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Primary Intramuscular Hydatid Cyst of the Thigh Mimicking a Soft Tissue Tumor: A Case Report

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Abstract | **Case Report**

Background: Primary intramuscular hydatid cyst of the thigh is an exceptionally rare manifestation of echinococcosis and may mimic a soft-tissue tumor, making diagnosis challenging. ***Case Presentation:*** A 66-year-old man presented with an eight-month history of a slowly enlarging, slightly painful mass of the left thigh. MRI revealed a well-defined multiloculated intramuscular cystic lesion containing multiple daughter cysts, suggestive of a hydatid cyst. No hepatic or pulmonary involvement was identified, and hydatid serology was negative. The patient underwent complete en bloc excision without cyst rupture. Histopathological examination confirmed the diagnosis. Postoperative albendazole was administered for three months. At six-month follow-up, the patient remained asymptomatic, with no evidence of recurrence. ***Discussion:*** Although rare, primary intramuscular hydatid cyst should be considered in the differential diagnosis of cystic soft-tissue masses, particularly in endemic areas. MRI is the imaging modality of choice, while complete surgical excision without cyst rupture, combined with adjuvant albendazole therapy, provides excellent outcomes and minimizes the risk of recurrence.

Keywords: Hydatid cyst; Echinococcosis; Intramuscular hydatid cyst; Thigh; Soft-tissue mass; Magnetic resonance imaging; Surgical excision.

INTRODUCTION

Hydatid disease [echinococcosis], caused by the larval stage of Echinococcus granulosus, most commonly affects the liver and lungs. Musculoskeletal involvement is rare, accounting for less than 5% of cases, [1] primary intramuscular hydatid cysts of the thigh are exceptionally uncommon. This rarity is attributed to the hostile muscular environment, including rich vascularization, continuous muscle contractions, and high lactic acid levels, which hinder parasite implantation and survival. [2] Owing to its unusual presentation, a hydatid cyst of the thigh may mimic a soft tissue tumor, making diagnosis challenging. [3] We report a rare case of a primary intramuscular hydatid cyst of the thigh and discuss its diagnostic and therapeutic management.

CASE PRESENTATION

A 66-year-old man presented to our department with a slowly enlarging, slightly painful soft-tissue mass of the left thigh that had progressively increased in size over the previous eight months. [Figure 1]. His medical history was significant for bilateral total knee arthroplasty performed four years earlier for advanced knee osteoarthritis. There was no history of trauma, fever, weight loss, or previous hydatid disease. However, the patient reported frequent contact with dogs during childhood while living in a rural area.

Physical examination revealed a well-defined, slightly tender intramuscular mass of the left thigh without overlying skin changes, inflammatory signs, or neurovascular deficits. Routine laboratory investigations were within normal limits.

Plain radiographs of the left femur showed no osseous abnormalities or periosteal reaction. Magnetic resonance imaging [MRI] demonstrated a well-circumscribed multiloculated intramuscular cystic lesion containing multiple daughter cysts, highly suggestive of a hydatid cyst [Figure 2].

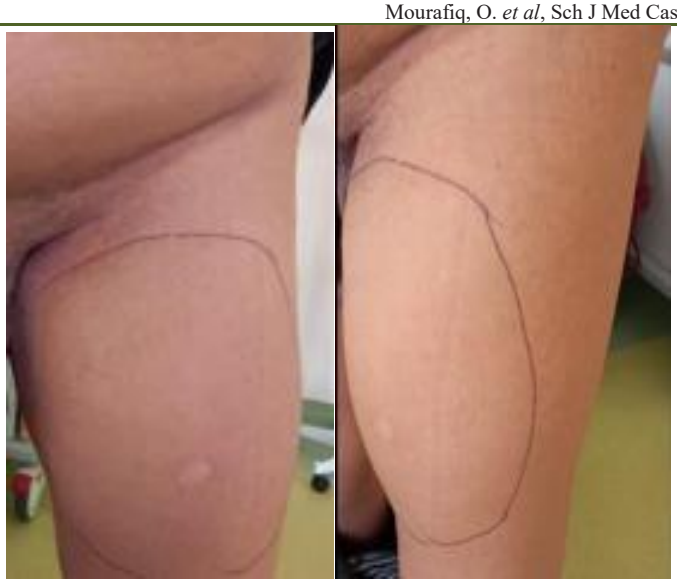

Figure 1: Preoperative clinical photograph of the left thigh showing a soft-tissue mass

