

MINIINVASIVE APPROACH TO THE TREATMENT OF LIVER CYSTS

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During the period from 1995 to 1997 we followed and treated six patients for liver cysts. Diagnostics was based not only on clinical examination but also on ultrasonography and computational tomography (CT). Surgery is applied in solving larger cysts damaging liver parenchyma and causing pressure symptomatology. Nowadays most cysts can be solved by means of laparoscopy.

INTRODUCTION

Etiopatogenesis of liver cysts and pseudocysts is very diverse (Table 1). The disease is quite rare; the only exception is the endemic occurrence of echinococcus liver cysts in some areas of the Mediterranean Sea^{9,11,13,14}. However, the number of parasitic cysts in Europe is increasing due to migration of inhabitants². It is necessary to make a clear difference between liver cysts and cystic dilatation of extrahepatic bile duct, i.e. Caroli syndrom^{1,4}. Polycystic disease of the liver, an inherited disorder, transmitted as an autosomal dominant, is a completely different disease characterized by hepatomegalia and accompanying polycystic disease of the kidneys¹⁷.

CLINICAL PICTURE AND TREATMENT

Liver cysts symptomatology is rather varied (Table 2). The most frequent symptoms are the following: increasing intraabdominal pressure, pain under the right costal arch, and increasing abdomen volume. Complications (e.g. infection, intracystic haemorrhage, cyst perforation, pedunculated cyst torsion) may result in symptoms of abdominal emergency. Some cysts may cause cholestasis and portal hypertension^{5,13,14}.

Liver cysts are usually found on the liver surface or in parenchyma, they are either solitary or multiple. Besides the clinical finding (i.e. palpable resistance in the epigastrium) we use in diagnostics of the disease ultrasonography and computational tomography. In parasitic cysts the immunodiagnostic testing is widely used to prove the presence of specific antibodies working against a parasite. Cysts due to Echinococcus are the most frequent. In some cases the cyst wall is less permeable for the transition of antibodies from the cysts into surrounding tissues, thus the amount of antibodies is small and serology tests may be negative (Table 3).

The method of surgical treatment is determined by etiology, number, size and location of a liver cyst (Table 4). Surgery is applied in larger cysts damaging liver parenchyma and leading to pressure symptoms. The methods of surgical management used range from percutaneous drainage to liver transplantation. The extirpation of a cysts and a part of the liver parenchyma is the most frequent one. Partial resection, fenestration or marsupialization combined with omentoplasty is the method of choice. Most of the above-mentioned procedures may be performed laparoscopically^{3,6,7,8,10,12}.

MATERIAL AND RESULTS

During the years 1995–1997 we followed and treated 6 patients suffering from liver cysts (3 male and 2 female patients; the mean age – 57 years, ranging from 36 to 72 years). We operated on four patients (3 laparoscopies), one patient was just followed (Table 5).

The cyst (diameter of 3 cm) with calcification in its wall located in the dorsal segment of the right liver lobe was found during ultrasonography of the kidneys in a 52-year old man (Fig. 1). Serology examination was negative. The patient does not suffer from any considerable problems and is regularly examined.

A 36-year old man suffered from pains under his right costal arch. Ultrasonography and CT examination identified a cyst (9 x 7 x 13) with a calcified wall in the dorsal segment of the right liver lobe (Fig. 2). Serology tests proved an echinococcus cyst. A partial resection (thoracoabdominal approach) of the right liver lobe with a cyst followed the treatment by Vermox (Fig. 3). A relatively long morbidity period after the surgery is rather typical for this kind of operation. The convalescence took several months.

A 57-year old woman suffered from pressure and volume increase of the epigastrium. Ultrasonography

and CT examination identified a cyst in the medial segment of the left liver lobe extending as far as the gall bladder bed (Fig. 4). First we drained off 470 ml of a brownish liquid, then we performed a laparoscopic partial resection of the cyst and omentoplasty. Histology proved hepatobiliar cystadenom. During convalescence there were no problems and the woman could leave the hospital on the twelfth day after the surgery.

Another patient, a 54-year old man, suffered from cholecystolithiasis (ultrasonographically diagnosed) and a liver cyst located very close to the gall bladder (Fig. 5). The cyst filled up again after the repeated punctures (controlled with ultrasonography). Serology tests were negative. We performed laparoscopic cholecystectomy and partial resection of the cyst. The patient left the hospital after three days. Histology showed the cyst wall was formed of a thin layer of vascular connective tissue with focal lymphocyte infiltration. The cyst lining was formed of atrophic basophilic columnar epithelium (mesothelium).

A 72-year old woman after a left-side mastectomy (ca T2 N2 MO, 1994) suffered from pains under the right costal arch. Ultrasonography and CT examination identified a large septic liver cyst in the right liver lobe (Fig. 6). After 2,5 l of an opaque exudate was drained off the laparoscopic resection of a multilocular cyst followed. Convalescence went on without any problems. Histology proved no signs of a malignant liver cyst wall.

