³ In cases of uncomplicated hydatid cyst, pain in the right upper quadrant is the most important diagnostic symptom for the disease and hepatomegaly was the major sign in hepatic hydatidosis.⁵ Other symptoms of Hydatid disease of the liver include nausea, dyspnea, and dysphagia. Jaundice may occur, depending on the local mass effect of a gradually enlarging cyst or the rupture of a Hydatid cyst into the biliary tree. Fever with chills and severe anaphylactic shock are usually absent unless cysts become secondarily infected or rupture.4 We do not consider that the fever in our case resulted from infected or ruptured hydatid cyst because sonography, CT, and pathologic study did not show dilatation of biliary trees, air bubbles, increased blood flow, or ring enhancement. Eosinophilia (> 3%) may or may not be present, and has been cited as a diagnostic criterion.⁵ It is an inconsistent sign in cases with uncomplicated hydatid cysts, but may be helpful in cases with complicated cyst. Alkaline phosphatase is elevated in proportion to the volume of the cyst, and is constantly elevated in all complicated cases. We consider our patients as uncomplicated cases.

There is no single serologic test that definitively establishes the diagnosis before imaging and surgery thus serologic studies were not performed in our case because the findings on sonography and CT images were indicative of a Hydatid cyst.⁷

The hydatid cyst in the present cases can be classified as Lewall Type II. CT is an accurate means of diagnosis for hepatic hydatid disease, and is especially helpful with sonography. Aggressive surgical intervention, concomitant with oral Mebendazole or Albendazole, before and after surgery for uncomplicated Hydatid liver cysts, is still preferred in the treatment of this disease, and advocated at AIIMS, New Delhi, India.

CONCLUSION

The cases presented here were very challenging due to the site, its approach and presence of very vital structures in close vicinity of the cyst.

Funding: No funding sources Conflict of interest: None declared Ethical approval: The study was approved by the institutional ethics committee

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Cite this article as: Ray MS, Deepak BS. Giant hepatic hydatid cyst: one: in difficult hepatic segments VIII and the other: in segment VI. Int Surg J 2017:4:809-12.