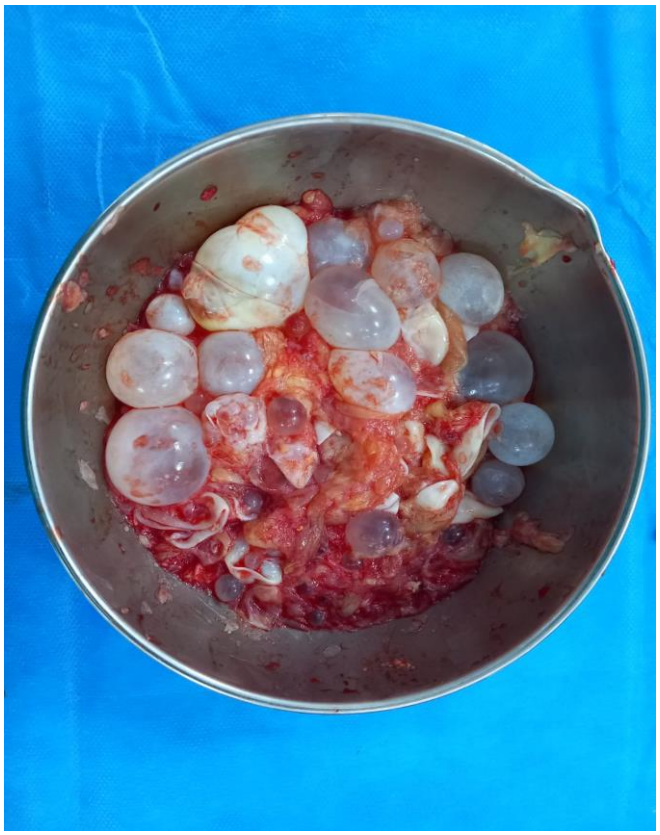

Figure 3: Macroscopic view of the excised hydatid cyst showing multiple daughter cysts

To exclude systemic involvement, chest radiography and abdominal ultrasonography were performed and showed no evidence of pulmonary or hepatic hydatid disease. Hydatid serology was negative.

The patient underwent complete en bloc surgical excision of the cyst with meticulous care to avoid intraoperative rupture and spillage [Figure 3]. The surgical cavity was irrigated with hypertonic saline as a scolicidal agent before closure. Histopathological examination confirmed the diagnosis of a hydatid cyst.

The postoperative course was uneventful. Oral albendazole [400 mg twice daily] was prescribed for three months as adjuvant therapy. At the six-month follow-up, the patient remained asymptomatic, with complete wound healing and no clinical or radiological evidence of local recurrence. [Figure 4]

Figure 4: Clinical photograph at the six-month follow-up showing complete wound healing with no evidence of local recurrence.

DISCUSSION

Primary intramuscular hydatid cyst of the thigh is an exceptionally rare manifestation of echinococcosis, accounting for only 0.5–5% of all hydatid disease cases [1]. The liver and lungs are the most commonly affected organs, while skeletal muscle involvement remains uncommon because muscle contraction, abundant vascularization, local immune defenses, and the high lactic acid concentration create an unfavorable environment for larval implantation. [4] The thigh, particularly the adductor compartment, is the most frequent peripheral muscular location. [3]

The clinical presentation is usually nonspecific, with a slowly enlarging soft-tissue mass that may remain painless for months or years. In our patient, the progressive increase in thigh swelling associated with mild pain illustrates the insidious nature of this condition. Consequently, hydatid disease should be considered in the differential diagnosis of any cystic soft-tissue mass, especially in endemic areas. Differential diagnoses include soft-tissue tumors, abscesses, pyomyositis, and chronic hematoma. [5]

Imaging is essential for diagnosis. Ultrasonography is a useful first-line examination, whereas MRI is the modality of choice because it accurately demonstrates the characteristic multiloculated cyst with daughter cysts and defines its relationship with surrounding structures. Serological tests may support the diagnosis but can be negative in isolated muscular disease. [6]

Preoperative recognition is crucial because biopsy or accidental rupture of the cyst may lead to parasite dissemination and life-threatening anaphylaxis. Therefore, complete surgical excision without cyst rupture remains the gold standard treatment. Intraoperative irrigation with hypertonic saline and postoperative albendazole therapy are recommended to reduce the risk of recurrence. [7]

The prognosis is generally excellent after complete excision combined with antiparasitic treatment, although long-term follow-up is advisable to detect possible recurrence. [8] This case highlights the importance of including hydatid disease in the differential diagnosis of slowly growing thigh masses in patients living in or originating from endemic regions, allowing appropriate surgical management and prevention of potentially serious complications.

Conflict of Interest: No conflicts of interest.

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