Hepatic hydatidosis. Radical vs. conservative surgery: 22 years of experience

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RESUMEN
Introduction: la incidencia de la hidatidosis hepática ha disminuido notablemente en los últimos años gracias a las medidas de prevención adoptadas para interrumpir la transmisión del parásito. Con todo, la cirugía continúa siendo el tratamiento de elección, si bien su modalidad es todavía motivo de controversia.

Objetivos: el objetivo de este trabajo es evaluar los resultados obtenidos en el tratamiento de esta patología a lo largo de más de dos décadas, atendiendo a la modalidad quirúrgica empleada ya fuese cirugía radical o no radical.

Material y métodos: se analizaron un total de 372 pacientes intervenidos por quiste hepático hidatídico (QHH) entre 1983-2005 en el Hospital Ramón y Cajal. En 162 se efectuaba una cirugía radical (43,5%) y en 210 una no radical (56,5%).

Resultados: tanto la estancia media hospitalaria (8,65 días vs. 14,9 días) como la morbilidad (13,3 vs. 31,4 %, p < 0,001) y la mortalidad (0 vs. 3,8%, p < 0,01) fueron menores en el grupo de cirugía radical. La tasa de recidiva fue del 1,85% tras un abordaje radical frente al 11,9% en los abordajes no radicales (p < 0,0001).

Conclusión: la cirugía radical se asocia con una menor morbimortalidad, menor estancia hospitalaria y menor recidiva, constituyendo la técnica de elección en la hidatidosis hepática. Sin embargo, su aplicación debe atenerse a las características del paciente, la anatomía del quiste y el grado de experiencia del equipo quirúrgico.

Palabras clave: Quiste hidatidico. Tratamiento. Cirugía radical. Cirugía no radical.

ABSTRACT

Objectives: the incidence of hepatic hydatidosis has remarkably decreased in the last years due to the preventive measures adopted to stop the transmission of the parasite. However, surgery carries on being the treatment of choice, although the surgical procedure is still a matter of controversy. The aim of the study was to evaluate the results obtained with the treatment of this condition after two decades according to surgical procedure type.

Material and methods: from 1983 to 2005, 372 patients were operated on for hepatic hydatid cyst in Hospital Ramón y Cajal. Radical surgery was performed for 162 (43.5%) and conservative surgery for 210 (56.5%).

Results: average postoperative hospital stay (8.65 vs. 14.9 days), morbidity (13.3 vs. 31.4 %, p < 0.001), and mortality (0 vs. 3.8%, p < 0.01) were lower in the radical surgery group. Recurrence rate was 1.85% after radical surgery versus 11.9% in the conservative surgery group (p < 0.0001).

Conclusion: radical surgery is associated with lower morbidity, mortality, postoperative hospital stay, and recurrence rates, and represents the treatment of choice for hepatic hydatidosis. However, its indication must depend on the patient characteristics, cyst anatomy, and surgical team experience.

Key words: Hydatid cyst. Treatment. Radical surgery. Conservative surgery.

INTRODUCTION

Hepatic hydatidosis is a disease produced by the growth of *Echinococcus granulosus* larvae in the human body, an intermediate host in the cycle of the parasite (1).
Although traditionally considered a benign disease, a variable clinical course, uncertain outcome, and potential complications make this pathology a potentially fatal disease.

In spite of the use of chemotherapy agents such as mebendazole and albendazole, surgery carries on being the treatment of choice for this condition (2,3).

Traditionally surgical procedures have been divided into two groups: Radical and conservative, being the election controversial. The results obtained by radical surgery have been better in relation to recurrence, hospital stay, morbidity, and mortality, but such procedures may entail a serious operative risk in a patient with a benign disease (4,5).

The aim of this study was to analyze our experience in the surgical treatment of hepatic hydatidosis, especially attending to the surgical procedure performed.

MATERIAL AND METHODS

We performed a retrospective study of 372 patients with hepatic hydatidosis (HH) operated on at Hospital Ramón y Cajal from January 1983 to December 2005.

The diagnosis was established by imaging studies (computed tomography, echography, magnetic resonance), blood testing (eosinophilia, liver function tests), and serology tests (antibodies and IgE for Echinococcus).

We considered radical procedures (RS): Total cystopericystectomy, subtotal cystopericystectomy (leaving a small area of pericystium), cystoresection, and hepatectomy. We considered conservative procedures (CS) those in which the pericystium was not removed.

The choice of surgical procedure depended on the surgeon and was performed according to these characteristics: Cyst location and size, vascular relationships, number of cysts, patient comorbidity, and surgical experience. In this sense, we differentiated two surgical teams: Group A (especially devoted to hepatic surgery) and group B (with no special dedication).

The statistical analysis was carried out using SPSS. For statistical comparisons between the two groups the chi-square and Fisher tests were used. A result was considered statistically meaningful if p < 0.05.

