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Primary Large Intramuscular Hydatid Cyst in the Thigh

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Abstract: *Hydatid disease is a parasitic infestation caused by Echinococcus granulosus. It occurs frequently in liver and lung. Hydatid disease of the soft tissue is uncommon. Usually, intramuscular hydatid cysts are secondary, resulting from the spread of cysts from other areas either spontaneously or after operations for hydatid cysts in other regions. We present an unusual case of a primary hydatid cyst found in the right thigh of a65-year-old male, presented witha large painless mass in theantero-lateral aspect of the right thigh for15 years. Computed tomography and magnetic resonance imaging examinations revealed multilocular intramuscular cyst in the anterior aspect of his right thigh, and no disease at any other location. The entire lesion was surgically removed, and macroscopic and microscopic histopathological examination confirmed the diagnosis of intramuscular hydatid cyst.*

Keywords: *Hydatid disease, Echinococcosis, Cyst, Thigh mass, Intramuscularcyst.*

I. Introduction

Hydatid disease is a cosmopolitan anthropozoonosis more prevalent in livestock-rearing countries (1). Resulting from the larval form of the dog tapeworm Echinococcus granulosus, hydatid cysts (HC) are most frequently found in the liver (75%) and lungs (15%) (2). Primary muscular hydatidosis is uncommon even in endemic regions (1% to 4%) (2,3).

In this report, we present a rare case of muscular hydatid disease in which preoperative diagnosis was achieved by characteristic appearance of the cyst in magnetic resonance (MR) images.

The surgery was planned considering hydatid cyst as a provisional diagnosis.

Preoperative diagnosis of hydatid disease is essential because rupture and dissemination of the cyst may result in recurrence, and intraoperative spillage of the antigenic cyst fluid may lead to severe anaphylactic response.

II. Case report

A 64old male presented with large soft tissue swelling in the lateral aspectof right thigh. The swelling was present for the last 15 years and gradually increasing in size. There was no pain in the swelling. He had no history of trauma, surgery or additional disease. On local examination, swelling was approximately 28 cm × 17 cm, not tender and soft. Complete laboratory data were normal. Plain X-rays and CT of the left femur showed no bone involvement. Ultrasound examination of the mass showed a multi- locular cyst. Computed tomography (CT) showed an intramuscular cyst on the anterior aspect of the upperright thigh with an outline delineating it from the surrounding muscles with no bone involvement (Fig. 1).

MRI revealed: A huge multi-cystic lesion measuring 28 X 16 cm exhibiting multiple parent and daughter cysts. Itoccupies anterior compartment musclesof the right thigh with extension from the right inguinal area up to mid-thigh. It involves vastus lateralis,vastus medialisand vastusintermedius muscles, accompanied with perifocal inflammatory oedema (Fig2, Fig3). On the post contrast sequence faint rim enhancement is noted (Fig4). Femur showed normal signal intensity. No abnormal medullary signal intensity was seen. No evidence of fracture, stress response or bone oedema was seen. Femoral neuro-vascular bundle and sciatic nerve appeared normal.

Figure 1: CT with contrast shows Intramuscular cyst involving the anterior and lateral aspect muscles of the right thigh.

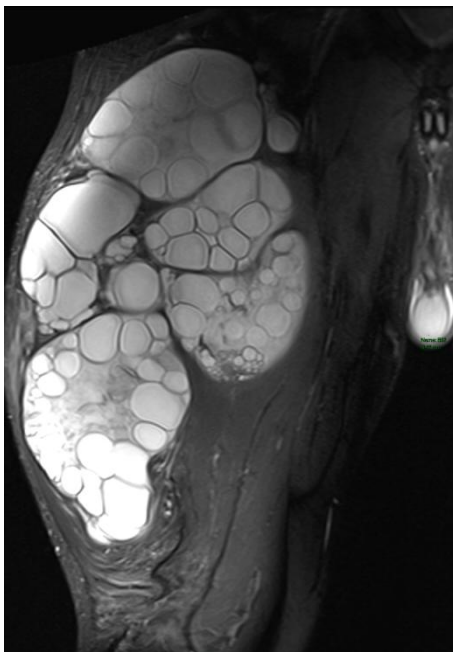

Figure 2: Coronal T2 WI with fat suppression showed large intramuscular cyst with clear exact location and good delineation associated with perifocal inflammatory oedema.

