ISSN: 2279 - 0594

Journal of Biomedical and Pharmaceutical Research

Available Online at www.jbpr.in

CODEN: - JBPRAU (Source: - American Chemical Society)

Index Copernicus Value: 63.24

PubMed (National Library of Medicine): ID: (101671502)

Volume 6, Issue 1: January-February: 2017, 46-49

CASE REPORT

"A Large Incidentally-Diagnosed Left-Lobed Hepatic Hydatid Cyst in a Young Male Patient"

Samantha Mc Kenzie Stancu MD [1], Bogdan Aurelian Popescu MD, PhD [3], Sorin Olteanu MD[2]

[1] "Carol Davila" University of Medicine & Pharmacy 37 Dionisie Lupu Street, District 1, Bucharest, Romania 020021

[2] Medicover Hospital Bucharest 8 Pechea Street, District 1, Bucharest, Romania 013982

Received 10 Dec. 2016; Accepted 16 Jan. 2017

ABSTRACT

Introduction: Despite modern healthcare facilities, hydatid disease (HD) remains a perpetuating public health problem in endemic countries. Infection with *Echinococcus* may have a diverse clinical evolution, leading even to hepatic transplantation in the case of unresectable cysts. The current therapeutic options comprise conservative management with antiparasitic drugs, percutaneous drainage and surgical excision.

Case description: We present the case of I.D., a 28 year-old male who was admitted for cephalalgia, vertigo and localized tenderness in the right hypochondrium. Physical examination revealed an enlarged cranio-caudal diameter of the liver, with pain elicited upon palpation. Laboratory results showed slightly elevated alanine aminotransferase (ALT) (46 U/L) and hypercholesterolemia (268 mg/dl). The patient was booked for cerebral and abdominal magnetic resonance imaging (MRI). A class CE III hepatic hydatid cyst with dimensions of 8.7/8 centimeters located in the second and third Couinaud segments of the left hepatic lobe was diagnosed incidentally and confirmed with serology (Anti-Echinococcus IgG antibodies value of 29 U/L). The patient underwent radical surgical excision followed by an uneventful recovery.

Discussion: Among the various therapeutic approaches available, radical surgical removal has the lowest rate of recurrence and complications. This case demonstrates, that in endemic countries, physicians should have a higher index of suspicion of HD in patients with right hypochondrial pain, hepatomegaly and raised ALT.

Keywords: hydat id cyst, hepatic, liver, Echinococcus, cystectomy, radical surgical treatment

INTRODUCTION:

Hydat id disease (HD) or *Echinococcosis* is a parasitic zoonotic disease caused by infection with a member of the *Echinococcus* genus, most frequently *E. granulosus* and *E. multilocularis* [1]. The definitive hosts of this parasitic infection are dogs, foxes, sheep and goats, while humans serve as intermediate hosts [2]. This disease remains a threat to public health, even with modern healthcare facilities. Despite having a worldwide prevalence, the endemic distribution is most prominent in underdeveloped countries and in rural areas with livestock [3].

Although *Echinococcus* can settle in any organ, it has a strong predilection for the liver, which is affected in 70-80% of cases [4]. Extrahepatic dissemination, as a result of expansion and infiltration, is a feature in 34% of infections. Distant metastases are also not uncommon in the lungs and brain [5,6]. Clinical symptoms appear due to the characteristic of growth that resembles a slowly-growing solid malignancy, by exerting pressure on adjacent organs [1]. Symptomatology is site-specific; hepatic disease presents with right hypochondrial or epigastric pain, hepatomegaly, jaundice, nausea and vomiting, dyspepsia, fatigue and weight loss [7].

Hydatid disease can demonstrate a variety of imaging features according to the affected organ and stage of disease. These include ultrasonography (USG), computed tomography (CT) and magnetic resonance imaging (MRI). The best imaging technique depends on the features of the cyst; USG can clearly demonstrate daughter cysts and floating particles such as hydatid sand and membranes, CT is best suited for detecting calcification, while MRI detects dissemination most proficiently [8]. Confirmation of HD is done by serology; anti-Echinococcal antibodies are detected

*Corresponding author: Samantha Mc Kenzie Stancu MD | E-mail: samantha.mckenzie730@gmail.com

by Enzyme Linked Immunosorbent Assay (ELISA) [7].

