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# Laparoscopic Operation of Hepatic Hydatid Cyst with Intraabdominal Dissemination – A Case Report and Literature Review

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## ABSTRACT

*Hepatic hydatid cysts are a serious medical problem in some regions like Mediterranean region. In Croatia 25–30 new cases of hepatic hydatid cysts are recorded each year. In University Hospital Dubrava 7 patients with hepatic hydatid cysts were operated in 2008. Surgical approach recognizes open laparotomy and laparoscopy. The case and technique of laparoscopic operation of hepatic hydatid cyst in seventh segment and three disseminated intraabdominal cysts is described. Laparoscopy should be attempted even in complex cases with dissemination.*

**Key words:** *hydatid cyst, liver, laparoscopy, Croatia*

## Introduction

The surgical experience with hepatic hydatid cysts is limited worldwide thus being a serious problem from clinical-therapeutical stand-points in some regions like Mediterranean region<sup>1–3</sup>. As there are no effective parasiticides, it continues to be surgical problem. Although the surgical approaches as open laparotomy versus laparoscopic did not reveal significant differences, laparoscopy offers various possibilities<sup>4–7</sup>. In Croatia 25–30 new cases of hepatic hydatid cysts are revealed each year. In University Hospital Dubrava 7 patients with hepatic hydatid cysts were operated in 2008: 5 open laparotomy, 2 laparoscopic.

We describe the case and technique of laparoscopic operation of hepatic hydatid cyst and three additional intraabdominal disseminated cysts. The literature review did not reveal any data on such cases.

## Case Report

The 42 years old male patient had hepatic hydatid cyst verified for 16 years, as well as gastric ulcer and

hypothyreosis. Gastroenterologist did not recommend surgical treatment of the cyst. Two months before the operation, he was admitted to gastroenterology department in a different hospital because of upper abdominal pain that propagated in the direction of shoulders and back. US diagnostics revealed calcified hydatid cyst in the 7<sup>th</sup> segment of the liver 60 mm in diameter with considerable amount of free liquid between liver and right kidney and in Douglass. The cytology revealed content of fagocytes, mononuclears and a plenty of neutrophilic and eosinophilic granulocytes. MSCT showed the mentioned hepatic cyst and another one with hyperdense edge and hypodense heterogenic content between small bowel and colon near the left kidney 35 mm in diameter. Similar formation was found in lower abdomen, and a considerable amount of free liquid in Douglass and smaller amount surrounding the liver, spleen and paracolic on both sides.

The situation was figured out as cyst perforation with consequent peritonitis and was managed conservatively with NOVOCEF 2×500 mg/7 days, followed by albenda-



Fig. 1. CT scan of the liver cyst.

zole 2×400 mg/28 days preoperatively. When admitted to our hospital, second MSTC showed all three cysts and no free liquid (Figure 1).

Laparoscopy was performed as follows: Supraumbilical transverse 12 mm incision was followed by CO<sub>2</sub> inflation up to 13 mmHg through Veress needle. After that laparoscop was introduced through 12 mm trocar with no adhesions found. Through the transverse incision right to the medial line in the mid-distance umbilicus-xyphoid 11 mm in diameter another trocar was placed (Figure 2). After lifting up the liver with laparoscopic handle, the cyst 50 mm in diameter was found in the 7<sup>th</sup> segment of liver. Two additional trocars (one 11 mm in mammary line and umbilical level, other 5 mm in the same level towards lumbar) were placed. After removal of cystic adhesions on diaphragm and abdominal wall, the liver was lifted and hold through right trocar.



Fig. 2. Abdominal wall incisions.



Fig. 3. Pericystectomy of hepatic cyst performed with LigaSure.

The cyst was hold through lumbar trocar, and through 11 mm right mammary-line trocar pericystectomy was performed with LigaSure (Tyco/Healthcare, USA) (Figure 3). The hydatid cyst was left below liver. In the left upper quadrant the 5 mm trocar was placed through which omentum was mobilized and two cysts 35 mm in diameter were found under transverse colon. After pericystectomy, the cysts were placed below liver as well. Through the same 5 mm trocar, after removal of the omentum, 20 mm cyst was found ileocaecaly, and removed in the same way.

The instrument with nylon bag was introduced through 11 mm trocar beyond umbilicus, and laparoscop through the 11 mm trocar right from the midline (xyphoid-umbilicus). All four cysts were placed in the bag. The supraumbilical incision was extended for some 2 cm. Two smaller cysts were removed in one piece, and two greater were lacerated.

Subhepatic drainage was left for 24 hours. First day only liquid peroral diet and cefazolin 3x1 g/3 days, and thromboprophylaxis throughout 5 days of hospital stay.

Laboratory findings and US on day 3 were normal. He was discharged on day five.

## Discussion

Preoperative treatment with albendazole, followed by total cystopericystectomy as a radical surgical method is a method of choice regarding complications, mortality and recurrence rate in patients with hepatic echinococcosis<sup>2,8-10</sup>. The laparoscopic pericystectomy with good operative technique is rather smaller trauma for organism than open surgery and reveals fewer complications and lowers the hospital stay as well as costs. One should attempt laparoscopy even in complex cases with dissemination as in this case. Laparoscopic pericystectomy is possible even in rear seventh segment of liver, not only in front accessible segments<sup>10</sup>. If laparoscopic pericystectomy is not possible, laparoscopic Papadimitriou operation with omentoplasty should be performed<sup>10,11</sup>.

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## LAPAROSKOPSKA OPERACIJA EHINOKOKNE CISTE JETRE S INTRAABDOMINALNOM DISEMINACIJOM – PRIKAZ SLUČAJA I PREGLED LITERATURE

### SAŽETAK

Ehinokokna cista jetre je ozbiljan problem u nekom zemljopisnim područjima kao što je to Mediteran. U Hrvatskoj se godišnje registrira 25–30 novootkrivenih slučajeva ehinokoka jetre. U 2008. godini na našem odjelu operirali 7 bolesnika zbog ehinokoka jetre. Kirurški pristup može biti otvorena laparotomija ili laparoskopija. Opisujemo slučaj i tehniku laparoskopske operacije ehinokokne ciste u sedmom segmentu jetre i tri diseminirane intraabdominalne ciste. laparoskopski pristup preporučamo i kod složenih slučajeva s diseminacijom.