

# Intramuscular Hydatid Cyst: A Rare Presentation

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## Abstract

Hydatid cysts predominantly involve the liver and lung with muscle tissue being the less preferred site for primary hydatidosis. Injudicious approach in the management of these rare presentations may be the root cause of severe anaphylactic shock and systemic dissemination. We report an unusual case of primary hydatidosis of the thigh muscles in which a wide excision was performed without causing any damage to the cyst wall.

## INTRODUCTION

In recent years, human hydatid disease caused by *Echinococcus granulosus* has been recognized as a public health problem of global dimensions (<sub>1</sub>). It is found in all sheep-raising countries of the world, especially Australia, New Zealand, Tasmania, Turkey, Greece, etc. In India the highest prevalence is reported from Andhra Pradesh and Tamil Nadu (<sub>2</sub>). The parasite has a “dog-sheep” cycle with man as an intermediate accidental host. Human infection occurs by ingestion of the eggs of *Echinococcus* inadvertently with food, especially unwashed vegetables and water contaminated with faeces from infected dogs. In humans, the most favored site for infestation is the liver (65%) or the lungs (25%); it rarely involves the brain, heart, bone, or other organs (<sub>3</sub>) and primary muscular hydatid cysts comprise less than 0.5% of the cases in endemic populations (<sub>4</sub>).

## CASE HISTORY

A 20-year-old unmarried, non-vegetarian muslim girl was admitted to the department of General Surgery, King George's Medical University, Lucknow, India, with a slow-growing, painless lump in the medial aspect of the mid third of the right thigh. In the past 2 years, the patient also had on-and-off fever, with chills and rigors for one year. The girl did not complain of any other symptoms. On physical examination, there was a soft, non-tender, mobile mass (vertically larger than horizontally) with relaxed underlying musculature, of 15cm x 8cm in size at the antero-medial aspect of the right thigh (figure1).

## Figure 1

Figure 1: Cyst being excised from muscle



There were no other positive clinical findings. Routine laboratory tests were normal. The IgG-ELISA test was found to be negative; FNAC yielded clear fluid and was inconclusive. Plain radiographs showed only soft-tissue swelling with no bony destruction. Ultrasonography demonstrated a well-defined loculated intramuscular cystic lesion. Plain chest X-rays and abdominal ultrasonography did not reveal any organ involvement.

The patient was operated on with a possible diagnosis of a hydatid cyst. On exploration, a large mass with a pearly white, muscle-free wall was found within the gracilis muscle and was excised. The left over cavity was then thoroughly irrigated with 3% hypertonic saline solution for 7 minutes. Sectioning and gross examination of the cystic cavity demonstrated clear fluid with multiple daughter cysts.

**Figure 2**

Figure 2: Multiple daughter cysts in the cut open surgical specimen



Histopathological examination revealed scolices, a cyst wall and a 'germinal' layer and confirmed the diagnosis of hydatid disease. The patient was discharged on albendazole 10 mg/kg per day for 6 weeks.

## DISCUSSION

The hydatid disease parasites are members of the flat worms (cestodes). The majority of the infestations are caused by *Echinococcus granulosus* and *multilocularis* (5). The parasite may affect any organ; however, muscle is supposed to be an unfavorable site for infestation because of its high lactic acid concentration (6). Intramuscular hydatid cysts grow gradually and may mimic a soft tissue tumor (7); thus, the diagnosis of soft-tissue hydatid cysts needs a high index of suspicion.

Ultrasonography of the abdomen still remains the major noninvasive screening tool to discover the primary site of the disease and may confirm the diagnosis of hydatid disease by demonstrating the pathognomic daughter cysts (8). The CT appearance of the hydatid cyst is not diagnostic as it may mimic malignant and benign conditions such as congenital cyst, pseudocyst or hematomas (9, 10). However, the presence of daughter cysts, germinal epithelium detachment and calcification may confirm the diagnosis. Similarly, MRI can reveal a cystic mass containing daughter cysts, with rim sign and "water lily sign" (11); unfortunately, in our case, we could not get MRI done as the patient was unable to afford it.

A variety of serological tests like indirect haem-agglutination test (IHA), latex agglutination and enzyme-linked immunosorbent assay (ELISA) are used to establish

the diagnosis and postoperative follow-up of the disease with a specificity of 97 %, with IgG-ELISA being the most sensitive with a sensitivity of 83.5%. Unfortunately, the ELISA test was negative in our case (12). Similarly, eosinophilia is detected only in 50% of the patients; however, the best way to establish the diagnosis is the direct visualization of parasitic elements in the surgically resected pathological specimen.

The conventional treatment of muscular hydatid cysts is surgical; however, it may require an extensive surgical resection, and need of general anaesthesia is inevitable. Preoperative medical treatment may sterilize the cyst cavity and might decrease the intraoperative complication of spillage and consequential anaphylaxis. Intraoperative irrigation of 0.5% cetrimide, 15% hypertonic saline and 0.5% silver nitrate solution, previous to cyst opening, may kill the daughter cysts and further reduces the risk of dissemination and anaphylactic reaction. Recently, percutaneous treatment of muscular hydatid disease has been carried out with great success.

In conclusion, hydatid disease can affect any organ in the body; the infestation may mimic a soft tissue tumor and therefore, a high suspicion of this disease is justified in any cystic neoplasm of any organ.

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