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# A Rare Etiology of Muscular Mass in Infant: A Case Report

Landolsi Maha<sup>1</sup>, Daib Aida<sup>1</sup>, Hella Youssef<sup>1</sup>, Boughdir Malek<sup>1</sup>, Ben Abdallah Rabiaa<sup>1</sup>, Trabelsi Fatma<sup>1</sup>, Ben Malek Riadh<sup>1</sup>, Gharbi Youssef<sup>1</sup>, Kaabar Najib<sup>1</sup>

<sup>1</sup> Pediatric surgery department, Habib Thameur Hospital, Tunis, Tunisia

Correspondence: Landolsi Maha. Tel: 0021692563562. E-mail: landolsimaha@hotmail.com

## Abstract

The frequent localization of children echinococcosis is the lungs and then the liver. The muscular involvement of hydatidosis is unusual even in endemic countries because implantations at this site require passage through the filters of the liver and lung. In addition, the intramuscular growth of cysts is hindered by the muscle's contractility and lactic acid content. We report a primary solitary intramuscular hydatid was presented to an 8-year-old boy. The diagnosis was made preoperatively with magnetic resonance imaging. Patients were treated with surgical excision and subtotal pericystectomy.

**Keywords:** Hydatid Cyst, Muscular Mass, Infant

## 1. Introduction

Hydatid disease is most commonly due to *Echinococcus granulosus* and may affect several organs in the body. Any tissue can be infected by the disease (Dahniya MH et al. 2001). Musculoskeletal involvement is rare even in endemic zones, with an incidence of <2.5% of all cases (Garcia-Diez AI, Ros Mendoza LH, Villacampa VM, Cozar M, Fuertes MI. 2000; Benhaddouz. H, Margi.M, Kissra. M, Benhmamouche. M.N. 2010). A preoperative diagnosis is important for proper management and to avoid the risk of recurrence.

In this report, we describe a very rare case of muscular hydatid disease in a child.

## 2. Case Report

An 8-year-old boy presented with a painless mass that localized in his left thigh, and which had slowly growing over a period of 2 years. His history was not relevant with trauma or septic disease. The patient lives in a rural area, and he has contact with animals.

On examination, there was a 8× 6 cm mass at the posterior region of left thigh, with soft and intact overlying skin. The mass was freely mobile with no signs of localized inflammation. The patient had a full range of motion in the ipsilateral limb. The rest of the physical examination was normal.

The inflammatory biological test was negative. The serology test for hydatid cyst was within normal limits. Ultrasound examination revealed a deep intramuscular cystic lesion with a regular wall and vascularized septa (figure 1).



Figure 1. ultrasound showing cystic mass.

The origin was not clear. Magnetic resonance images (MRI) showed an oval cystic mass developed in the left semi-tendinous muscle about 84mm\*46mm in size. The cyst is seen hyperintense in T2 with a low signal intensity of the wall. The lesion contained round-shaped daughter cysts and an intracystic membranous image with a low signal in T2 (figure 2).

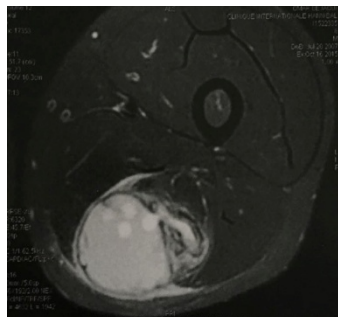


Figure 2. MRI showing the cystic lesion

MRI features were suggestive of ruptured hydatid cyst mass at the muscular body. Since the MR images were suggestive of hydatid cyst, further imaging studies were employed to detect the other sites of possible involvement. There was no other cyst in other parts of the body.

Based on the clinical and radiological finding, the patient has undergone surgery. The incision was done regarding the cyst. To reduce the risk of recurrence, the area of the incision was irrigated by a hypertonic saline solution. Then we practiced a subtotal pericystectomy preceded by aspiration and reinjection of hypertonic 3% saline. The incision was closed after inserting the suction drain. The diagnosis of a hydatid cyst was confirmed with histological examination.

Clinical, radiological, and serologic tests showed no recurrence after 4-year follow-up.

### 3. Discussion

Hydatid disease is a parasitic infection caused by *Echinococcus granulosus*. Humans are intermediate hosts in the parasite life cycle when they ingest eggs via contaminated food or water (Eckert. J, Deplazes. P. 2004; Golzari. S.E, Sokouti. M. Pericyst. 2014). In children, the most common involved sites are the liver and the lungs (Khan RA, Wahab S, Chana RS, Fareed R. 2010; Ayten Kayi Cangir et al. 2001).