RESULTS

Forty-five of all 372 patients had been previously operated on for hepatic hydatidosis. This surgery had been performed between 1 and 42 years (average of 13.8 years). In 7 patients the diagnosis of hydatid cyst was associated with portal hypertension, biliary cirrhosis, and cavernoma. During surgery 8 cases of urticaria and 4 anaphylactic shocks were recorded; two patients developed hydatid pulmonary embolism, and one patient suffered paraplegia in relation to vertebral hydatidosis.

RS was performed in 162 patients (43.5%) and CS in 210 (56.5%). The type of surgical procedure used by every surgeon is reflected in table I. Figures 1 and 2 show the outcome of the surgical procedure over time.

The distribution of hydatidic cysts is reflected in figure 3.

### Table I. Surgical procedure/surgical team

<table>
<thead>
<tr>
<th></th>
<th>Radical surgery</th>
<th>Conservative surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A</td>
<td>108 (66.6%)</td>
<td>69 (32.8%)</td>
</tr>
<tr>
<td>Group B</td>
<td>54 (33.4%)</td>
<td>141 (67.2%)</td>
</tr>
</tbody>
</table>

* p < 0.001.

Fig. 1. Outcome of surgical procedure I.

Average postoperative hospital stay was shorter in the RS group (8.6 vs. 14.9 days), with ranges between 3 and 24 days and 6 and 29 days, respectively. Overall complications rate was lower in the RS group (13.3 vs. 31.4% in the CS group) (p < 0.001; OR: 3.07; 95% CI: 1.7-5.3).

Mortality rate was 2.15%, this being lower in the RS group RS (0 vs. 3.8% for CS) (p < 0.01; OR: 1.04; 95% CI: 1.012-1.068). There was no case of intraoperative mortality in the RS group, but two patients died during CS, secondary to cava vein hemorrhage and a pulmonary embolism. The remaining 6 patients died some time after hospital discharge from hepatic hydatidic disease complications. Causes are reflected in table II.

Table III shows the comparative study reference to biliary fistula, abdominal abscess, late admissions, and recurrence.
Although, traditionally, hepatic hydatidosis has been considered a benign disease, its variable clinical course, uncertain outcome, and potential complications make this condition a potentially lethal disease.

Surgery carries on being the treatment of choice, with a rate of cure around 90% (2,3). Improved hygienic and socioeconomic conditions in many countries have led to reduce the incidence of this endemic disease around the world. In our experience of two decades, the number of surgical procedures has fallen by 90%. The surgical management of these patients is still a matter of lively debate among surgeons. Evidence level is too low to help decide between radical or conservative treatment (6).

Surgeons who consider radical surgery the treatment of choice claim lower recurrence, hospital stay, and morbimortality rates (4,5,7-16). On the other hand, others prefer conservative surgery because radical surgery may carry a serious operative risk in a patient with a benign disease.

Nowadays radical procedures are more frequent, and this is confirmed in our experience; in the first decade of our study, 66% of procedures were conservative (157 out of 234 patients), whereas this rate was decreased to 39% in the subsequent decade (53 out of 138 patients). This transformation is secondary to increased specialization in hepatic surgery and the better results obtained with this kind of procedure (RS), as comparative results reflect concerning hospital stay, morbidity, mortality, and recurrence. This affirmation is shared by other authors (4,5,8-13,15).

Even though RS has better results, we consider that this procedure should not be used systematically, but indications may be based on hepatic hydatidosis parameters, patient condition, and surgeon experience. In our experience, while RS was preferred by the team with more experience in hepatic surgery, one third of operations by this group were CS procedures.

The great advance in laparoscopic surgery in the last few years has affected the management of hydatidic cysts with good results (17-23). However, indications and long-term results are still inaccurate.
In conclusion, radical surgery is associated with a lower rate of morbimortality, a shorter hospital stay, and lower recurrence rates, and constitutes the technique of choice for hepatic hydatidosis. However, this procedure should not be systematically used in all patients, and its indication must depend on patient characteristics, cyst anatomy, and surgical team experience.

REFERENCES


### Table III. Morbidity/Recurrence

<table>
<thead>
<tr>
<th></th>
<th>Radical surgery</th>
<th>Conservative surgery</th>
<th>p value</th>
<th>OR (95% interval confidence)</th>
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<tr>
<td>Biliary fistula</td>
<td>4.3%</td>
<td>25.6%</td>
<td>p &lt; 0.0001</td>
<td>7.66</td>
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<tr>
<td>Abdominal abscess</td>
<td>3%</td>
<td>11.95%</td>
<td>p &lt; 0.002</td>
<td>4.24</td>
</tr>
<tr>
<td>Late admission</td>
<td>3%</td>
<td>12.58%</td>
<td>p &lt; 0.001</td>
<td>4.44</td>
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<tr>
<td>Recurrence</td>
<td>1.85%</td>
<td>11.9%</td>
<td>p &lt; 0.0001</td>
<td>7.16</td>
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