

HYDATID CYST OF THE LIVER PRESENTING AS CUTANEOUS ABSCESSSES

J. Vahedian-Ardakani, MD

Hydatid disease is a parasitic infestation of humans and herbivorous animals, caused by *Echinococcus granulosus*. Dogs and some wild carnivores, like foxes, are definitive hosts, harboring worms in their intestines. Eggs are passed in feces and eaten by intermediate hosts, and larvae encyst in the liver, lungs and other organs. A man presented with two cutaneous abscesses in the right lower part of his chest wall. Further examination disclosed a hydatid cyst measuring 91x111 mm in diameter in the lower part of the right lobe of the liver, communicating with the cutaneous abscesses. The case is reported because of its unusual presentation.

Case Report

A 40-year-old male was admitted with two reddish and tender subcutaneous masses in the right lower part of his chest wall at the posterior axillary line, which had developed slowly for one month prior to admission. He is a worker, dwelling in the rural areas of Bam, a city in Kerman province, and he had close contact with cattle and dogs. The subcutaneous masses were 8x10 and 6x7 cm in diameter, respectively, and the overlying skin was thin and inflamed (Figure 1). They were typical abscesses just about to break through the skin. Sonography disclosed an echogenic mass with echo-free areas measuring 91x111 mm in diameter in the lower part of the right lobe of the liver. Abdominal CT scan could not be performed at this time. Plain x-rays of the chest and abdomen were unremarkable. Open surgical drainage of the abscesses was attempted; they contained thick pus, whitish wrinkled cystic structures and yellowish gelatinous material.

After removing the contents of the cutaneous abscess, the floor of the abscess was explored with an index finger. No obvious communication tract was found at that time. Abscess fluid was sent for routine culture, which was negative. No Gram's stain, AFB stain, anaerobic culture or culture for mycobacterium was performed. Pathologic examination identified the cystic structures as hydatid cysts

with acute inflammation. A CT scan of the liver after abscess drainage revealed a large, round mass with a calcified rim in the lower part of the right hepatic lobe, having close contact with the cutaneous abscesses (Figure 2). The CT scan was characteristic of hydatid cyst of the liver. The cyst was surgically excised; it did not contain any fluid, but was filled with hundreds of daughter cysts and large amounts of a yellowish gelatinous material, amounting to one liter overall. A communicating tract was found between the liver cyst cavity and the cutaneous abscesses. The pathology report confirmed hydatid cyst of the liver.

Discussion

Hydatid disease is caused by the larvae of a flat tapeworm, *Echinococcus granulosus*, in humans. It is seen worldwide and is an endemic disease in some areas of the world, such as Australia and the Middle East, including Iran.¹⁻³ The life cycle of this parasite exists between carnivores and herbivores, like dogs and sheep; man is an accidental intermediate host and an end-point in the parasite's life cycle.²

Disease frequency in man depends on the presence of a definitive host, such as a dog, in his environment. The mature worm has a head and three proglottids, measuring less than 1 cm in length, and inhabits the intestines of carnivorous animals, especially dogs. The last proglottid contains about 500 eggs, passing with animal stool when the gravid proglottid is ruptured.¹ Sometimes the proglottid detaches completely from the worm. Herbivorous animals like sheep and cows become infested by eating contaminated grass. Contaminated vegetables are the culprit for human infestations. Larvae are released from eggs in the gastrointestinal tract of man and other intermediate hosts, passing through the intestinal wall, and reaching the portal vein. Thus, the liver is the first and most common site of the disease. Some larvae may even pass into the lungs, reach the left side of the heart and the systemic circulation, and then they may lodge in any tissue except hair, nails and teeth.⁵ The life cycle of the parasite becomes complete when carnivorous animals eat infested offal.

From the Department of Surgery, Bahonar Hospital, Kerman.

Address reprint requests and correspondence to Dr. Vahedian-Ardakani, Assistant Professor of Surgery, Bahonar Hospital, Kerman 76137, Iran.

