



CURRENT MODE OF TREATMENT OF THE HEPATIC HYDATID CYST

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SUMMARY

Purpose: The aim of the study is to analyze the clinical symptoms, surgical approach and postoperative complications of patients with hydatid cysts of the liver in UMHATEM “N.I.Pirogov”.

Material and Methods: A total of 39 patients with a diagnosis of hydatid cyst of the liver were admitted to the hospital for a two-year period from 01.01.2019 to 01.01.2021 in the Department of General, Visceral and Emergency Surgery at UMHATEM “Pirogov”. Confirmation of diagnosis was based on history, physical examination, laboratory results, ultrasound and CT. Of those hospitalized women were 14 (35.9%), men 25 (64.1%).

Results: Dopographically, 27 of the cases (69.23%) with liver cysts were located in the right lobe and 12 (30.77%) of them in the left lobe of the liver. The diameter of the cysts varied from 7 cm-35 cm. There were two groups of patients. With multiple cyst were 29 (74.36%) of the cases, while the group of the single cyst were 10 (25.64%). The operating time varied between 49 and 135 minutes (average 57.4 minutes). The hospital stay ranged from 4 days to 9 days (average 7.1 days).

Conclusion: The surgical approach of hydatid liver cyst with the appropriate election of the different therapy opportunities according to the size, number, and location of cysts in the liver, combined with medical therapy, remains the favorable solution.

Keywords: hydatid cyst, liver, surgery, approach, complications,

INTRODUCTION

Echinococcosis is a zoonotic disease that occurs all over the world, especially in sheep- and cattle-raising districts [1]. Hippocrates observed hydatid disease over 2000 years ago. The disease remains endemic nowadays in Eastern Europe, Mediterranean countries, Central Asia, the Middle and Far East, South America, New Zealand and Australia. It reflects considerable economic deficiency and public health obstacles. Dogs are specific hosts for *E. granulosus* and sheep are the major intermediate host (yaks, goats, and camels). The human race is only casually infected [2]. The liver is the most frequent organ for cystic lesions in hydatid disease, followed by the lung, and brain.

The clinical manifestation of the disease is volatile. Echinococcosis may be asymptomatic for many years. The presence of the symptoms is revealed when the liver is found to be enlarged or ruptured. The most frequent of them is abdominal pain. A cystic lesion could be verified with ultrasonography and CT. Complications are mainly rupture into the biliary tract when the patient presents with cholangitis; and rupture into the peritoneal cavity, when this may lead to anaphylactic shock and acute peritonitis [3, 4].

Abdominal ultrasonography and CT are the main diagnostic methods for hydatid disease of the liver. The morphological presentation of liver hydatid cysts verified on ultrasonography and CT are classified into type I (pure fluid collection), type II (fluid collection with a split wall), type III (fluid collection with septa), type IV (hydatid cysts with a heterogeneous echo pattern) and type V (hydatid cysts with reflecting thick walls).

There are three therapeutic approaches for hepatic cystic echinococcosis: chemotherapy, surgery, and percutaneous drainage. Medical treatment of hydatid cysts with mebendazole or albendazole has been reported but the results of medical therapy only remain controversial [5]. It is useful in cases like disseminated systemic disease, inoperable patients, and prophylaxis during surgery or percutaneous treatment [6]. Percutaneous treatment has been proposed as an alternative to surgery, especially in patients who cannot or who do not want to undertake the intervention. The efficacy of this approach showed good results, but surgery remains the first-line treatment for liver hydatid cysts.

The aim of the study is to analyze the clinical symptoms, surgical approach and postoperative complications of patients with hydatid cysts of the liver in UMHATEM “N.I.Pirogov”.

MATERIAL AND METHODS

A total of 39 patients with a diagnosis of hydatid cyst of the liver were admitted to the hospital for a two-year period from 01.01.2019 to 01.01.2021 in the Department of General, Visceral and Emergency Surgery at UMHATEM “Pirogov”.

Confirmation of diagnosis was based on history, physical examination, laboratory results, ultrasound and CT.

Of those hospitalized women were 14 (35.9%), men 25 (64.1%).

Table 1. Gender distribution

gender distribution	39 (100%)
women	14 (35.9%)
men	25 (64.1%)

In this study, the parameters - age, gender, clinical symptoms, mode of treatment, morbidity, and mortality were analyzed.

The age in this retrospective analysis varied from 18 to 74 years (average 43.6 years).

Patients under 18 years old and those who had extrahepatic hydatid cysts without any involvement of the liver have been excluded from the study.

The treatment strategies used were observation, albendazole therapy, PAIR technique, modified catheterization technique, and surgery.