Intramuscular hydatid cyst involvement is extremely rare, and there are only a few cases in children (Kerimoglu U, Kapicioglu S, Emlik D, Arazi M, Ural O. 2010). Muscular hydatidosis usually occurs as isolated lesions

without associated hepatic or pulmonary lesions. May occur primarily due to direct seeding of the oncospheres or secondarily via blood circulation (Raheef Alatassi, Saeed Koaban, Meshari Alshayie, Ismail Almogbil. 2018; Biagio M, Antonio P, Lorenzo M, Raffaele G, Angela N. 2010). In our case, there was no associated lesion.

Preoperative diagnosis is mandatory in order, especially in endemic areas, to prevent any rupture of the cyst during surgery so as to avoid anaphylactic shock and local recurrence (Hazem Al , Mohammad A, Monzer B. 2017). Primary muscular hydatid cysts are commonly asymptomatic for this the diagnosis highly dependent on imaging techniques to detect the cystic space-occupying lesion (Raheef Alatassi et al. 2018). These include X-ray radiography, taking into consideration that only 38% of patients will show soft tissue masses and calcification via X-ray radiography (Combalia, S. Sastre-Solsona. 2005; M.Y. Booz. 1993). Ultrasonography is considered the gold standard as well as the magnetic resonance imaging. MRI may show an intense rim which has been proposed as a characteristic sign of hydatid disease (Acar. A, Rodop. O, Yenilmez . E, Baylan. O, Oncül. O. 2009). Double-layer wall, daughter cysts, and water-lily sign are the specific findings. The detachment of the germinative membrane from pericyst (water-lily sign) is considered to be pathognomonic and is reported in locations other than the liver and lung (Özgür C, Turgut A. 2015; Sanjay Marwah, Subramanian. P, Nisha Marwah, Rattan.K.N, Karwasra. R.K. 2005). In our case; hydatid cyst was determined by ultrasonography examination and MR image who objective the water-lily -sign.

Specific diagnosis of a hydatid cyst may be made by examination of fluids aspirated from the cyst. But this is not routinely recommended and should be discouraged due to the risks of leakage, spreading of the disease, and anaphylactic shock (Sanjay Marwah et al. 2005). The serologic hydatid tests are then typically used to confirm the diagnosis. Indirect immunofluorescence antibody test, ELISA, immunoelectrophoresis, and immunoblot test are the commonly used techniques but Up to 50% of cases may have a negative serology, and although specific antibodies are available, false-positive tests are common (Erol. B, Tetik. C, Altun. E, Soysal. A, Bakir. M. 2007). In our case, the serology was negative.

Complete surgical resection and medical therapy is the preferred treatment for isolated echinococcosis (Özgür C, Turgut A. 2015; Sanjay Marwah et al. 2005). Surgery can be performed either by resection of the cyst preceded by aspiration and reinjection of scoliodical agents or by enucleation of the cyst. The surgical approach must be individualized depending on the cyst features. However the total excision of the cyst to avoid its rupture and spillage is the gold standard treatment (Raheef Alatassi et al. 2018) Percutaneous aspiration, infusion of scoliodical agents, and re-aspiration, under imaging guidance, can be used as an alternative to surgery in inoperable case (Samer Makki, Mohamed Al-Hakkak. 2018). However, this technique has not been solicited by other authors who preferred If it is impossible to excise a large cyst en bloc, the cyst has to be drained intra operatively, irrigated with a scoliodical agent such as hypertonic saline, and then excised (Erol. B et al. 2007).

Medical treatment preferably precede and follow the surgical treatment. It is used to reduce the rate of local recurrence after radical resection. Albendazole remains the gold standard drug administered in adjuvant therapy C, Turgut A. 2015; Samer Makki, Mohamed Al-Hakkak. 2018). In our case, the cyst was operated with mucinous pericystectomy without prescribing medical treatment.

#### 4. Conclusion

Muscle hydatidosis is a very rare disease and that some sporadic cases are reported in the literature. But it should be considered in the differential diagnosis of soft-tissue tumors and cysts in regions where the disease is endemic. Imaging has an important role in diagnosis. The surgical treatment is the gold standard.

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