

Echinococcus of the Liver Treated with Laparoscopic Hepatectomy

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Abstract

Echinococcosis or hydatid disease is endemic to many countries around the world where livestock, mainly sheep and cattle, are raised with dogs who act as the definitive hosts for the adult phase of the echinococcal tapeworm. We report a case of a man, age 22 years, who emigrated from Kyrgyzstan as a teenager, presenting with abdominal fullness and nausea and found to have a 9 cm echinococcal cyst of the liver which was successfully treated with laparoscopic hepatectomy because of a very favorable location.

Case Presentation

We report a case of a man, age 22 years, from Kyrgyzstan who presented with abdominal fullness and nausea. An ultrasound was performed and revealed a complex cystic liver mass. Computed tomography (CT) showed a large, mixed-density mass in the left lobe approximately 9 cm in size, with nondependent hypodense foci (Figure 1). His mother had mentioned another villager was diagnosed with a similar problem and was treated with surgery. Laboratory evaluation revealed no leukocytosis, normal blood count and liver enzymes. Echinococcal antibody was mildly elevated at 1.32 (positive over 1.2) and he was placed on albendazole 400mg bid preoperatively. Because of the advantageous location of the cystic mass, the patient was able to undergo laparoscopic segmental hepatectomy 4 weeks later (Figures 2 and 3). No post-operative complications were noted and the patient continued to do well 2 months after surgery.

Discussion

Echinococcosis or hydatid disease is endemic in the Mediterranean, Africa, Middle East, South America, Australia, Russia, and China where livestock, mainly sheep and cattle, are raised with dogs who act as the definitive hosts for the adult phase of the echinococcal tapeworm. Kyrgyzstan is a small, landlocked central Asian country, bordered by China, Kazakhstan, Uzbekistan, and Tajikistan with an estimated population of 5.4 million people. Kyrgyzstan has a predominantly agricultural economy, producing cotton, tobacco, wool, and meat.¹

Livestock become infected when they eat food or water contaminated with dog feces which contain the larval form of the tapeworm. Infection leads to cysts in the liver in 75% of cases followed by lung, but can involve any part of the body.² Mortality is estimated



Figure 1. Computed tomography scan of the abdomen. Multiphase computed tomography scan of the liver showing a mixed density 9 cm mass in the left hepatic lobe with extrinsic compression of adjacent stomach.

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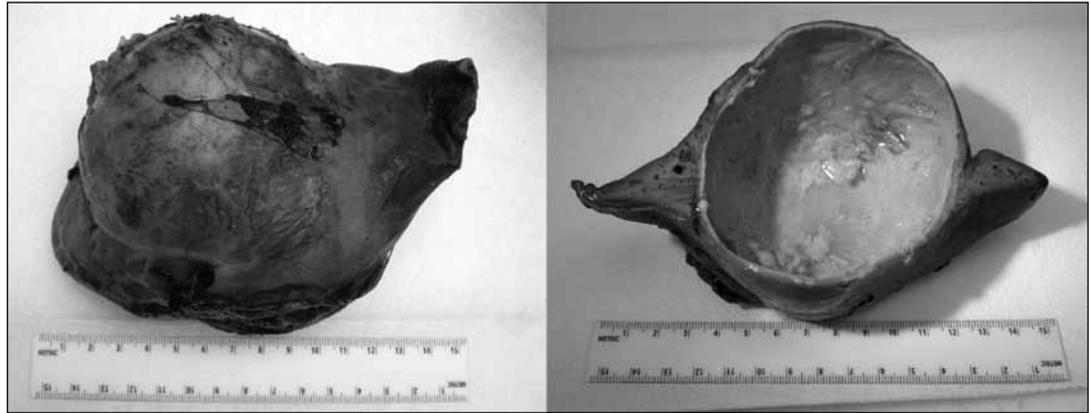


Figure 2. Gross pathology. Photo of the entire gross specimen from the laparoscopic hepatectomy on left. Photo of cross section of gross specimen with cavity cut open on right.

at 5% and sensitization can occur with systemic leakage of cysts into the bloodstream potentially leading to fatal anaphylaxis if a cyst ruptures.³ Most infections are caused by *Echinococcus granulosus* followed by *Echinococcus multilocularis*.³

Laboratory examination can rarely show a peripheral eosinophilia but usually the complete blood count is normal. Serologic testing is 84% sensitive but cannot definitively rule the diagnosis in or out.³ Imaging with ultrasound can show single or multiloculated cysts with a “snowflake or hail-storm” pattern and signs on CT include daughter cysts with a “wheel, rosette, or honeycomb-like” appearance.⁴ Treatment varies depending on the location, size of the cyst, and overall health of the patient. Surgical resection has been the treatment of choice but newer modalities through per-

cutaneous aspiration called PAIR (puncture, aspiration, injection, and re-aspiration of scolicalid solutions) show promise. Patients treated with PAIR usually receive oral medication (albendazole or mebendazole) for 7 days before and 28 days after aspiration to help decrease the risk of recurrence.⁵ Surgical options include total pericystectomy, partial hepatectomy, and lobectomy, and can be complicated by bleeding, bile leak from the residual cavity, biliary fistula, or cholangitis. Endoscopic retrograde cholangiopancreatography (ERCP) is employed to mainly assist in postoperative management of these complications. Fortunately, the location of the cyst in our patient made it feasible to perform minimally invasive laparoscopic resection of his lesion. ❖

Disclosure Statement

The author(s) have no conflicts of interest to disclose.

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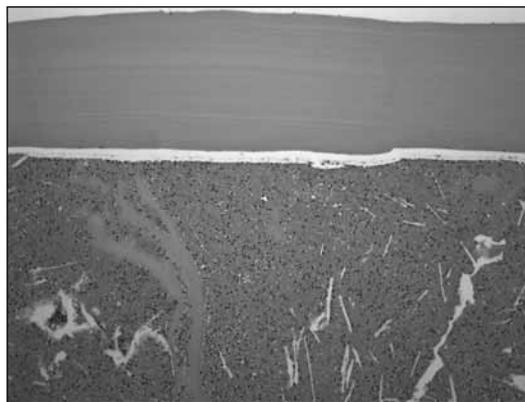


Figure 3. Histology. High-power image of pink acellular lamellar cyst wall surrounding necrotic debris with lymphocytes.