Spleen-sparing surgical treatment for hydatidosis of the spleen

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Abstract

To present the surgical therapeutic aspects of splenic preservation in hydatid cysts of the spleen between January 2000 and December 2003. 15 patients with clinically and sonographically highly suspected splenic hydatid cysts were treated in Al- Jamhoory teaching hospital and Al-Zahrawi private hospital in Mosul city by cyst enucleation and drainage preserving their spleens. There were 8 women and 7 men. The average cyst diameter was 8 cm (4- 25 cm). In 9 patients (60%) the spleen was only involved while in 6 patients (40%) the liver was involved too. In 3 patients (20%), cysts were secondarily infected and in 2 patients(13%), the cysts were complex and contained numerous daughter cysts .There was only one postoperative patient (6.6%) with a recurrence 14 months post surgery requiring re-operation. Splenic preservation in hydatid cyst of the spleen is a technically feasible, simple and efficacious therapy without significant post operative complications or recurrence.

Key words: Hydatid cyst, spleen, preservation

Introduction

Hydatid disease has been recognized since ancient times as it was described in the works of Hippocrates in the 4th century AD, Arataeus and Galen in the 1st and 2nd centuries AD respectively. Berlot in 1790 is accredited with the first description of a splenic hydatid cyst as an autopsy finding [1].Hydatid cyst is the only parasitic cyst of the spleen and it is said to be twice as common as the non-parasitic variety representing two thirds or more of all splenic cysts [2]. Splenic involvement in hydatid disease is uncommon even in endemic countries in the Mediterranean or Near East areas (0.5-4 percent of all cases of echinococcosis) [3, 4].

Spleen is affected either through systemic dissemination or from a rupture of hepatic cysts to peritoneal cavity [5,6]. It is the third most commonly involved organ after liver (70%) and lungs (15-20%) [7]. until recently, splenectomy has been recommended as the gold standered conventional treatment, since 1980 there has been a trend towards splenic conservation to avoid overwhelming post splenectomy infection (OPSI). It is unclear whether preservation of the spleen can be done without a risk of recurrence or complication [8, 9].

The aim of this study is to present splenic preservation as a therapeutic modality in hydatid cysts of the spleen in our locality.

Patients and Methods

Fifteen patients with hydatid cysts of the spleen were treated in Al-Jamhoori teaching hospital and Al- Zahrawi private hospital in Mosul city between January 2000 and December 2003. All patients were clinically and ultrasonographically evaluated together with chest x rays. Neither serological tests nor was CT or MRI done. Albendazole 400 mg b.d for 4 weeks preoperatively was used in 2 patients in whom cyst diameter had exceeded 8 and12 cm respectively. All patients underwent abdominal exploration via midline or left upper paramedian incisions.

Our method constituted identification of splenic cysts, packs soaked with a diluted chlorhexidine gluconate solution (0.05%) inserted around the cysts and the lowest pole of the cyst was punctured, aspirated, re- injected with chlorhexidine solution and after 5-10 minutes re- aspirated again. The adventitia (ectocyst) was incised and endocyst enucleated. The cut edge of the cavity left was deroofed and marcupualized by continuous suturing by 00 chromic catgut suture and tube drain put in the cavity of

removed cyst. All patients received parenteral broad spectrum antibiotics postoperatively and three cycles of albendazole 10mg/kg for 1 month. Follow up was done for all patients for 36 months .After discharge and complete convalescence, patients were evaluated in the out patient clinic every 6 months for the 1st year and yearly thereafter .Evaluation included physical examination and abdominal ultrasound examinations.

Results

There were 8 female and 7 male patients with a mean age 39 years and age ranged (15-60 years).The main complaints included painless lump in the left upper abdomen in 4 patients (26%), upper abdominal heaviness and discomfort in 6 patients(40%) and dyspeptic symptoms(nausea and vomiting) in 5 patients(33%). Abdominal ultrasonography revealed hydatid cyst of splenic localization in 9 patients (60%) and concomitant splenic and hepatic hydatid cysts in 6 patients (40%) involving the right liver lobe. The sonographic range of cysts diameter was (4 – 25 cm). Intraoperatively, in 10 patients (66%) the splenic cysts were solitary, simple and unilocular (Figure 1) while in 3 patients (20%) the cysts were secondarily infected and in 2 patients (14%) the cysts were complex and contained numerous daughter cysts (Figure 2).

Of the 6 patients with concomitant hepatic hydatid cysts, 4 patients had their liver cysts enucleated and drained together with the treatment of splenic involvement while in 2 patients the hepatic cysts were calcified and untouched. No peri or postoperative deaths were encountered. Drains ceased drainage after 5-7 day and removed. There were neither bleeding nor septic complications following surgery. Only 1 patient developed left sided pleural effusion that was resolved on antibiotics.

The mean hospital stay was3.2 days ranged between 2- 5 days. In the follow up period, there was only one recurrence (6.6%), a woman aged 55 years that had persistent left upper abdominal pain with no abdominal findings. Her follow up abdominal ultrasonography revealed a suspicious cavity 6 cm in diameter in the spleen 14 months after surgery. She was re-explored and the spleen was also preserved after cyst puncture, aspiration and enucleation with drainage.