A 72-year old man suffered from cholecystolithiasis (proved by ultrasonography) and four cysts in the right liver lobe (convex) – size from 3 x 3 cm to 6 x 4 cm. After laparoscopic cholecystectomy the drainage and a partial resection of liver cysts was performed. There were no complications and the patient left the hospital on the seventh day after the operation.

DISCUSSION

The liver cyst surgery should minimize the risks for patients and at the same time lower the chance of recurrence. More examples of surgical treatment of liver cysts can be found in the areas of endemic echinococcosis occurrence. Surgery of non-parasitic cysts is rather rare. Laparotomy and open liver resection may cause a long term morbidity and result in a prolonged convalescence. Simple procedures are effective (e.g. enucleation, partial resection of a cyst wall, fenestration). Endoscopic methods enable to perform these operations by means of laparoscopy which is efficient and much more considerate of the patient.

CONCLUSIONS

Laparoscopy enables the final solution of a liver cyst. Miniinvasive therapy is known to be very considerate of the patients. They can leave the hospital relatively soon after the surgery and the convalescence period is shorter.

Table 1. Etiopatogenesis of liver cysts

Parasitic	– Echinococcus – Ameboid (abscess)
Non-parasitic	– Congenital – Neoplastic – Polycystosis
Pseudocysts	– Traumatic – Pyogenic
Differential diagnostics	
Choledochus cysts	
Caroli syndrom	

Table 2. Liver cysts symptomatology

Typical:	Asymptomatic Pressure Pain Increase of the abdomen volume
Complications:	Infection Haemorrhage Perforation Torsion
Rare:	Cholestasis Portal hypertension

Table 3. Liver cysts diagnostics

Palpation
Ultrasonography
Computational tomography
Immunodiagnosics

Table 4. Liver cysts treatment

Inoperable
Puncture (with/without alcohol)
Operable
Puncture
Partial resection
Fenestration
Total exstirpation
Marsupialization
Omentoplasty
Liver resection

Table 5. Liver cysts

II. chirurgická klinika FN a LF UP Olomouc, 1995–1997

	6 patients	
Male		Female
4		2
Non-parasitic		Parasitic
5		1
Surgery		Follow-up
5		1
Liver resection		
1		
Laparoscopic partial cyst resection		
4		



Fig. 1. Ultrasonography in a 52-year old man (Asymptomatic liver cyst)



Fig. 4. CT finding in a 57-year old woman suffering from non-parasitic liver cyst



Fig. 2. CT finding in a 36-year old man (Echinococcus cyst)

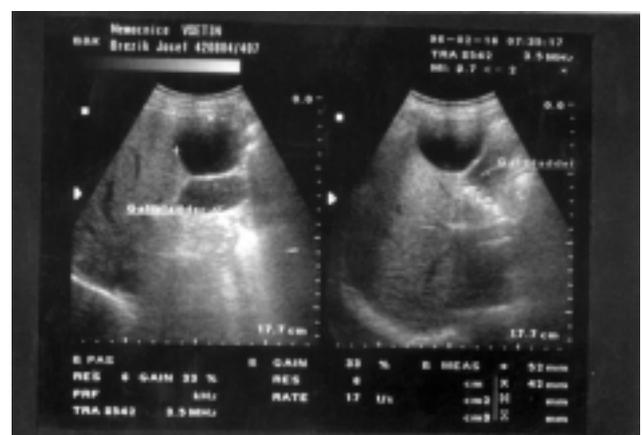


Fig. 5. Ultrasonography in a 54-year old man (Liver cyst and cholecystolithiasis)

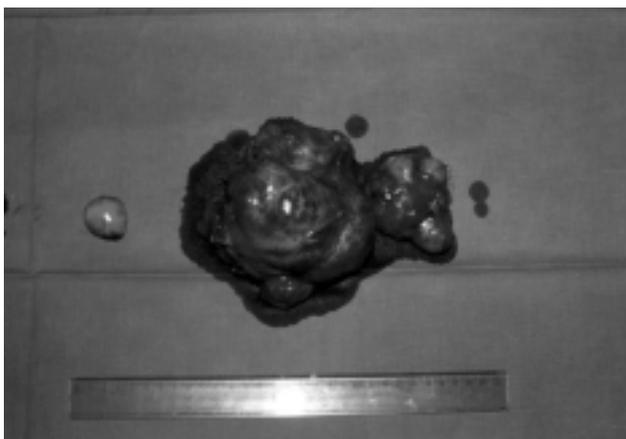


Fig. 3. Resection in a 36-year old man



Fig. 6. CT finding in a 72-year old woman suffering from non-parasitic liver cyst

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