



## Case Report

# A Primary Intramuscular Hydatid Cyst of the Proximal Thigh : A Rare Case Report

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### Abstract

Primary intramuscular hydatid cyst of thigh is a very rare parasitic disease caused by *Echinococcus granulosus*. We present an unusual case of primary hydatid cyst in a 21-year old male who presented with slowly growing painless lump in the anteromedial aspect of proximal right thigh. Ultrasonography of the mass revealed a multiloculated cyst in the medial compartment of right proximal thigh without detectable primary any other location. MRI clearly displayed the lesion showing cystic mass with multiple well defined daughter cysts and diagnosis of hydatid cyst was made. The patient was treated surgically and cyst was excised. Macroscopic and microscopic histopathological examination confirmed the diagnosis of muscular hydatid cyst. Primary muscular hydatidosis is kept in mind in the differential diagnosis of a cystic mass of a skeletal muscle especially in endemic areas.

**Key words:** Acute coronary syndrome, IGT, IFG, HbA<sub>1c</sub>.

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### Introduction

Hydatid disease is an infestation caused by the larval stage of *Echinococcus granulosus*. The disease is prevalent in most parts of the world, especially in sheep and cattle breeding countries in the Mediterranean region, the Middle East, Central Asia, East Africa, South America, Australia and New Zealand. Humans are incidental or accidental intermediate host for hydatid disease and become infected by ingestion of food or drink contaminated by the larvae<sup>1</sup>. Hydatidosis frequently affects the liver and lungs accounting for approximately 90% cases; other organs such as spleen, heart, brain, kidney and musculoskeletal system are affected rarely<sup>2</sup>. Musculoskeletal hydatidosis is rare accounting for only 3% of all

cases<sup>3</sup> and primary hydatidosis of skeletal muscle is extremely rare even in endemic areas<sup>4</sup>. MRI findings of muscular hydatidosis have been described in a number of case reports. Here we present a case of 21-year old male who presented with primary intramuscular hydatid cyst of proximal thigh with MRI findings, a very rare presentation.

### Case Report

A 21-year old male presented with a 6 month history of painless gradually enlarging swelling in his anteromedial aspect of proximal right thigh and was admitted to surgery department of Rajshahi Medical College Hospital. There was no history of trauma, fever or weight loss. On

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physical examination a soft non tender mass was found to be free from the skin and subcutaneous tissue and appeared to arise from the underlying muscle and fascia but not fixed to the bone. Clinically it appeared to be a soft tissue benign tumor. There was no symptom or signs of inflammation. No inguinal lymphadenopathy was found. Routine blood examination was normal. The ultrasonography of the swelling of thigh revealed a large well defined multiloculated cystic mass. Chest radiograph, abdominal ultrasonography and computed tomography (CT) of brain did not reveal any organ involvement. The patient was sent in the department of Radiology and Imaging for an MRI for exact localization, extent and characteristics of the mass. MRI of the right thigh was performed with a .3T MR system using body coil.

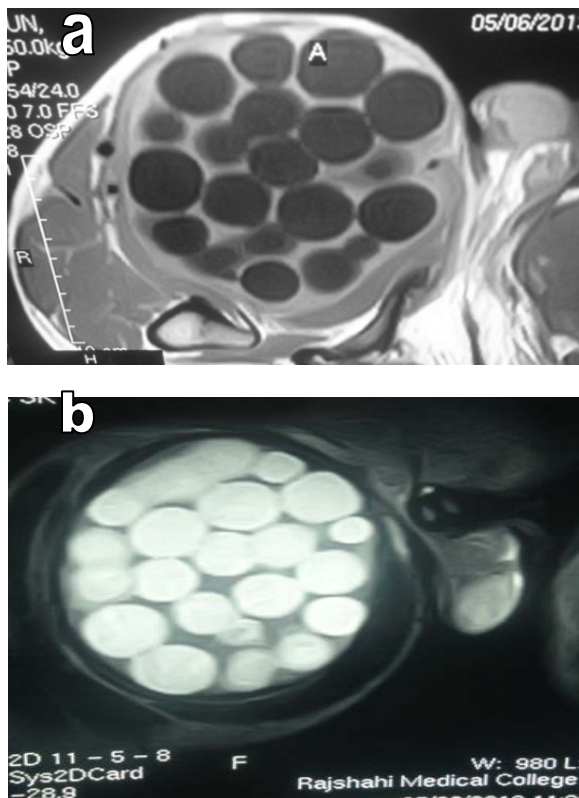


Fig-(a) Axial T1-weighted and (b) coronal T2-weighted MRI images show a well-defined cyst in the proximal thigh containing multiple daughter cysts.

