Giant Simple Hepatic Cyst (A Case Report) and Review of the Literature

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ABSTRACT

Giant cysts of the liver are uncommon. The symptoms of cystic disease are related primarily to the mass effect of the slowly enlarging cyst: abdominal lump, palpable mass, right upper quadrant pain from the stretching hepatic capsule, jaundice from compression of the bile duct, or portal hypertension from portal vein obstruction. We report a case of a giant hepatic cyst in a 71-year-old female who was admitted to our clinic for abdominal lump and palpable mass. She was thoroughly investigated with ultrasonography, magnetic resonance imaging and computerized tomography scan of the abdomen along with other supportive investigations, and was diagnosed as having a 25 x 25 cm cyst in the left lobe of the liver. Cystectomy and drainage operations were performed in the patient.

Key words: Laparotomy, Giant cysts, Drainage, Hepatic cyst

ÖZET

Dev Basit Karaciğer Kisti (Olgu Takdimi) ve Literatüre Bakış


Anahtar kelimeler: Laparotomi, Dev kist, Drenaj, Karaciğer kisti
INTRODUCTION

Simple hepatic cysts rarely require operative intervention unless they become large enough to cause symptoms or develop features suspicious for cystadenoma or adenocarcinoma[1]. They are usually asymptomatic, but may occasionally present as abdominal pain, nausea, vomiting, and abdominal distention[2]. Management options include percutaneous aspiration, injection of sclerosing agents, laparoscopic or open fenestration, and surgical cystectomy[1-7].

CASE REPORT

A 71-year-old female presented with a 10-year history of abdominal discomfort, distention and mass. On physical examination, the abdomen was distended and a 25 x 25 cm mass was palpated. The mass arose from the right upper quadrant and filled most of the abdomen (Figure 1).

There was minimal abdominal tenderness on palpation, but no muscular defense or rebound tenderness was detected. There was no jaundice, lower extremity edema or ascites on physical examination. Laboratory findings revealed normal values except for minimally elevated alanine aminotransferase (ALT) and aspartate aminotransferase (AST) levels. Tumor marker levels were within normal ranges and indirect hemagglutination test for hydatid disease was negative. Abdominal ultrasound showed a hypodense cystic mass that filled most of the abdomen and distorted the hepatic veins. The borders of the mass could not be distinguished from the liver parenchyma, and the mass contained internal echoes and thin septations. Abdominal tomography revealed a 26 x 24 cm cystic mass that contained septations and lobulations. The mass was located in the anterior segment of the left lobe of the liver and extended exophytically into the abdominal cavity (Figure 2).

The dynamic abdominal magnetic resonance imaging report was in accordance with the computerized tomography and the dimension was 27 x 20 x 16 cm (Figure 3).

The patient was operated electively. The abdomen was explored from the right subcostal incision. The cyst extended along the vena porta and vena cava inferior. First, we aspirated approximately 7 liters of serous fluid (Figure 4). Then partial cystectomy and omentopexy were performed (Figure 5). There was no complication in the postoperative period, and the patient was discharged on the postoperative 5th day. On follow-up, she admitted to the hospital twice at three-month intervals. There was no recurrence clinically or radiologically.

Figure 1. The mass arose from the right upper quadrant and filled most of the abdomen.

Figure 2. The computerized tomography images depicting the giant hepatic cyst.
DISCUSSION

The prevalence of hepatic cysts is 0.1 to 0.5% based on autopsy studies and 2.5% based on ultrasound examinations. Hepatic cysts are classified into four main groups: congenital, neoplastic, inflammatory, and traumatic. Simple congenital cysts may be solitary or multiple, and are believed to arise from the abnormal development of intrahepatic bile ducts in utero[2,4,8]. The presented cyst in this case report was solitary and unilocular.

The majority of patients with non-parasitic hepatic cysts are asymptomatic, and the cysts may be found incidentally at laparotomy or with abdominal imaging. Simple cysts can be single or multiple and range in size from millimeters to more than 20 centimeters in diameter. Although symptoms of the cysts are rare,
they can occur if the cyst becomes complicated as a result of intracystic bleeding, rupture or secondary bacterial infection. Compression of adjacent structures can occur including compression of the inferior vena cava causing lower extremity edema, compression of the portal vein resulting in portal hypertension or compression of the biliary tree resulting in cholestasis [2-4,9,10].

