CLINICAL VIGNETTE

Hepatic Mass Complicated with Abdominal Pain and Transaminitis

Ifeoma S. Izuchukwu, M.D. and Mark Horng, M.D.

A 72- year-old Mexican American male with known diabetes mellitus and hyperlipidemia, presented with 1 week history of severe mid-epigastric pain associated with nausea, vomiting, diarrhea and fever. He reported having been to Mexico 20 days prior but did not have contact with anyone sharing similar symptoms. His nausea and vomiting had since subsided but the pain had become excruciating, triggering this emergency room visit.

Notable physical findings include normal vitals except a slight temperature of 99.4 and heart rate of 108. The abdomen exam did demonstrate hepatomegaly with exaggerated bowel sounds, and right lower quadrant tenderness with palpation. Laboratory evaluations were unremarkable except for an elevated white blood cell count of 14.8 without left shift and no eosinophilia.

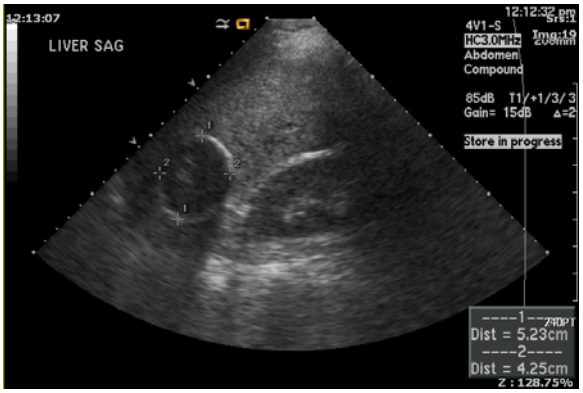

Figure 1 shows abdominal ultrasound with bladder sludge and a 5.0 by 4.6 by 4.7 cm hypoechoic structure in the right liver.

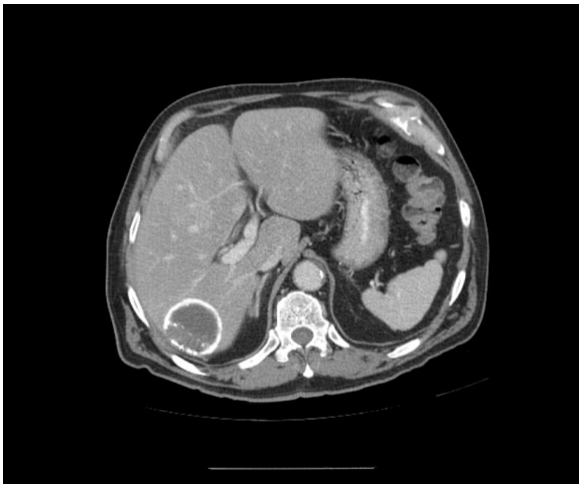

Figure 2 shows computerized tomography scan of the abdomen with a hepatic mass with an incomplete peripheral rind calcification in addition to an acutely edematous, enlarged gallbladder with sludge suggestive of acute cholecystitis.

The patient was diagnosed with both an acute cholecystitis and echinococcosis – hydatid liver disease caused by infection with echinococcus. Albendazole 400 mg twice daily was started prior to the cholecystectomy and continued for a total of 28 days with monitoring ultrasonography to document resolution.

Discussion

The patient has a typical presentation of hydatid disease in the United States. His symptoms are secondary to acute cholecystitis and the calcified hepatic mass is generally asymptomatic unless it grows to greater than 10cm. When symptoms develop as a result of the cyst, it is mostly due to rupture, mass effect or secondary bacterial infection.[1]