Discussion

Hydatidosis is a zoonotic and endemic disease in many cattle raising countries including Iraq [10, 11]. Rather few clinical series or case reports have addressed the issue of splenic involvement [5, 12]. As far as the age distribution is concerned, the present study revealed that splenic hydatidosis affects all age groups and the rate of infection was equal in sex distribution. This apparently fits well the findings of some workers [13, 14, 15]. In the present study, it was found that 3 splenic cysts (20%) were secondarily infected an observation that contradicts with Schwartz et al. who stated that patients with splenic hydatid cysts may rarely develop secondary infection, rupture or anaphylactic shock [15].

The asymptomatic presentation of 4 of our patients (27%) as painless lump in this study can be explained by the slow growth of the cysts. It was estimated that the growth is approximately 2-3 cm each year [5, 6, 12, 16]. Those who presented with pain in 6 of our patients (60%), this symptomatology was attributed by Atmatzidis K et al. either to pressure of cyst or to the size of big spleen pressing on adjacent viscera or due to the presence of complications [17]. Regarding the diagnosis, Moumen et al stressed on the need of sonography for asymptomatic forms of splenic hydatid cysts associated with other localizations [18].

These observations were utilized in the current study as we were dependant on abdominal ultrasound for estimating size, localizations and complexity together with its use in the follow up period. Franquet etal recommended that abdominal sonography or CT scanning had the opportunity for decision making for splenic preservation [19].

Their sonographic criteria for deciding preservative surgery in their 6 out of 9 cases studied included the number of splenic cysts(single in all cases), echoic

texture(anechoic in all except 1 case of solid echogenic pattern corresponding to intracystic infolded membrane, scoleses & hydatid sand) whereas in 7 studied cases, the CT criteria were evaluated for wall calcification (in 4 cases), precontrast attenuation than surrounding spleen(all except 1)& degree of IV contrast enhancement(no lesion). These criteria were not followed in the current study as our decision making for splenic preservation was only dependant on intraoperative findings without imaging criteria especially when the spleen was adherent and touching it might contribute to a troublesome bleeding or spillage of the contents of hydatid cysts to the peritoneal cavity.

Regarding cyst diameter that was ranged from 4 to 25 cm in the cases studied, this size was consistent with the series of Safioleas M and Bellakhdar A [5, 6]. After reviewing the literature, it was found that concomitant heptic hydatid disease occurred in 20 -30 % [5, 6, 20] while it was (40%) in our study. For many years ago, splenectomy was the standard treatment of splenic hydatid cysts [9, 15], however splenectomy was associated with sepsis- related deaths in 1.9% in adults and 4% in children [21, 22]. Splenic sparing surgery have been increasingly proposed [4, 23] while some others concluded that it is possible only in cases with early diagnosis [24].

Although splenectomy provided minimal risk of recurrence [5, 6, 12, 16] the recurrence rate in our studied patients during the follow up period was (6.6%). This observation had some similarity with Atmatzidis K et al who had operated on a total of 19 patients with splenic hydatid cysts (11 splenectomised & 8 had spleen preservation).Their recurrence rate were 12% & 14% in both procedures respectively. They concluded that no significant increase of recurrence and hospital stay between total splenectomy and spleen sparing surgery [17]. The technique we used in our study had some similarity with the techniques used by Herrera Marino N and Bhatnagar V et al. as these procedures are safe, feasible and associated with minimal complications [25, 26]. Albendazole medication that we used mainly in the post operative period was favored also by Saimot et al. who recommended its use as an adjuvant therapy in selected operations associated with intraoperative cyst spillage or intraabdominal disseminated disease [27] and even recurrence [28].

The present study concludes that splenic – sparing surgery for splenic hydatid cysts is feasible with minimal complications or recurrence. Post operative use of adjuvant albendazole therapy can complement surgery and yields gratifying results.

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Fig (1) unilocular splenic hydatid cyst

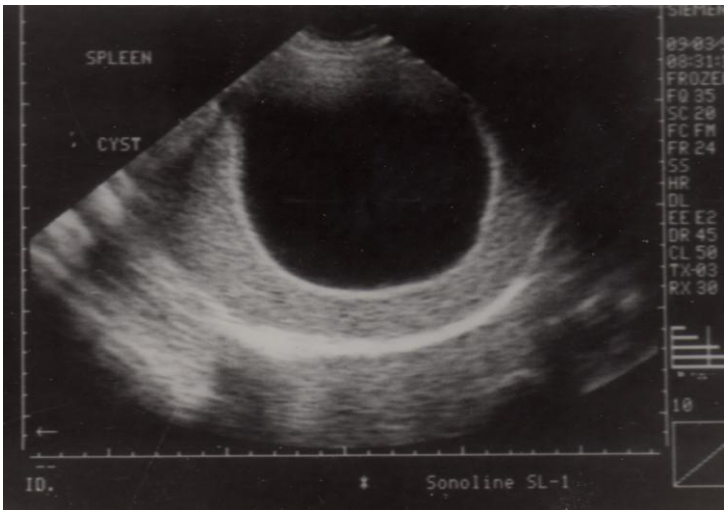

Fig (2) multilocular splenic hydatid cyst with daughter