

Hepatic Echinococcal Cyst: Case Report

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1. Abstract

In human infection, the first stage is the asymptomatic incubation period, during which ingested eggs release oncospheres that are able to penetrate the human intestinal wall. These oncospheres enter the portal venous system, which provides access to the liver, lungs, and various other organs. Next, the oncospheres begin cyst development [1]. According to the World Health Organization, *E. granulosus* is endemic in areas of South America, Eastern Europe, Russia, the Middle East, and China [2]. According to data from 1998 in Slovakian database there have been cases of *Echinococcus* circulating also in Slovakia [3].

2. Introduction

Alveolar echinococcosis is characterized by an asymptomatic incubation period of 5 – 15 years and the slow development of a primary tumor-like lesion which is usually located in the liver [definition by WHO [2]. Cystic echinococcosis [CE] is a helminthic disease caused by infection of the *Echinococcus granulosus* tapeworm. Upon infection with CE, cyst formation mainly occurs in the liver [70 percent] [4]. There is an importance to focus on localized lesion in liver especially in differential diagnosis of secondary metastatic mucinous tumors of colorectum and gynecological locations. According to the problematic detection by CT and MRI where the findings can be subscribes as just an non homogeneous solid cystic formation in liver. Therefore especially in patients also without endemic anamnesis and primary disease there should be echinococcal cyst in consideration because surgical treatment without sufficient preparation can be fatal. In this case report we are presenting a 36-year old patient coming for consultation of finding of non-homogenous lesion of right liver.

3. Case Report

Patient with this ultrasound finding which was mimicking clinical

subicterus of scleras. In laboratory findings hyperbilirubinaemia, elevation of hepatic markers AST, ALT. Hepatological oncomarkers all negative, renal functions physical, hypoproteemia and hypalbumenia in blood work but severely impaired hematocoagulative factors. Physical examination showed severe hepatomegalia with painful palpating but serology was negative for all types of hepatitis's. Realized CT and MRI which came to conclusion similar to ultrasound examination as large cystic tumor with solid masses partially occurring. Anamnesis for traveling to endemic localities was negative. Only her parents were breeding sheep.

First the patient was admitted to gastroenterologic clinics for stabilization of hepatic functions and supplement of hemo coagulative factors. She was treated by albendazolum. This took around 12 days inward hospitalizing and only the fact of family contact with sheep breeding lead us to serological examination for echinococcus which were not specific for the final diagnosis. During these 12 days there was severe enlargement of this cystic formation from 12 cm to 20 cm with close contact with middle hepatic vein. Therefore this finding even without clear diagnosis of EC cyst there came a conciliar decision of surgical resection.

Perioperative approach was with suspicious potential finding of echinococcal hepatic cyst. There was puncture of liver and all fluid which it contained performed in open abdomen send to cytology examination, we applied 20 percent solution of NaCl which we left for 20 minutes, then we repeated this process two more times (Figure 1 and 2).

Peroperatively ultrasound examination of liver and medial hepatic vein then we started right hemihepatectomy. After preparation of hepatoduodenal ligament and precise verification of anatomical structures we performed right hemihepatectomy. Contact with middle hepatic vein was so close that resection region wasn't clear

at histological examination and echinococcus was definitely confirmed. The only solution was to enhance the surgical treatment to advanced right hemihepatectomy. After that the peroperative histologic examination showed clear resection regions without any pathology (Figure 3).

There were no per operating complications in meaning of surgical treatment and the patient received one blood transfusion and one fresh frozen plasma.

Postoperative period was without haemorrhagia and biliar leak from resection area. There was no need to use Molecular adsorbent recirculating system (MARS) because she showed no signs of hepatic failure. The patient was discharged after 3 weeks only because she was infected by COVID but in surgical follow up her physical functions, blood work and hepatic and hemocoagulation factors came to normal.



Figure 1: Suction of the fluid from the hepatic cyst



Figure 2: Application of 20 percent solution of NaCl

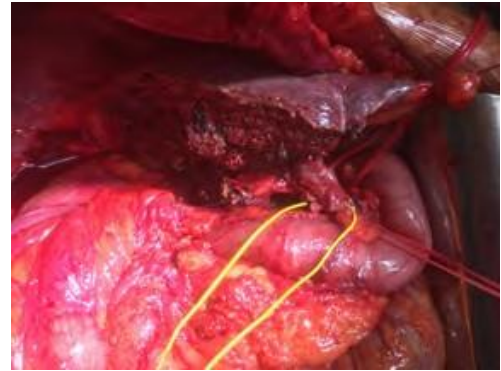


Figure 3: Advanced right hemihepatectomy

4. Discussion

First mistake was that until examination of postoperative MRI volume try showed that there was sufficient parenchyma over 32 percent with comparison of pre-operative MRI which was not even considered before operation. In resection phase during advancing right hemihepatectomy we used Pringle maneuver for 40 minutes continuously, we didn't perform repeated Pringle maneuver.

5. Conclusion

Sometimes not only ultrasound examination can't sufficiently verify echinococcus lesion and differ it from primary or secondary tumors of liver. Each benign process in liver is malignant because there is chance of liver failure, hemorrhage and multi organ failure. Therefore in fast growth of this kind of findings and necessity of surgical treatment there is necessary to approach to this kind of case that it could be echinococcus even if the diagnosis might be wrong to avoid endangering the patient.

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