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Primary Splenic Hydatidosis

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Key Words
Echinococcosis · Splenic disease · Splenectomy

Abstract

Background: A hydatid cyst is still a serious health problem in endemic areas. Invasion of the spleen is rare in hydatid disease. In the medical literature, reports about isolated splenic hydatidoses are quite rare. Also there is not a consensus about the way of treatment. ***Methods:*** Between 1978 and 2000, in our clinic approximately 900 patients were operated on for an abdominal hydatidosis; 850 of these patients were treated for a hepatic hydatidosis and 14 patients for an isolated splenic hydatidosis. Six (42.8%) of the latter patients were male and 8 (57.1%) were female. The mean age of the patients was 47.14 ± 4.9 (range 17–72) years. Ten patients (71.4%) presented with a painful mass in the left upper quadrant of the abdomen, and the other 4 patients (28.5%) were asymptomatic and were diagnosed incidentally. ***Results:*** All of the patients underwent elective splenectomy. There was no mortality, but complications occurred in 4 (28.5%) patients. The period of hospitalization ranged from 7 to 17 days with a mean of 9.8 days. 1 patient died from an acute myocardial infarction during the 2nd postoperative year, and 1 patient died as a consequence of a traffic accident during the 5th postoperative year. Nine patients, after follow-up periods of between 2 and 14 years, are living free from disease. No recurrence occurred in any of them. In the remaining 3 patients, long-term follow-up could not be maintained. ***Conclusions:*** A hydatid cyst must be included in the differential diagnosis of cystic lesions of the spleen. A splenic hydatid cyst should be treated surgically due to the high risk of a rupture, and the ideal procedure in adulthood is standard splenectomy.

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Introduction

A hydatid cyst is still a serious health problem in endemic areas as well as in our country. Although it is a benign disease, due to its complications hydatid disease causes a reasonable rate of morbidity, loss of manpower, and wastage of resources. Invasion of the spleen is relatively rare. Splenic hydatidosis is seen in the third place in the order of frequency after hepatic and lung invasion [1–3]. Primary splenic hydatidosis is quite rare. Articles about this subject are generally published as case reports and are limited in number [4–6]. Also there is no consensus about the way of treatment.

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Patients and Methods

Between 1978 and 2000, approximately 900 patients were operated on for abdominal hydatidosis; 850 of these patients were treated for hepatic hydatidosis, and 14 of these patients were treated for isolated splenic hydatidosis at the Department of General Surgery, Cerrahpasa Medical Faculty. The patients were retrospectively evaluated according to demographic characteristics, clinical signs, methods of diagnosis, and treatment modality, and data are presented with long-term follow-up results. Abdominal ultrasound, computerized tomography, and serological tests were done in all patients, and the diagnosis of a hydatid cyst was established preoperatively in all patients on the basis of the results of these procedures, so elective splenectomy was performed.

Six (42.8%) of the patients were male, and 8 (57.1%) were female. Their ages were between 17 and 72 years, with a median age of 47.14 ± 4.9 years. Ten patients (71.4%) presented with a painful mass in the left upper quadrant of the abdomen, and the other 4 patients (28.5%) were asymptomatic and were diagnosed incidentally during routine examinations. The diameters of the cysts ranged between 12 and 28 cm, with a mean diameter of 19 cm.

In 3 cases with giant cysts (diameter >20 cm), due to the risk of an intraoperative rupture, albendazole treatment (10 mg/kg/day) was started, but after an uneventful operation this treatment was stopped. Splenectomy was performed by left subcostal incision in 11 patients and by median incision in 3 patients having coexisting diseases. In 2 of the cases with asymptomatic cholelithiasis cholecystectomy and in 1 patient with a left ovarian cyst wedge resection were added to the splenectomy. No operative mortality occurred in our series. In 1 patient (7.1%) atelectasis and in 3 patients (21.4%) minor wound infections occurred as complications. In 1 patient (7.1%) minimal left-sided pleural effusion occurred, probably due to diaphragmatic irritation, but it diminished spontaneously. The duration of hospitalization ranged between 7 and 17 days with a mean of 9.8 ± 0.6 days. One patient died of acute myocardial infarction during the 2nd postoperative year, and 1 patient died as a consequence of a traffic accident 5 years after surgery. Nine patients, after follow-up periods of between 2 and 14 years, are living free from disease. No recurrence occured in any of them. In the remaining 3 patients, long-term follow-up was not possible.