There are numerous complications associated with HD: rupture into the peritoneum and biliary tree resulting in anaphylactic shock and biliary peritonitis, respectively recurent cholangitis, secondary biliary cirrhosis, transformation into an abscess, calcification, sclerosing Odditis, pancreatitis, portal vein thrombosis and even death [9–13].

The current therapeutic options comprise conservative management with antiparasitic drugs, percutaneous drainage (PAIR: puncture, aspiration, injection, re-aspiration) and surgical excision, encompassing cystectomy, pericystectomy, partial hepatectomy and hepatic transplantation [2,4,5,14].

CASE REPORT

A 28 year-old male paper factory worker presented with cephalalgia, vertigo and localized tenderness in the right hypochondrium. The patient was stable and afebrile (blood pressure: 118/76 mmHg, pulse: 65 beats per minute, temperature: 37.1°C). Abdominal examination was notable for localized pain in the right hypochondrium, exacerbated upon palpation. Peritoneal signs were absent. The patient's personal pathological history consisted of an appendectomy at age 13.

Laboratory results showed slightly elevated alanine aminotransferase (ALT) (46 U/L) and hypercholesterolemia (268 mg/dl). The patient was booked for cerebral and abdominal magnetic resonance imaging (MRI). The cerebral MRI exhibited thrombosis of the cavernous sinuses. As a result, the patient was started on Apixaban (Eliquis) and 5000 IU/day of Dalteparin (Fragmin). Abdominal MRI revealed an increased cranio-caudal dimension of the liver: 18.5 centimeters (cm) and a circumscribed, multilocular cystic mass in the second and third Couinaud segments of the left hepatic lobe with dimensions of 10.2/6.2 cm (**Figure 1 and Figure 2**).

In order to confirm the diagnosis of a hydatid cyst, Anti-*Echinococcus* IgG antibodies were dosed via ELISA, yielding a value of 29 U/L, hence confirming the diagnosis. Albendazole was commenced 4 days prior to surgery at a dose of 15 mg/kg/day.

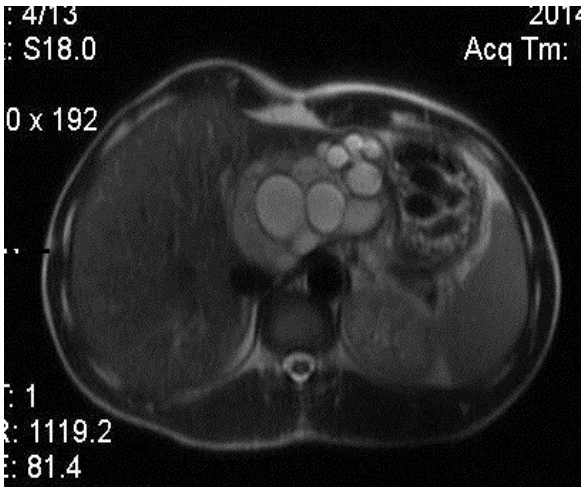

Figure 1: Transverse section of the multilocular cystic mass in the left hepatic lobe

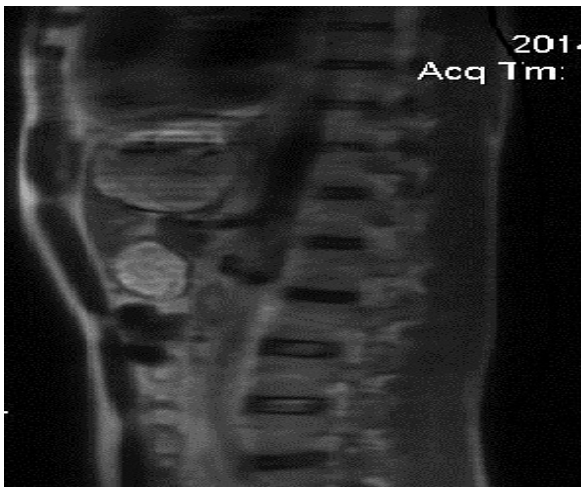

Figure 2: Sagittal section of the multilocular cystic mass in the left hepatic lobe

The general surgical team on-call was paged to decide on further management. Taking into account the large dimensions of the cyst (10.2/6.2 cm) and the presence of daughter cysts, the surgical team recommended a cystectomy.