Magnetic resonance imaging (MRI) revealed a well-demarcated 8.5×6×7.5-cm cystic lesion with

multiple daughter cysts located in the medial compartment of proximal right thigh. The lesion had low signal intensity on T1-weighted and high intensity on T2-weighted MRI (Figure a & b). Based on these findings a diagnosis of hydatid cyst was made. The patient was treated surgically and the lesion was excised. Multiple pearly white daughter cysts came out on incision. Macroscopic and histopathological examination established the diagnosis of hydatid cyst.

### Discussion

Hydatid cyst is an acquired zoonotic disease caused by larval stage of the tapeworm genus *Echinococcus granulosus*, *E. multilocularis* and *E. oligarthus*. More than 90% of hydatid cysts occur in the liver, lungs or both<sup>5</sup>. The liver acts as a first line of defense and mostly involved (75%) followed by involvement of the lungs (15%) which act as the second infiltration of the hydatid cyst. Haematogeneous dissemination may lead to secondary involvement of almost any anatomical location<sup>6</sup>. The Muscular hydatid cyst is usually involved as a part of dissemination from other area, either spontaneously or after previous operations for hydatidosis in other region of the body<sup>7</sup>. Primary hydatid disease of skeletal muscle is extremely rare and present in approximately 3% of the patient. Theoretically the muscle is unfavorable for echinococcal infection because of its contractility and high lactic acid<sup>2</sup>. The tropism to the muscles of the neck, trunk and root of the limbs can be explained with the increased vascularization and the decreased muscular activity<sup>7</sup>.

Muscular hydatid cyst usually presents with a long history of slowly growing lump and may mimic a soft tissue tumor producing symptoms related to pressure on the surrounding tissue<sup>8</sup>. Eosinophilia found in about 50% cases. The serological and immunological tests are not pathognomonic for hydatid disease. The diagnosis of muscular hydatid cyst can be made by clinical history and by advanced radiological techniques like USG, CT scan and MRI imaging by the characteristics appearance of unilocular or multilocular cyst multiple daughter cysts as it was seen in our case in USG and MRI<sup>9</sup>.

Ultrasonography is a noninvasive and cheap widely used primary imaging modality for soft tissue hydatid cyst. The CT appearance of hydatid cyst is sometimes not diagnostic as it may mimic malignant and benign conditions such as congenital cyst, pseudocyst or hematoma. However, the presence of daughter cysts, detached membranes and calcifications may confirm the diagnosis. The extent and characteristics of the mass were detailed with MRI. The classic MRI findings include a multivesicular cyst, a low intensity rim "rim sign" on T2-weighted images, a detached membrane or collapse membrane in the dependent part of mother cyst "Water-lily sign"<sup>10</sup>. The most pathognomic sign is that of daughter cysts. According to Dies et al. the presence of viable daughter cyst MRI conveyed high signal intensity on T2-weighted images. Hypointensity of daughter cysts compared with the matrix of mother cyst on T2-weighted images is clue for the death of the parasites<sup>11</sup>.

### Conclusion

Primary intramuscular hydatid cyst is extremely rare disease. The hydatid cyst can affect any part of the body and no site is immune. The purpose of this case report is to create a awareness that hydatid cyst should be considered in the differential diagnosis of every cystic mass in any anatomic location especially when they occur in areas where the disease is endemic. Ultrasonography is the primary imaging modality for the diagnosis of intramuscular hydatid cyst which is more clearly displayed in the MRI scan. In localization and detecting the characterization of the cyst MRI is useful in diagnosis and treatment planning. MRI may possibly also be useful in evaluating the vitality of the cyst.

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