Patients diagnosed with hydatid cysts of the liver who were indicated for surgery underwent laparotomy with right subcostal or bilateral subcostal incision. Intact cysts were isolated with 20% hypertonic saline compresses to protect the surrounding tissues. The hydatid fluid of the cyst was aspirated with a needle to reduce the intra-cystic pressure, and the cyst was refilled with a saline solution. Cystic fluid was aspirated, opened with micro-incision, and then was evacuate the remaining fluid. The germinative membrane was removed from the cyst with forceps by widening the incision.

Data from all patients included with hydatid cyst of the liver were carefully systematized, analyzed, and summarized.

The results were summarized by tracking the morbidity up to one month after discharge.

RESULTS

Öopographically, 27 of the cases (69.23%) with liver cysts were located in the right lobe and 12 (30.77%) of them were in the left lobe of the liver.

Table 2. Liver localization

Localization	39 (100%)
Right lobe	27 (69.23%)
Left lobe	12 (30.77%)

The diameter of the cysts varied from 7 cm-35 cm.

There were two groups of patients. With multiple cyst were 29 (74.36%) of the cases, while the group of the single cyst were 10 (25.64%).

Table 3. Cyst number

Cyst number	39 (100%)
Multiple cyst	29 (74.36%)
Single cyst	10 (25.64%)

By segment localization topography patients also were divided into two groups-cases with single segment localization and others with multiple segment localization (table 4).

Table 4. Segment localization

Segment localization	39 (100%)
Single segment	8 (20.51%)
Multiple segments	31 (79.49%)

Perioperative blood loss was significantly lower in patients.

The operating time varied between 49 and 135 minutes (average 57.4 minutes).

The hospital stay ranged from 4 days to 9 days (average 7.1 days).

Three patients (7.69%) required relaparotomy. The reasons were biliary fistula and residual cavity infection. These reasons prolonged the hospital stay.

Important factors, which can provoke the frequency of relaparotomy can be surgical experience and technical difficulties.

Postoperative surgical morbidity includes 11 patients (17.95%) (Table 3).

Postoperative complications included pulmonary atelectasis, wound infection, biliary fistula, and abscess formation.

Table 5. Surgical morbidity

Surgical morbidity	11 (17.95%)
Pulmonary atelectasis	1 (2.56%)
Biliary fistula	2 (5.13%)
Wound suppuration	3 (7.69%)
Residual cavity infection	1 (2.56%)

There was operative wound suppuration (treated with VAC dressing), biliary fistula (sutured), and residual cavity infection (with lavage and drainage).

Complications also affected comorbidity. Some of the patients had arterial hypertension, diabetes, post-cerebrovascular disease status, and abnormal coagulation status.

No data on deaths. The mortality rate for all patients was 0%.

DISCUSSION

Most of the cases with liver hydatid cysts are symptomless, but some of the patients present with indefinite abdominal pain. Liver hydatid cysts may cause compression or obstruction of the biliary tract. Other patients manifested complications as intraperitoneal leakage, infection, and rupture to adjacent structures (the biliary or bronchial tract). In this study, the majority of patients had at least one symptom related to liver hydatid cyst and few patients were symptomless [7].

Leukopenia or thrombocytopenia and liver deviation utility be detected with Echinococcus infection. But they are not diagnostic keys for the verification of infection.

The initial diagnosis of a hydatid cyst of the liver based solely on clinical presentations may be difficult. The diagnosis in this study was verified by clinical manifestations, ultrasonography, CT, and serology.

From our data, we made the conclusion that the right lobe of the liver was the most common location for the hydatid cyst in our study. The right lobe of the liver is afflicted more than the left lobe because of the anatomical structure of the portal blood flow. The large volume of blood flow may provide larger entry to the oncospheres to

infect the right lobe [8].

The treatment approach is based on the types, size, and location of the cysts. Also, an important role is the status of the patient and the comorbidity. Basic approaches are systemic chemotherapy, percutaneous treatment with chemotherapy and conventional or laparoscopic surgery. Most of the studies recommend surgery as the definitive approach, as it is the direct way to remove the cysts and good postoperative results. Drainage is located to prevent biloma, abscess and biliary peritonitis [9].

The most common complications of liver hydatid cyst are rupture in the biliary tract or abdominal cavity. Intrabiliary rupture varied from 2 to 42% in different research.

CONCLUSION

The surgical approach of hydatid liver cyst with the appropriate election of the different therapy opportunities according to the size, number, and location of cysts in the liver, combined with medical therapy, remains the favorable solution. This hybrid approach is effective and decent in eradicating the infection and preventing local recurrences with a low morbidity rate.

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