Entrance into the peritoneal cavity was gained through a xipho-umbilical incision. A voluminous cystic mass was visualized as occupying the entire left hepatic lobe, and being adherent to the left suprahepatic vein, the lesser gastric curvature, as well as the left hemidiaphragm. After excising the adherences from the patient's appendectomy, the entire cyst was resected (**Figure 3**), without surrounding hepatic parenchyma and the left suprahepatic vein was sutured, as depicted in **Figure 4**.

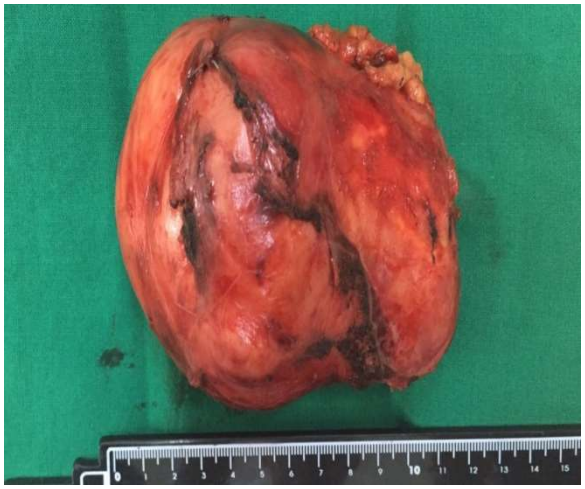

Figure 3: Hydatid cyst specimen with dimensions of 12/8 cm

Figure 4: Suturing of the left suprahepatic vein following resection of the cyst

The operative time was 160 minutes, without intra or postoperative complications. Our patient's postoperative recovery was uneventful. Oral feeding was resumed on the first postoperative day, while intestinal transit was resumed for gas and feces on the third and fourth postoperative days, respectively. The drainage tubes, which contained minimal serosanguinous fluid, were removed on the third postoperative day and the patient was discharged on the fifth postoperative day. Histopathological analysis consisted of a cuticle covering the cyst and a pericyst composed of dense connective tissue with a chronic inflammatory infiltrate.

DISCUSSION

Hydatid disease was diagnosed incidentally in this patient, as part of the work-up in the emergency room. The patient's symptomatology was vague for HD, despite the large dimensions of the cyst (12/8 cm). The particularities of this case were a lack of eosinophilia, an atypical localization (in the left hepatic lobe) and the lack of patient exposure to livestock.

Despite the numerous therapeutic approaches available for HD, radical surgical excision has the lowest rate of recurrence and complications [4,15–17]. Hydatidosis is not a self-limiting disease, instead it is associated with numerous complications, especially hepatobiliary. Frei et al. conducted a retrospective analysis in which all patients with HD were included over a three-year period. Twenty-eight percent of patients developed long-term hepatobiliary complications, 47% of whom died within three years of diagnosis[10].

In the case of unresectable cysts, hepatic transplantation is a feasible option, as demonstrated by Patkowski et al., who carried out a retrospective study on 44 patients and obtained a complication rate of 27.3% , without any recurrence [14].

In our case, HD was not considered as a differential diagnosis in this young male with hepatomegaly and elevated ALT. To conclude, this case demonstrates, that in endemic countries, physicians should have a higher index of suspicion of HD in patients with right hypochondrial pain, hepatomegaly and raised ALT.

