

## Hydatid Cyst of the Adductor Compartment (About a Case with Literature Review)

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**Abstract:** The hydatid cyst is a common zoonosis affecting humans and many mammals that are related to the development of the larval form of a dog cestode: Echinococcus Granulosus (EG). Muscle localization of hydatid cysts remains rare. We report the case of localization at the level of the adductor compartment and through the review of the literature; we mention the epidemiological, clinical, radiological and therapeutic aspects of this pathological entity.

**Keywords:** Hydatid cyst, zoonosis, adductors compartment, adductor muscles, Surgery.

### INTRODUCTION

Echinococcosis is a common cosmopolitan anthroponosis affecting humans and many mammals related to the development of the larval or hydatid form of a dog tapeworm called Echinococcus Granulosus. Muscle localization is unusual even in endemic countries. The diagnosis is ultrasound in most cases and the treatment is mainly surgical.

### CLINICAL CASE

We report the case of a patient who is 50 years old, a regular smoker living in rural areas, with notion of contact with dogs.

He has been diagnosed with a mass of the inside of the right thigh that has been evolving for 20 years and whose volume has increased gradually in the past three years, with no other associated signs especially the inflammatory ones, no downstream compression syndrome, no fever or weight loss (Figure1) An Ultrasonography of the soft tissues was requested at first intention. It reported a type III hydatid cyst, in accordance with the classification of Gharbi [1], at the level of the adductors compartment (figure 2). In order to confirm the diagnosis and to study the exact localization of the mass, an MRI of the thigh reported an aspect of the multi-vesicular cyst with hypersignal in T2 weight sequence reflecting its parasitic activity (Figure 3). An abdominal Ultrasonography and a chest x-ray were normal. The patient benefited, under spinal anesthesia, from a peri-cystectomy by an approach at the level of the clinically palpated mass. The surgical exploration had objectified intimate relations of the

cyst: with the superficial femoral artery at the top of the scarpa triangle, in the anterolateral with the adductor longus muscle, in the back with the big adductor muscle and internally with the slender muscle. The surgical procedure consisted of performing a perkystectomy carrying the entire cyst without capsular intrusion (Figure 4). A washing of the cyst bed with oxygenated water was performed before closing on a suction redon drain. The postoperative follow-ups were simple: the removal of the Redon drain was done at D + 2 and the patient was declared outgoing at d + 4 under analgesic treatment and local care until Cicatrisation. The control, after three weeks postoperatively, showed a good evolution of the local state and an acquired cicatrisation of the operating site. After a follow-up of 6 months, the patient did not complain and the clinical examination did not show signs of local recurrence. Clinical-biological monitoring every six months has been programmed for the patient.



Fig-1: hydatid cyst of the adductor compartment: pre-operative aspects



Fig-2: ultrasound image of a hydatid cyst type III according to Gharbi classification



Fig-3: MR Image of adductor compartment's hydatid cyst



Fig-4: The excised mass

## DISCUSSION

Echinococcosis is an infestation that is caused by the Taeniid of the genus *Echinococcus*, a tiny tapeworm just a few millimeters long. Five species of *Echinococcus* have been identified, infesting a wide range of domestic and wild animals. As with all

taeniids, their life cycle involves two animals. The final host is a carnivore - in the intestines of which adult worms live - and most mammals, including humans, can serve as an intermediate host in whose organs worms form cysts. Despite the performance of current imaging techniques, the frequency of muscle

hydatidosis is currently decreasing, even in endemic areas, It is estimated between 1 and 5.4% of all hydatid locations [2-4]. The muscle constitutes an unfavorable environment to the development of the hydatid larva, because of the contractile properties of the muscle, which prevent the fixation of the larva in one hand and the production of lactate which is toxic to the larvae [5] on the other hand. According to some authors, the muscle represents the third localization after the liver and the lung [6-7]. After their arrival in the digestive tract, the hexacanth embryos will join the bloodstream to be grafted in the liver and lungs that play the role of a real filter. A very small number of embryos arrive in the large circulation where they spread throughout the body. A certain number of muscle sites have been described, namely the neck, the trunk and the limbs, particularly the lower limbs. This selectivity for the proximal muscles would be related to the importance of blood flow. In addition, muscular hydatidosis is most often primitive and isolated [5]; it is associated with other hydatid sites only in 8% of cases [8] clinically; the symptomatology of muscular hydatidosis is not specific. It is most often a soft tissue tumor, of very slow evolution, able to mimic the diagnosis of a cold abscess, calcified hematoma, or myositis [9]. Sometimes the clinical symptomatology is severe, when the cyst is ruptured or infected simulating an abscess or a malignant soft tissue tumor. Rarely it is discovered during signs of compression of adjacent tissues [10]. In endemic countries, the rural origins and contact with dogs is in favour of the diagnosis. Ultrasound confirms the diagnosis in 95% of cases [11], avoids the realization of a puncture or a biopsy of the cyst, help protecting the operative field against possible hydatid spread and the risk of anaphylactic shock [5]. The MRI is a more expensive examination that should be reserved for doubtful cases after ultrasound, it makes it possible to make the diagnosis of hydatid cyst in its various stages of evolution, in particular its rupture; It allows a better locoregional anatomical study and a good analysis of the cystic wall. This wall has a hyposignal characteristic on all the sequences but more evident in T2-weighted sequence. Arteriography has a little interest except the study of hydatid cyst relations with vascular axes. However it can mislead, showing signs in favor of malignancy in case of inflammation of the peri-cyst [10]. The biological diagnosis of muscular hydatidosis is difficult [12]; Eosinophilia is neither constant nor specific, and immunological reactions are often negative when the cyst is not cracked or remodeled [9]. Nevertheless they constitute a complement of the clinic and the imagery in the diagnosis and especially in the monitoring of the treatment [11]. The persistence of a high antibody titer or better, a re-ascension observed 6 months to 1 year after an intervention are in favor of a secondary echinococcosis [12]. The treatment of muscular hydatidosis is essentially surgical despite the development of interventional radiology, especially percutaneous treatment such puncture-aspiration-

injection and re-aspiration (PAIR), and percutaneous drainage. Additional drug therapy is necessary to prevent re-infestations in case of capsular intrusion. Prophylaxis is an effective treatment that must act at all levels of the epidemiological chain [13].

## CONCLUSION

Muscular hydatidosis remains a rare and benign disease, provided that it is diagnosed pre-operatively. Total perkyectomy remains the most effective treatment, even with the development of interventional radiology. However, in the case of parasitosis that is not stable in its domestic life cycle and sensitive to control measures, it remains accessible to both individual and general prophylaxis, which constitutes the true treatment.

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