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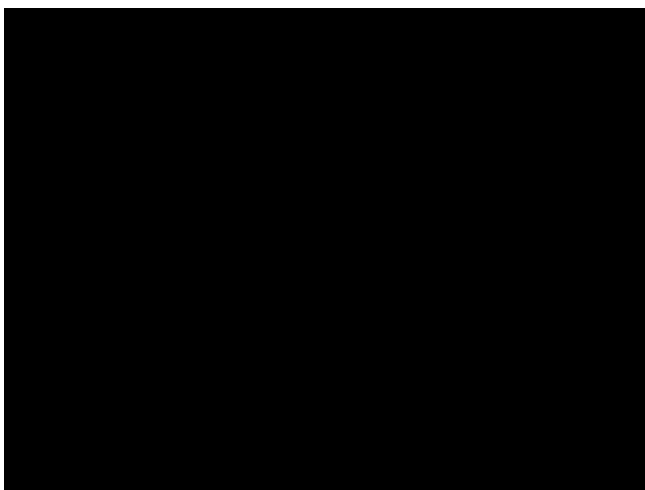


FIGURE 1. Two subcutaneous abscess cavities contained pus and daughter cysts.

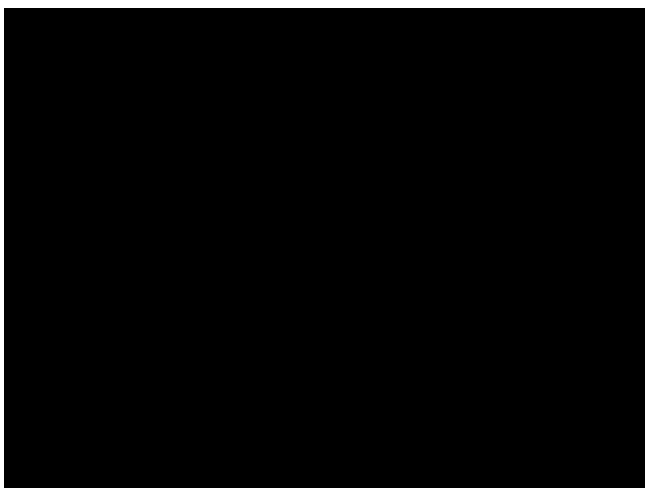


FIGURE 2. CT scan of the liver indicated a characteristic image of hydatid cyst with close contact with the cutaneous abscess.

Since the patient's liver cyst did not contain the characteristic clear fluid, but many daughter cysts, it may be concluded that the laminated membrane of the cyst ruptured some time in the past, allowing the fluid to be absorbed and turning a univesicular cyst into a multivesicular cyst. This often happens when a bile duct close to a cyst ruptures and bile enters between the pericyst and the laminated membrane, and then the latter ruptures.² Sometimes this may happen after trauma.

Two questions remain in this case: first, why the cyst contents passed through the abdominal wall and entered the subcutaneous tissue instead of passing through a bile duct and/or into the peritoneal cavity, and second, how did the laminated membrane rupture to make a multivesicular cyst? As no bile duct was found in the pericyst or any bile collection, perhaps occult (or ignored) trauma was the cause of the laminated membrane rupture. Fistulization of a hydatid cyst of the liver to the abdominal cavity, biliary system and thorax is common,^{3,4,6} but presentation of a hydatid cyst as a skin lesion has rarely been seen. Golematis et al. reported a similar case from Greece in 1991.⁷

The most common symptom in hydatid cyst of the liver is vague abdominal pain, being present in 80% of the cases.⁸ However, this patient had no such complaint. The painful cutaneous abscesses probably overshadowed any such pain, or perhaps the pain threshold is relatively high in this group of people.

After surgery of the liver cyst, the cavity was drained through the subcutaneous cavity. Moderate amounts of a colorless discharge was present for several days, then stopped, and the drain was removed. The patient was discharged in good condition, and he was given a prescription for albendazole 10 mg/kg daily. Seven and one-half months following surgery, the patient was well and symptom-free.

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