REFERENCES

1. Gottstein B, Stojkovic M, Vuitton DA, Millon L, Marcinkute A, Deplazes P. Threat of alveolar echinococcosis to public health - a challenge for Europe. Trends Parasitol 2015;31(9):407–12.http://dx.doi.org/10.1016/j.pt.2015.06.001
2. Gomez i Gavara C, López-Andújar R, Belda Ibáñez T, Ramia Ángel JM, Moya Herraiz Á, Orbis Castellanos F, et al. Review of the treatment of liver hydatid cysts. World J Gastroenterol. 2015;21(1):124–31.DOI: 10.3748/wjg.v21.i1.124
3. Jenkins DJ, Romig T, Thompson RCA. Emergence/re-emergence of Echinococcus spp. - A global update. Int J Parasitol. 2005;35(11-12):1205–19.doi:10.1016/j.ijpara.2005.07.014

4. Busto Bea V, Barrio Andrés J, Almohalla Álvarez C. Liver hydatid disease: Still a problem. Med Clínica 2016;146(8):367–71.
5. Nunnari G, Pinzone MR, Gruttadauria S, Celesia BM, Madeddu G, Malaguarnera G, et al. Hepatic echinococcosis: Clinical and therapeutic aspects. World J Gastroenterol. 2012;18(13):1448–58.doi:10.3748/wjg.v18.i13.1448
6. Akyildiz H, Akcan A, Karahan I, Kucuk K, Sozuer E, Esin H. Recurrent liver hydatid disease: when does it become symptomatic and how does one diagnose it? Clin Imaging. 2009;33(1):55–8.doi: 10.1016/j.clinimag.2008.05.003.
7. Eckert J, Gemmell M, Meslin F, Pawlowski Z. WHO/OIE manual on echinococcosis in humans and animals: a public health problem of global concern. Paris World Organ Anim Heal. 2002;20–72.
8. Srinivas MR, Deepashri B, Lakshmeesha MT. Imaging spectrum of hydatid disease: Usual and unusual locations. 2016;81:190–205.DOI:10.12659/PJR.895649
9. Graeter T, Ehing F, Oeztuerk S, Mason RA, Haenle MM, Kratzer W, et al. Hepatobiliary complications of alveolar echinococcosis: A long-term follow-up study. World J Gastroenterol. 2015;21(16):4925–32.DOI: 10.3748/wjg.v21.i16.4925
10. Frei P, Misselwitz B, Prakash MK, Schoepfer AM, Prinz Vavricka BM, Müllhaupt B, et al. Late biliary complications in human alveolar echinococcosis are associated with high mortality. World J Gastroenterol. 2014;20(19):5881–8.DOI: 10.3748/wjg.v20.i19.5881
11. Hosseini M, Hedjazi A, Bahrami R. Sudden death due to anaphylactic shock in a patient with an intact hepatic hydatid cyst. Am J Forensic Med Pathol 2014;35(4):256–7. DOI: 10.1097/PAF.0000000000000128
12. Kitchens WH, Liu C, Ryan ET, Fernandez-del Castillo C. Hepatic Hydatid Cyst: A Rare Cause of Recurrent Pancreatitis. J Gastrointest Surg 2014;18(11):2057–9.DOI 10.1007/s11605-014-2630-1
13. Jha B, Lipi L, Gajendra S, Sharma R, Sachdev R. Alveolar echinococcosis with portal vein thrombosis: An unusual cause for liver transplantation. Asian Pac J Trop Med 2015;8(8):683–4.http://dx.doi.org/10.1016/j.apjtm.2015.07.014
14. Patkowski W, Kotulski M, Remiszewski P, Grąt M, Zieniewicz K, Kobryń K, et al. Alveococcosis of the liver - strategy of surgical treatment with special focus on liver transplantation. Transpl Infect Dis 2016;6–9. DOI: 10.1111/tid.12574
15. Georgiou GK, Lianos GD, Lazaros A, Harissis H V., Mangano A, Dionigi G, et al. Surgical management of hydatid liver disease. Int J Surg 2015;20:118–22.http://dx.doi.org/10.1016/j.ijsu.2015.06.058
16. Priego P, Nuno J, Lopez Hervas P, Buenadicha A, Peromingo R, Die J. Hepatic hydatidosis. Radical vs. conservative surgery: 22 years of experience. Rev Esp Enferm Dig. 2008;100:82–5.doi: 10.1007/s12262-010-0163-8
17. Gupta N, Javed A, Puri S, Jain S, Singh S, Agarwal AK. Hepatic Hydatid: PAIR, Drain or Resect? J Gastrointest Surg. 2011;15(10):1829–36. DOI 10.1007/s11605-011-1649-9