CASE REPORT

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Hydatid Cyst in Adductor Magnus- A Very Rare Presentation of Hydatid Disease

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ABSTRACT

Hydatid disease, caused by *Echinococcus granulosus*, predominantly affects the liver and lungs, with intramuscular involvement being exceptionally rare, even in endemic regions. Accurate diagnosis relies on radiological imaging, as serological tests often yield false-negative results, though a positive result can support confirmation. Biopsy and marginal excision are contraindicated due to the risk of dissemination and anaphylactic shock. Therefore, in endemic regions, hydatid cyst should be considered a differential diagnosis in cases of isolated musculoskeletal swelling to prevent complications. We present a case of a middle-aged female with a history of swelling in the upper medial right thigh. Radiological imaging and serology confirmed a hydatid cyst within the adductor magnus muscle. The patient was successfully managed with albendazole and pericystectomy.

Keywords: *Albendazole; Echinococcus granulosus; Muscles*

INTRODUCTION

Echinococcus granulosus is the most common species causing hydatid disease which is parasitic infestation of tapeworm from Taeniidae family. Most Echinococcus; especially the larval stage causes cysts in dogs, wolves, and foxes and it may occur in the intermediate host such as sheep, goats, and cattle. Humans are incidental hosts which may occur by consumption of food and water contaminated with Echinococcus eggs. The highest incidence of hydatid disease is found in the Middle East, Central Europe, Australia, and the Mediterranean basin where livestock breeding is rampant. Hydatid disease can occur in any organ of humans and commonly occurs in the liver (55-70%) followed by the lungs (18-35%) and both are affected in 5-13% of patients.[1,2,3,4]

Hydatid cysts in muscle are very rare and account for only 1-5% of all hydatid cyst cases. Most muscular hydatid cysts are secondary and are caused by the migration of larvae from the primary site after spontaneous, trauma-induced rupture or iatrogenic release of parasite material during invasive treatment. Here we present a case of primary musculoskeletal hydatid cyst in adductor magnus muscle which is extremely rare even in endemic regions. Although a muscular hydatid cyst is rare, we should consider it in

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the differential diagnosis if the patient presents with isolated muscle swelling in the endemic region and imaging findings are pathognomonic. The differential for isolated soft tissue swelling includes abscess, hematoma, and muscle mass.[1,3,4,5]

CASE REPORT

A young female came to the hospital with a complaint of pain and swelling on the medial side of her thigh. Complete blood count and biochemical test revealed no abnormal finding except ELISA test for hydatid disease which was positive. Her past medical history was insignificant. She was advised for ultrasonography which showed a multilocular cyst in the adductor magnus muscle with no internal vascularity, perilesional edema, or internal solid component as shown in Figure 1. Based on imaging findings diagnosis of hydatid cyst was made. She was treated with albendazole for a week and was referred to the surgical department for en-block resection.

Figure 1: *Well defined round to oval shaped cyst in intramuscular plane with daughter cysts at periphery-findings suggestive of hydatid cyst*

DISCUSSION

Hydatid cyst is a parasitic disease caused by Echinococcus granulosus in 99% of cases and Echinococcus multilocularis in 1% of cases. Hydatid disease is seen globally but southern Europe, Asia, Australia, Africa, and the Middle East are highly endemic regions. Carnivores such as dogs, wolves, and foxes are the definitive hosts and humans are considered incidental intermediate hosts. Muscular hydatid cysts are extremely rare due to muscle contractility, the presence of lactic acid within the muscle, and the barrier action of liver sinusoids and the lungs. When imaging reveals a muscular hydatid cyst, other organs, particularly the liver and lungs, should be screened for cystic lesions. Although the pathogenesis of intramuscular hydatid cysts is not clearly understood, it may occur due to direct implantation, such as from a dog bite, spread from the systemic circulation, or possibly due to iatrogenic contamination during surgery. The most common sites for musculoskeletal hydatid cysts are the pelvis, thigh, and paravertebral musculature. Some authors believe that muscular cysts may result from the spontaneous resolution of hepatic cysts, but systemic diffusion of the parasite and positive serological examination are also factors.[1,2,3,4,5]

In our case, the diagnosis was made with the help of ultrasonography and the ELISA test. CT and MRI have better sensitivity and specificity than ultrasonography due to their superior ability to document the size and structure of the cyst. However, ultrasonography is primarily used for diagnosis because it is widely available, non-invasive, inexpensive, and repeatable. The most characteristic feature of hydatid disease seen on ultrasonography is the daughter cyst and the separated membrane with the double-line sign. Confirming the diagnosis is crucial, as it contraindicates certain treatment options, such as marginal excision and incisional biopsy, which may cause dissemination and anaphylactic shock upon spillage.[1,3,4]

CONCLUSION

In cases of isolated muscular swelling, hydatid cysts should be considered as a differential diagnosis, especially in endemic regions, and proper investigations should be conducted to confirm or exclude the condition. Primary musculoskeletal hydatid cysts are rare, necessitating thorough evaluation to rule out involvement of other organs, particularly the lungs and liver. Ultrasound (USG) and serological tests such as ELISA are commonly used as primary diagnostic modalities for hydatid disease. Pre-treatment with albendazole is generally recommended to reduce the risk of recurrence and minimize the chances of anaphylactic shock during surgery.

CONFLICT OF INTEREST

None

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