The hydatid liver disease is caused by an infection with echinococcus which includes six species of cyclophyllid tapeworms of the family Taeniidae. The two major species of medical and public health importance are echinococcus granulosus and echinococcus multilocularis, which cause cystic echinococcosis and alveolar echinococcosis, respectively. Both are serious and severe diseases, the latter especially so, with high fatality rates and poor prognosis if managed incorrectly[2]. Age-specific prevalence of liver and pulmonary hydatid cysts increases with advancing age, indicating that new infections continue to occur throughout life. A study in Uruguay showed an overall prevalence of 5.6 percent, increasing from 1.1 percent in those aged four to six years > 11 percent in those over the age of 60 years.[3]

Echinococcosis is a zoonotic disease that mainly occurs in sheep-grazing areas. The overall prevalence is underestimated in many series because systematic population surveys are not performed in all endemic areas. Recurrence of the disease and its diagnosis are relatively new areas of investigation due to the limited number of cases.[4] In the United States, most cases are seen in immigrants from endemic countries, but transmission does occur in certain states, including California, Arizona, New Mexico, Utah and Alaska.[1] The primary carriers are dogs and wolves. The intermediate hosts are sheep, cattle, and deer. Humans are Alternative/accidental secondary hosts and are infected by ingestion of ova from the feces of dogs.[5]

Selected Differential Diagnosis of liver cysts

Condition	*Characteristics*
Simple solitary cyst	cystic formations containing clear fluid that do not communicate with the intrahepatic biliary tree. more prevalent in women. well-demarcated water attenuation lesion that does not enhance following the administration of intravenous contrast
Polycystic disease	
Parasitic – hydatid cyst	
Neoplastic –	
Primary - Cystadenoma , cystadenocarcinoma , squamous cell carcinoma	
Secondary - Carcinoma of ovary , pancreas , colon , kidney , neuroendocrine	
False cysts	

E. granulosus infection of the liver frequently produces no symptoms as indicated above. The right lobe is affected in 60 to 85 percent of cases. E. granulosus cysts can rupture into the biliary tree and cause biliary colic, obstructive jaundice, cholangitis, or pancreatitis.

Surgery is a controversial alternative, but if needed, total pericystectomy without opening the cyst cavity, preceded by pre-operative albendazole therapy is the method of choice for hepatic hydatid cyst treatment.[6]

REFERENCES

1. **Leder K, Weller PF**. *Life cycle and epidemiology of echinococcal species*. Available from: http://www.uptodate.com/patients/content/topic.do?topicKey=~3EP3HNJmTnOuOct
2. **McManus DP, Zhang W, Li J, Bartley PB**. *Echinococcosis*. Lancet. 2003 Oct 18;362(9392):1295-304. Review. PubMed PMID: 14575976.
3. **Cohen H, Paolillo E, Bonifacino R, Botta B, Parada L, Cabrera P, Snowden K, Gasser R, Tessier R, Dibarboure L, Wen H, Allan JC, Soto de Alfaro H, Rogan MT, Craig PS**. *Human cystic echinococcosis in a Uruguayan community: a sonographic, serologic, and epidemiologic study*. Am J Trop Med Hyg. 1998 Oct;59(4):620-7. PubMed PMID: 9790441.
4. **Akyildiz HY, Akcan A, Karahan I, Kucuk C, Sözüer E, Esin H**. Recurrent liver hydatid disease: when does it become symptomatic and how does one diagnose it? Clin Imaging. 2009 Jan-Feb;33(1):55-8. PubMed PMID: 19135931.
5. **Ezer A, Nursal TZ, Moray G, Yildirim S, Karakayali F, Noyan T, Haberal M**. *Surgical treatment of liver hydatid cysts*. HPB (Oxford). 2006;8(1):38-42. PubMed PMID: 18333237; PubMed Central PMCID: PMC2131364.
6. **Busić Z, Lemac D, Stipancić I, Busić V, Cavka M, Martić K**. *Surgical treatment of liver echinococcosis--the role of laparoscopy*. Acta Chir Belg. 2006 Nov-Dec;106(6):688-91. PubMed PMID: 17290696.

Submitted on February 3, 2011