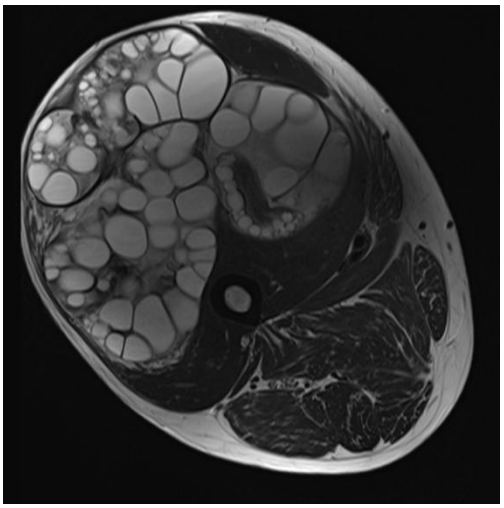

Figure 3: axial T2 MRI images with characteristic appearance of multiple daughter cysts within the mother cyst.

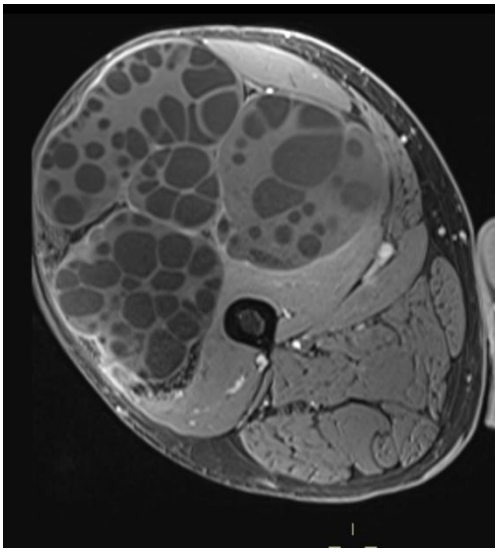

Figure 4: Axial T1 WI with fat suppression after contrast showed peripheral enhancement of the cyst wall.

Careful clinical examination, plain chest and abdominal X-rays, ultrasound, CT and MRI scans, and bone scanning revealed no other lesions.

Under general anaesthesiathe entire cyst wasisolated from the surrounding muscles and the was excised leaving wide surgical margins. Macroscopic and microscopic histo- pathological examinations confirmed the diagnosis of a hydatid cyst (Fig. 4). There had been no recurrence 2 years after the cyst was removed.

III. DISCUSSION

Echinococcosis or hydatid disease is commonly found in rural areas and the primary hosts for E. granulosus are carnivore and intermediate hosts are herbivore [4]. More than 90% of these cases occur in the liver, lungs or both [5]. However, musculoskeletal involvement is rarely found in around 1% to 4% of overall cases [1,6].

Muscle is considered an unfavorable site for the survival of parasites due to the presence of high lactic acid level, muscular contractions and blood filtering functions of liver and lungs. Hydatid cysts may occur in any part of the human body except nails, hair, and teeth. However, proximal muscles of lower extremity could be one of the sites due to rich blood supply and presence of muscle mass [7].

The unique character of HD in any area of the body is that the worm can stay silently for a long period of time (months to decades) without causing specific symptom. Either it is diagnosed incidentally or causing pressure symptoms making the victim seek medical advice [8]. The HC in this case resulted in swelling and disfigurement while the pelvic ones induced non-specific abdominal pain.

Serologic tests and ultrasonography should be performed before any invasive procedure. ELISA is 80–100% sensitive and 88–96% specific for hydatid liver disease but less sensitive for lung (50–56%) or other organ involvement (25–26%) [9]. Hydatid serology is only valuable when it is positive, negative serology does not exclude the diagnosis [10]. Serologic test (ELISA) was negative in this case.

In typical cases, ultrasound can diagnose HDs with 100% sensitivity and specificity. Computed tomography (CT) scan gives a clearer image regarding number, site, size and architecture of the cysts also their relationship with the neighboring structures. However, in atypical HDs like muscular or subcutaneous hydatidosis, MRI is the diagnostic tool of choice because of detailed information about soft tissue structure and relationship [8]. In the current case, computed tomography and magnetic resonance imaging showed multiple smaller (‘daughter’) cysts within the mother cyst, that confirm the diagnosis of intramuscular HD.

IV. CONCLUSION

A hydatid cyst of the thigh is a very rare parasitic manifestation presenting as a painless swelling, diagnosed typically by MRI. Complete excision of the hydatid cyst is recommended.

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