



ORIGINAL RESEARCH PAPER

Surgery

OPEN AND/OR LAPAROSCOPIC SURGICAL TREATMENT OF LIVER HYDATID CYSTS

KEY WORDS: Open Surgery - Liver Hydatid Cyst - Video-assisted Laparoscopy – Albendazole

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ABSTRACT

Hydatid disease is a severe parasitic disease with a widely ranging distribution. In the human being the liver is the most frequent organ affected.¹ The treatment should be individualized to the morphology, size, number and location of the cysts, that is why a variety of surgical operations have been advocated from complete resection like total pericystectomy or partial hepatectomy to laparoscopy to a minimally invasive procedures like percutaneous aspiration of cysts to conservative drug therapy.³⁻⁴ This study compares laparoscopic versus open management of the hydatid cyst of liver the surgical approach to liver echinococcosis is still a controversial issue and shows our results of surgical treatment of liver hydatid cysts during a 3-years period.

INTRODUCTION

Hydatid cyst is a zoonotic disease with a worldwide distribution. Most cases are caused by the cestode tapeworm *Echinococcus granulosus* that is found in the small bowel of carnivores. In this disease the human is intermediate host. The old standard approach in the treatment of liver cysts is open surgery; the principles and various techniques have been extensively reviewed, whoever laparoscopic surgical techniques to treat hydatid cysts of the liver have been gradually introduced.⁵⁻⁶ Reaspiration remains the option of choice whether it is open or laparoscopic safely performed.⁸ The open conservative surgical approach is the most accepted approach for recurrent giant cysts and on the same principles, the laparoscopic approach developed which based on the creation of an isolated hypobaric system, through which the cysts can be managed without spillage of their content, there were many studies was done to evaluate and combines the effectiveness of open surgery with the advantages of the laparoscopic approach with different techniques and theoretically solving the problems of access and preventing spillage of cyst content following controlled rupturing of cyst to get rid from acute setting of anaphylaxis during cyst control rupturing laparoscopically if spillage occur.⁷ As well as in open, surgery these studies was done in a specialized institutions for laparoscopic surgery.¹⁰⁻¹¹

AIMS AND OBJECTIVES

Surgical treatment of hepatic hydatid cyst is far better to be encoded and continues to be the subject of numerous medical contradictions. Given the very complex issues raised by hydatid disease and therapeutic controversies that exist, we have proposed methods obtained for a comparison between radical and conservative surgical therapy for hepatic hydatid cyst to deduct such classic surgical indications and treatment outcomes. We also analyzed the results of laparoscopic surgery in hydatid cyst as a modern method of treatment and finally we discussed the issue of biliary fistula, postoperative complication of both classical and modern procedures of treatment.

METHODS

A prospective and a retrospective study of 152 patients operated on in a 3-year period (2014-2017) with hepatic Hydatid cysts. In which 103 patients (67.76%) of the cases were female and 49 patients (32.24%) of cases were male , Patients were evaluated with ultrasonography and computed tomography scan to determine the extent of the disease and preoperative staging. Only the following aspects were considered as selection criteria for laparoscopic surgery: liver cyst not located in segment 1 or 7, with corticulation on the surface and no evidence of intrabiliary rupture. Patients were divided into two groups according to the type of surgery. Group - I consisted of 74 patients (48.7%) whose treatment was done by laparoscopic surgery in this group total pericystectomy without opening the cyst cavity was performed by laparoscopic surgery, while Group - II included 78 patients (51.3%) who had undergone conventional open surgery.

Because both cystectomy and pericystectomy operations were performed for some cysts in multiple locations, one case was with calcified cysts and was excluded from our study. All patients were pre-operatively treated with albendazole (10 mg/kg/day) for 15 days .

RESULTS

There was no mortality after 5 to 6 months follow-up, but in 2 patient, in the open group, recurrence of the disease occurred after 2 to 3 years. When a laparoscopic procedure was done, there were less complications and no recurrence. There were 2 cases of anaphylactic reaction.

Conversion to open surgery occurred in three cases (5,26 %). The mean cyst diameter was 6.62 cm (range, 2–15 cm) in group 1 and 7.23 cm (range, 2–18 cm) in group 2 (p = 0.549). The mean operative time was 72 min (range, 45–140 min) in group 1 and 65 min (range, 35–120 min) in group 2 (p \ 0.001). The general complication rate and abdominal wound complication rate were

respectively 0 % and 0 % in group 1 ($p = 0.0151$) compared with 5.23 and 8.72 % in group 2 ($p = 0.009$). The mean hospital stay was 6.42 days (range, 1–21 days) in group 1 and 11.7 days (range, 4–80 days) in group 2 ($p \leq 0.001$). The mean follow-up period was 24.2 months (range, 6–32 months) in group 1 and 28.4 months (range, 6–40 months) in group 2. ($p \leq 0.001$).