Discussion

Cystic lesions of the spleen comprise parasitic and nonparasitic cysts. Parasitic cysts are due almost exclusively to the larval stage of *Echinococcus* and account for 60–70% of splenic cysts in countries where hydatid disease is endemic. Nonparasitic cysts are classified as primary or true cysts, which have an epithelial lining, and pseudocysts. True cysts are very rare and include epidermoid and dermoid cysts, cystic hemangiomas, and cystic lymphangiomas. Splenic hydatid cysts are generally asymptomatic. In these asymptomatic patients, the diagnosis is established during investigations for other reasons. When the cyst reaches an advanced size (fig. 1), it presents with a painful mass in the left upper quadrant [7, 8]. Most of the



Fig. 1. CT appearance of a giant splenic hydatid cyst.

patients in our series (71.4%) presented with a painful mass on admission. If the cyst is infected, or abscess formation has been occurred, left upper quadrant pain, fever, and leukocytosis develop [9]. The clinical picture is dramatic in cases with rupture into the free peritoneal space which may cause fatal anaphylactic reactions [7]. Rarely, cysts can cause colonic fistulae [8]. Due to the risk of spontaneous or traumatic rupture, there is an absolute indication for splenic hydatid cysts to be treated surgically [5, 7, 10]. The standard treatment is open total or partial splenectomy [11]. In our clinic, we prefer standard splenectomy. Also in a previous study performed in our clinic [12], 16 patients with an isolated splenic hydatid cysts presented between 1952 and 1978 were treated by splenectomy, but we have not included them in our present study due to lack of long-term follow-up periods. Complications of splenectomy such as hemorrhage, gastric injury, or pancreatic fistulae caused by careless or inadequate surgery are reviewed in the literature [7, 13, 14]. None of such complications occurred in our series. Two major causes of late morbidity due to splenectomy are thromboembolic complications and overwhelming postsplenectomy infections (OPSIs). Thromboembolic complications particularly occur in patients with myeloproliferative diseases, while OPSIs occur in patients who undergo splenectomy for malignancy and hematological diseases as well as in children younger than 4 years of age [5, 13, 14]. Fortu-



Fig. 2. The giant cyst shown in figure 1 (CT presentation) after surgical removal.

nately, we have not seen such complications. There are some authors suggesting conservative surgery due to the 10% risk of an OPSI reported in the literature. It is suggested that spleen-sparing surgery can be performed only if the cyst is completely inactivated with an adequate amount of parenchyma remaining – at least one third of the original size [15–17]. This can be feasible in small cysts located peripherally. The general condition of the patient and the risk of an OPSI should be considered while deciding on conservative surgery. Also in larger cysts, it is suggested that the splenic parenchyma is significantly reduced because of the pressure atrophy. In our series the mean diameter of the cysts was 19 cm, so we did not prefer spleen-sparing surgery. Also the thickened fibrous membrane we have seen in hepatic hydatid cysts is quite thin and fragile in splenic cysts. So the risk of an intraoperative rupture is high in these cases. Blunt manipulations should be avoided, and a careful dissection should be performed. To reduce the risk of an intraoperative rupture, albendazole therapy should be started preoperatively, especially in giant cysts. Some authors suggest some precautions which can be taken perioperatively. The surroundings of the organ can be covered with swabs soaked with scolocidal agents. Cystic fluid can be drained with puncture and aspiration to reduce the intracystic pressure. Then a scolocidal agent can be introduced into the cystic cavity and left for 5 min; subsequently splenectomy can be performed, but the ideal way is to complete splenectomy without even puncture of the cyst (fig. 2). By this way the risk of contamination is significantly reduced. For that reason in all of our cases we performed splenectomy without puncture of the cyst.

Percutaneous drainage has also been gaining acceptance with recent progress in radiological interventions. The technique is known as PAIR – puncture, aspiration, injection(of a scolocidal agent), and reaspiration –, but series about this treatment are mostly on hepatic hydatidosis [18, 19]. Franquet et al. [20] suggested that percutaneous drainage of splenic abscess lesions must be avoided when hydatid disease is suspected.

In recent years, in spite of the advances of laparoscopic surgery, we have some drawbacks in performing laparoscopic interventions in hydatid disease. Uncontrolled puncture of the cyst carries the risk of an anaphylactic shock and of intraperitoneal dissemination [1, 7, 14]. Also there are reports suggesting laparoscopic splenectomy in uncomplicated hydatid cysts of liver and spleen as a safe and effective option with favorable long-term results [21, 22]. Hand-assisted laparoscopic splenectomy is another option for the laparoscopic approach, but there are rare case reports with unsatisfactory long-term follow-up results [23]. However, there is still controversy on that subject, and prospective studies on more extended patient groups are needed.

To conclude, a hydatid cyst must be included in the differential diagnosis of cystic spleen lesions. A splenic hydatid cyst should be treated surgically due to the high risk of a rupture, and the ideal procedure in adulthood is standard splenectomy.

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