Primary abdominal wall hydatid cyst: a case report

Volkan Erikci, Münevver Hoşgör, Nail Aksoy

Department of Pediatric Surgery, Dr. Behçet Uz Children's Hospital, İzmir, Turkey.
E-mail: verikci@yahoo.com

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Hydatid disease is endemic in our country. A case of a 13-year-old girl with primary intermuscular hydatid cyst in the abdominal wall without other organ involvement is presented and discussed. At laparotomy, the entire endocyst, seen to push the peritoneum inwards, was totally extracted from the abdominal muscle planes without destroying the cyst wall. The postoperative course was uneventful. She is currently disease-free with a follow-up of two years. Hydatid cyst should be considered in endemic areas in patients presenting with a soft tissue mass in the abdominal wall.

Key words: hydatid cyst, abdominal wall, intermuscular.

Human hydatid disease is a parasitic infestation caused by the larvae of *Echinococcus granulosus*. It continues to be endemic in the Mediterranean countries and Middle East. The annual incidence in Turkey is 12 per 100,000[1]. In contrast to adults, in which the liver is the most frequently involved organ (52%-77%) followed by the lungs (10%-40%), hydatid disease in children is found in the lungs in 64% and in the liver in 28%[2-5]. Primary skeletal muscle hydatid disease without any other organ involvement is rare even in endemic districts, as the presence of lactic acid creates an unfavorable milieu for growth[6,7].

The primary infection with *E. granulosus* is believed to occur during childhood. The annual growth rate of the cyst is usually about 1-3 cm in diameter[8]. Thus, the clinical symptomatology does not become apparent until several years after infestation. Herein, a case of a primary intermuscular hydatid cyst in the abdominal wall without any other organ involvement is presented and discussed.

Case Report

A 13-year-old girl who was living in a rural area had experienced intermittent abdominal pain for one year. Upon the increasing intensity of the pain over the last three weeks, the patient was hospitalized with a diagnosis of abdominal mass, and a surgical intervention was planned. The patient was admitted to our department upon her parents' demand for further examination and treatment. On the physical examination, a hard, painless and immobile mass was palpated in the right lower abdominal quadrant. There was no history of trauma, surgery or illnesses. Laboratory studies showed eosinophilia (6.3%), leukocytosis (12,700/mm^3) and an increase in the erythrocyte sedimentation rate (84 mm/h). Serological test for hydatid cyst was negative. Ultrasonography (USG) showed a 54x33 mm cystic lesion localized in the right lower lateral abdominal wall with no perfusion in Doppler USG. Computed tomography (CT) of the abdomen revealed a multi-septated mass of 80x50 mm with edema accompanying in the right lower abdominal quadrant between the external-internal oblique and transversus abdominis muscles (Fig. 1). The Pediatrics and Anesthesiology Departments were consulted. The cyst was detected between the abdominal muscle planes, pushing the peritoneum inwards (Fig. 2). The cyst had no communication with the abdominal viscera, and was totally removed without destroying the cyst wall. Hypertonic saline was applied into the cavity after aspiration of the cyst contents, and the daughter vesicles were removed totally. The histopathological

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examination was reported to be compatible with hydatid disease. Preoperatively, 10 mg/kg albendazole was given, and the subsequent radiological examinations revealed no other organ involvement. Postoperatively, the patient was placed on albendazole for three months. To the present, no echinococcosis recurrence has been detected on her clinical examination or laboratory and radiological tests.

Discussion

Hydatid disease of soft tissues is usually secondary to hepatic or lung involvement of the disease[6,9]. There are a few series from Turkey concerning children with hydatid disease and surgical management[10,11]. Primary skeletal muscle infection with *E. granulosus* accounts for 1%-4% of reported cases[12]. The low prevalence of this form of the disease may be postulated as due to physical barriers to hematogenous dissemination of the cysts by the liver and lungs. Further, the higher lactic acid concentration in skeletal muscle and contractile activity of the muscle itself may make encystment less likely[13].

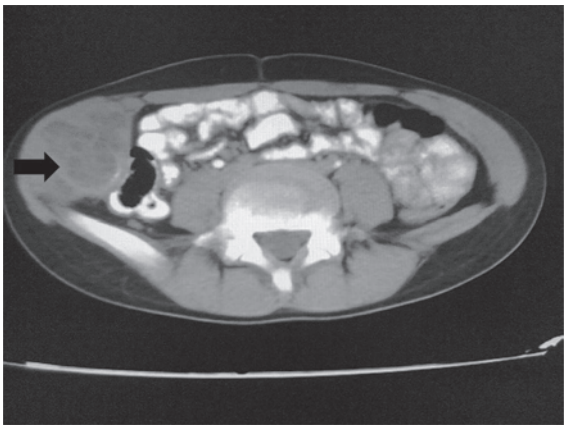

Fig. 1. CT of the abdomen revealing a multi-septated mass in the right lower abdominal wall (Arrow: multi-septated mass).

Fig. 2. Operative view of the tumor pushing the peritoneum inwards (Arrow: cystic mass).

Various pathways have been postulated in the pathogenesis of muscular localization of the cysts. About 5-15% of parasites escape filtering in the liver and lungs and enter the systemic circulation to implant in various sites, such as muscular localizations[14]. Direct implantation through a wound has also been proposed by some authors in the pathogenesis of muscle involvement.

The clinical course is nonspecific and depends on the site of involvement, cyst size and the pressure caused by the enlarged cysts. It usually presents as an inert, painless, noninflammatory mass without any deterioration in the patient's condition. Symptomatology in our patient is somewhat different, in that she experienced abdominal pain for one year. Whether or not it was related to the hydatid disease itself remains to be answered. A painless mass in the abdominal wall was detected in our patient during the late phase of the disease.

Imaging evaluation including USG and CT is useful in the diagnosis, though they are not specific. Serology may not always be helpful in diagnosing primary muscle hydatidosis. A negative test does not rule out the diagnosis of echinococcosis, as in our case. However, it is reported that 27% of patients with musculoskeletal hydatid disease had a positive indirect hemagglutination test[15]. The intradermal Casoni test previously used for the diagnosis of such cases is no longer used today[16].

The differential diagnosis must include soft tissue tumor and traumatic and developmental lesions[17]. Hydatid disease should be kept in mind to avoid performing incisional biopsy or partial excision[7]. Otherwise, the cyst fluid may produce a harmful effect in the host, including anaphylactic reaction. The treatment of choice in muscular hydatid disease is excision of the intact cyst and surrounding tissue. It is imperative to avoid inadvertent rupture of the cyst during manipulation.

This case shows that echinococcal disease should be considered in the differential diagnosis of every cystic mass in any anatomic

location, especially in areas in which the disease is endemic. Due to the fact that our country is an endemic area for hydatid disease, surgical excision is a safe method of treatment and becomes a matter of necessity rather than choice in cystic masses presented in any anatomic localization.

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