An alternative approach for the surgical management of hydatid disease of the liver

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Abstract Hydatid disease of the liver still remains a serious medical problem. As a result of increased travelling and immigration, it has also appeared in previously unaffected countries and is now well manifested in countries where the medical personnel lack the experience to treat this problem. We report an alternative method for the surgical management of hydatid disease of the liver, especially that located over the right superior-posterior aspect of the liver. Through a lateral right thoracotomy, we have a better exposure of the cyst and by using the right hemidiaphragm we achieve the same beneficial effect as omentoplasty does.

Keywords Echinococcus · Hydatid disease · Omentoplasty · Myoplasty

Introduction

Human echinococcus is still endemic in the Mediterranean countries and has remained surprisingly constant [6]. As a result of increased travelling and immigration, it has also appeared in previously unaffected countries [9]. Approximately 200 new cases are diagnosed yearly in the United States [9].

Although operation is the treatment of choice, controversy exists about the most appropriate surgical approach [1, 3, 5, 10]. Radical operations remove the cyst completely with the pericyst and include pericystectomy and hepatectomy. Conservative operations evacuate the contents of the cyst without removal of the pericyst. Even though radical procedures achieve better results, many centres with wide experience believe that it is also possible with less extended operations to achieve lower morbidity and mortality [2, 4].

We report an alternative approach for the surgical management of hydatid cysts. In patients with cysts located over the right superior-posterior aspect of the liver or in patients with multiple laparotomies who need a re-operation for recurrent disease and the cyst is adhered to the right hemidiaphragm, the approach that is usually performed is the thoracoabdominal incision. Many of these liver cysts can only be approached from above. Through a right lateral thoracotomy we have a better exposure of the cyst and by doing myoplasty of the right hemidiaphragm, we achieve the same beneficial effect as omentoplasty does. The aim of this report was to introduce an alternative thoracic approach for resection of hydatid disease located at the superior aspect of the right lobe of the liver.

Case report

A 64-year-old man with an exceptionally large cyst of the liver was admitted to our department, because in a routine work-up he revealed eosinophilia with more than 300 eosinophils per cubic
millimeter. The serum sample was positive by radioimmunoassay for antiechinococcal antibodies. Plain abdominal roentgenogram revealed partial calcification of the cyst wall, while ultrasonography and computed tomography revealed a cyst size ranging from 8 cm to 12 cm in diameter located over the right superior-posterior aspect of the liver (Fig. 1).

Medical treatment with albendazole was used preoperatively for 1 month and postoperatively for 3 months. At surgery, instead of a thoracoabdominal incision, a right posterior-lateral thoracotomy was performed, while the right hemidiaphragm was opened. After isolation, the echinococcal cyst of the liver from the peritoneal cavity was treated with compresses soaked in hypertonic saline solution (15%); the cyst was then carefully punctured and 20 ml cystic fluid was removed and replaced by an equal volume of the scolicidial hypertonic saline solution. This solution remained in the cyst for a few minutes to sterilise it. This was repeated twice. Thereafter, partial pericystectomy and evacuation of the contents of the cyst were performed. The residual cavity was drained using a high vacuum drainage system (Redon, Drainobag, Germany) through the abdominal wall. The drain was removed on the fifth postoperative day, as soon as the volume of drainage became negligible.

To eliminate the cavity of the cyst, omentoplasty is usually performed. Because of the right thoracotomy, mobilisation of the omentum was impossible. For that reason, we applied a new technique instead of omentoplasty. We closed the right hemidiaphragm using interrupted stitches with vicryl 1–0 in different levels parallel to the incision so that the edges of the hemidiaphragm protruded into the residual cavity of the cyst (Fig. 2). With this procedure, the diaphragm plays a similar role as the omentum in omentoplasty. A temporary closed drainage of the pleural cavity was also required. The postoperative course of the patient was uneventful.

A follow-up hepatic ultrasonographic examination was carried out 6 months after the operation and every year thereafter. The patient is without any recurrence 3 years after the operation.

**Discussion**

Because of the increasing ease in transportation, hydatidosis is now well manifested in countries where the medical personnel lack the experience to treat this problem. Asymptomatic cysts may exist for years without complaints from the patient. The disease must be diagnosed and treated, however, because it can cause lifethreatening complications such as anaphylactic shock, rupture into the biliary tree, cyst infection and, eventually, replacement of liver parenchyma [8]. The clinical efficacy of anthelminthics has not been proven. Surgical treatment remains the mainstay in the management of hydatid disease and should be individualised to the patient according to the number and location of cysts, the presence of cyst infection, and complications.

In patients with cysts located over the right superior-posterior aspect of the liver or in patients who need a re-operation for recurrent disease and the cyst is adhered to the right hemidiaphragm, a right thoracoabdominal incision is usually the most appropriate approach. Simulta-