Radiologic imaging techniques are useful in the detection and characterization of hepatic lesions. Hepatic cysts demonstrate water attenuation on computed tomography. Typical magnetic resonance imaging findings of a hepatic cyst include the same signal intensity as water, and do not enhance after intravenous administration of contrast material. Although the radiological characterization of cyst pathology before surgery is generally accurate, a high index of suspicion for the presence of a neoplastic cyst should be maintained. This differentiation is even more difficult for simple cysts presenting with intra-cyst hemorrhage and with unusual radiological appearances, which could be mistaken for cystadenomas [2,4,11].

Management options include surgical and nonsurgical methods. Simple percutaneous aspiration alone is not adequate. This technique is associated with risk of infection, and recurrence is invariable [3]. Saini et al. documented the follow-up of 13 patients who underwent radiologically guided percutaneous needle aspiration of simple liver cyst, and they revealed cyst recurrence in all patients within two years [12]. A 100% recurrence rate was reported in that study. Surgical decompression was required for definitive therapy in three cases. They concluded that the usefulness of percutaneous aspiration as the sole definitive therapeutic procedure is limited because of the certainty of recurrence of the cyst fluid.

Follow-up results were better with the use of percutaneous aspiration with sclerosis method than the use of needle aspiration alone. Macho Perez et al. reported successful treatment of a 93-year-old woman with giant simple hepatic cyst causing dyspnea by percutaneous aspiration and phenol alcohol [6]. Tomitaka et al. effectively treated giant hepatic cysts by transcatheter transhepatic ethanol injection therapy in two patients who were admitted to hospital because of epigastric fullness [7]. The procedure was repeated twice and the patients became asymptomatic. Bean and Rodan treated six patients with hepatic cysts with percutaneous aspiration and temporary direct injection of 95% ethanol into the cyst cavities [5]. There was no recurrence of the treated cysts on follow-up examinations of 6-18 months. Minor complications of transient pain, temperature elevation and hemorrhage into cyst occurred. No major complications were encountered. The authors concluded that aspiration with injection of alcohol could be a treatment choice for symptomatic congenital hepatic cysts. Percutaneous drainage and sclerosis technique has been performed in either single or dual sessions with formalin, minocycline, doxycycline, or monoethanolamine oleate [2,13,14]. However, this procedure may lead to irreversible sclerosing cholangitis because of the presence of undetected communication with the biliary system [15].

In recent years, many conventional open surgical procedures have been replaced by minimally invasive surgery. Symptomatic nonparasitic hepatic cysts, even giant cysts of the liver, have been treated by laparoscopic management. There are many case reports and series in the literature describing giant cysts, ranging in diameter from 15 to 25 centimeters, being treated by laparoscopic access [16-20]. However, the risk of recurrence with this technique is 10% to 25%, and the risk of conversion to an open procedure is 8.3%. Since the giant cysts of 25 cm or greater in largest diameter take up most of the abdomen and displace other organs, care must be taken to prevent injury to adjacent organs when obtaining access to the abdomen [1]. In some series, the morbidity rate reaches 33% [20]. Thus, laparoscopic fenestration should be a treatment choice for superficial cysts located in easily accessible areas, mainly in the anterior and lateral segments of the liver [3,18,19].

Although the majority of simple liver cysts can be managed by a laparoscopic approach, there is a definitive role for open surgical techniques in selected patients. Gall et al. reviewed a total of 102 patients with cystic disease of the liver treated by different techniques from 1985-2006 [4]. The median follow-up was 77 months (range 3–250 months). There were no statistical differences in quality of life according to the type of surgery for patients with simple cysts. Tocchi et al. analyzed the postoperative morbidity and mortality, length of postoperative hospital stay and long-term outcome of 34 patients who underwent surgery for symptomatic nonparasitic cysts of the liver, ranging from 7 to 28 cm in diameter, with a mean follow-up of 50 months [15]. They found that laparoscopic approach did not offer better results compared with the immediate and long-term results of open deroofing. They concluded that further effective improvement in laparoscopic technology and consequent consistent results in large series should be awaited.
before the minimally invasive approach was proposed as an alternative to the traditional open procedures. The conclusion of these authors is in accordance with the concept of Katkhouda et al. who reported that open surgery remained the treatment of choice when tumors were malignant, were located posteriorly, or were in proximity to major hepatic vasculature\(^\text{20}\).

In the present case report, we evaluated a patient with giant hepatic cyst treated by an open surgical procedure. We preferred open technique in this patient because of the proximity of the cyst to adjacent organs and to major vascular pedicles. In fact, it was revealed during the operation that the giant cyst extended along the vena porta and vena cava inferior. Although laparoscopic management is preferred by most surgeons for treating simple cyst of the liver, open surgery techniques should be performed in some selected cases.

REFERENCES


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