CONCLUSION

Total pericystectomy without opening the cyst cavity, preceded by preoperative albendazole therapy is the method of choice for hepatic hydatid cysts treatment. Our results show laparoscopic total pericystectomy, without opening the cyst cavity, in the treatment of hepatic hydatid cyst is an optimal treatment because. The laparoscopic technique is an easy to apply, safe, and effective method to conduct liver hydatid cyst surgery. This technique can be used in patients with unique, small sized, superficially located cysts, and also has the advantages with the use of special maneuvers to decrease spillage and recurrence.

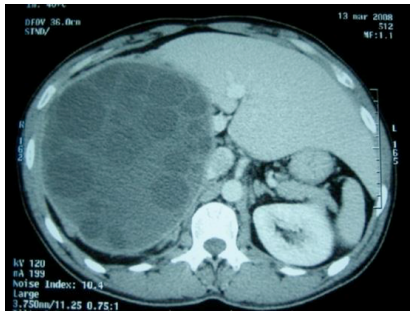


Figure 1 CT scan showing typical type III cyst in right lobe of liver.



Figure 2 Pericystectomy with omentoplasty



Figure 3 Hydatid membranes delivered

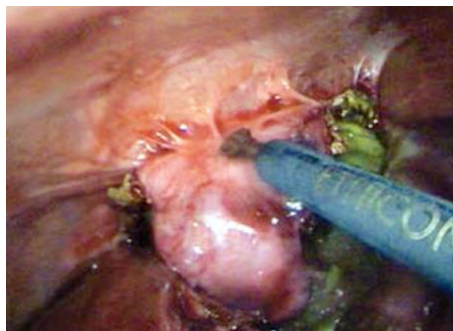


Figure 4 Deroofing of the cyst using harmonic hook



Figure 5 Ports position



Figure 6 Cyst in the segment V

References

1. Khoury G, Abiad F, Geagea T, Nabout G, Jabbour S. Laparoscopic treatment of hydatid cysts of the liver and spleen. Division of General Surgery, American University of Beirut Medical Center, Post Office Box 113-6044, Beirut, Lebanon.
2. Controversies in the laparoscopic treatment of hepatic hydatid disease HPB (Oxford). Department of Surgery, Istanbul Medical Faculty, Istanbul University, Istanbul, Turkey 2004 and 21., 6(4):213-.
3. Eduardo M, Targarona, Ester Gracia, Manuel Rodriguez, Gemma Cerd n, Carmen alagu , Jordi Garriga, Manuel Trias, Hand- Assisted Laparoscopic Surgery. Arch Surg 2003 and 138:133-41.
4. Berberog'lu M, Taner S, Dilek ON, Dilek A, Demir S. Gasless vs gaseous laparoscopy in the treatment of hepatic hydatid disease.
5. Huizinga WKJ, Grant CS, Daar AS. Hydatid disease. In: Morris PJ, Wood WC, eds. Oxford Textbook of Surgery.
6. Amitai Bickel, Norman Loberant, Jonathan Singer-Jordan, Moshe Goldfeld, George Daud, Arie Eitan. The Laparoscopic Approach to Abdominal Hydatid Cysts A Prospective Nonselective Study Using the Isolated Hypobaric Technique. Arch Surg 2001 and 789-95., 136:.
7. Milicevic M. Hydatid disease. In: Blumgart LH, ed. Surgery of the Liver and Biliary Tract. London, England: Churchill Livingstone 1994:121-50.
8. Langer JC, Rose DB, Keystone JS, Taylor BR, Langer B. Diagnosis and management of hydatid disease of the liver: A 15-year North American experience. Ann Surg 1984 and 17., 199:412-.
9. Katkhouda N, Fabiani P, Benizir E, Mouiel J. Laser resection of a liver hydatid cyst under videolaparoscopy. Br J Surg 1992 and 560-61., 79:.
10. Metin Ertem, Tayfun Karahasanoglu, Nihat Yavuz, Sabri Erguney. Laparoscopically Treated Liver Hydatid Cysts. Arch Surg 2002 and 13, 137:1170-73.1195-98.
11. Rkia A, Allal D (2006) Epidemiological study of the cystic echinococcosis in Morocco. Vet Parasitol 137:83–93.