

Echinococcus infestations of the semitendinosus muscle: a case report

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Introduction

Hydatid disease is endemic in many parts of the world where sheep and cattle are raised. Dogs are the principal host as well as sheep being the most common intermediate host. The parasite develops into a tapeworm in dog intestine and tapeworm eggs are then excreted in dog feces and transmitted to humans via the fecal-oral route. Ingested eggs develop into hydatid cyst in the intermediate host to complete cycle of the parasite (1).

Echinococcus infestation is the most common localized in the liver (50-70 %) and lungs (20-30 %) and rarely involves brain, heart, bones or in other organs of human beings (1,2). Up till now, the infestations have been reported very few in skeletal muscles. It has been suggested that muscle provides a poor environment for the parasite because of the presence of lactic acid (1). This report which has't been presented previously, presents an unusual case of intramuscular (in the semitendinosus muscle) infestation of echinococcus, in a 32- year-old woman.

Case report

A 32-year-old female was referred to our clinic because of a painless lump on the posterior part of her right thigh. She described the lesion as a slowly expanding mass that was first noticed 8 years ago and was 2x2 cm diameter at that time. She described the lesion as a doubtful trauma. She had fever, weight-lost and sweating at night because of Brucellosis with titer of 1/80 in standard tube agglutination test and medical therapy was administered (rifampycine, doxycycline, streptomycine).

A physical examination revealed a lesion with 13x8 cm firm non-tender, smooth borders in the region of hamstrings muscles. It appeared to be slightly cystic, but no clear fluctuant area was detected. The overlying skin was mobile, but the lump appeared to be fixed to the underlying tissues (hamstring muscles). There was no erythema,

ecchymosis, increased warmth or lymphadenopathy and compression sings of ischiadic nerve. The rest of the physical examination was normal. Complete blood count, electrolytes alkaline phosphatase and bilirubin were all within normal limits and there was no eosinophilia except for moderate height of erythrocyte sedimentation rate (ESR) (42 mm/ 0.5 h, 75mm/1 h). Roentgenograms of the right thigh revealed a soft tissue mass in the region of the hamstrings muscles. A noncontrast computed tomogram (CT) revealed 10x8x8 cm mass with in the right semitendinosus muscles. The mass was confined within the semitendinosus muscles with no other muscles and bony involvement (Figure 1,2,3). Considering clinical, roentgenographic and laboratory data, the mass was believed most likely to simulate a soft tissue tumor or abscess.

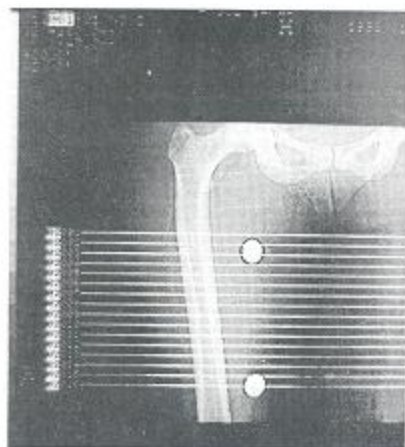


Figure 1. Direct CT in image of right lower extremity. Note the bulging mass on the thigh.

At the operation, the mass was firm and 10x8x8 cm size. There was no clear cleavage between the mass and semitendinosus muscle, but dissection from the overlying skin was easily performed. While the mass dissection was being performed, suddenly the wall of cyst was ruptured,

and pearl-like cysts began to exude into to wound cavity. The peroperative diagnosis was hydatid cyst because of these pearl-like cysts (Figure 4,5).

Histologically, the wall of the cyst was covered by fibrous tissue plentiful of eosinophil leucocytes. Ectocyst was seen in the lumen of the cyst (laminated wall) and the pathologic diagnosis was hydatid disease (Figure 6,7).



Figure 2. Cross section CT image of the right thigh showing cystic tumor-hydatid cyst.



Figure 3. Another cross section CT image of the right thigh showing cystic tumor-hydatid cyst.



Figure 4. Pearl-like cysts were showed when the wall of cysts was ruptured.



Figure 5. Macroscopic appearance of daughter-cyst filled with clear fluid.

The cyst and its contents (cyst fluid and secondary layers of the cyst) were resected as much as possible and the remaining cavity was washed several times with saline 30% and povidone iodine solution, respectively. Suction

drain wasn't used and early complication wasn't seen postoperatively. The patient was screened for hydatosis elsewhere in the body, but there was no pathology. Oral albendazol 10 mg/kg body weight was given postoperatively for 8 weeks and the patient's wound improved uneventfully. The patient was asymptomatic six months after treatment.

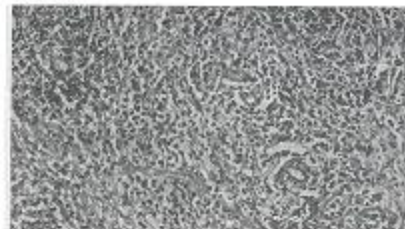


Figure 6. Inflammatory granulation tissue rich from eosinophil leucocytes (hematoxyline eosin stain, original magnification x 100).

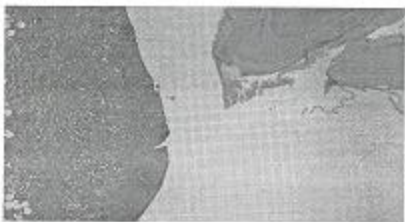


Figure 7. The wall of the cyst o right laminated wall on left are seen (HE stain original magnification x 10).

Discussion

The hydatid cysts of *E. granulosus* tend to form in the liver (50-70% patients) and lungs (20-30%) but it may be found in any organ or region of the body, including brain, breast and bones (<10%) (2).

Among these, musculoskeletal involvement and especially primary muscle hydatosis is extremely rare. If the world literature is reviewed the occurred primary muscular hydatosis will be seen under 30 cases. Some of these localized in the internal oblique, external oblique, psoas, neck, sternomastoid, biceps brachii, intercostal, pectoralis major, diaphragm, adductor muscles, and also in hamstring compartment muscles, etc (3,4,5). Hydatid cysts of the semitendinosus muscle haven't been reported previously and it can be accented that this is the first sample report of such cases to be published.

Preoperative recognition of this rare entity is clearly difficult, particularly since all of the clinical signs of acute inflammation are absent (1).

Other than the liver and lungs, the preoperative diagnosis of echinococcosis in unusual localization can be more difficult, owing to the fact that it does not readily come to mind. Almost all of these cases were diagnosed at operation (3). In diagnosis clinical findings, laboratory (serologic tests such as hemagglutinin and counterimmunoelectrophoresis-CIEP) and, roentgenogram, ultrasonography, CT scan, MRI and Casoni skin tests can be helpful.

E. Granulosus infestations are best treated with complete excision of the intact cyst. It may be impossible to excise a large cyst enblockly in which the cysts are drained intraoperatively, irrigated with a scolocidal agent such as hypertonic saline (1,2). Accidental rupture of the cyst during surgery should be regarded as a serious event and measures should be taken to lessen the risk of complications. Intraoperative cyst rupture requires immediate intravenous administration of 200 mg hydrocortisone as prophylaxis against a possible anaphylactic reaction (4).

Percutaneous needle biopsy is also not recommended because of the possibility of introducing scoleces into the needle tract (1).

In conclusion, the skeletal muscle *Echinococcus* infestations are very important because of the difficulty in diagnosis and risk of recurrence and dissemination, anaphylactic reaction in the course of surgical resection, and although skeletal muscular hydatid cyst is very rare, it should be taken into consideration as one of differential diagnosis of any slowly growing benign tumors.

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