

Solitary primary subcutaneous hydatid cyst of the buttock – Case report and literature review

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Abstract

Hydatidosis is an endemic parasitic disease affecting in most cases the parenchymal organs. The involvement of the soft tissue is a rare pathology that, left untreated, can lead to rupture and potentially catastrophic anaphylaxis. In this article, we describe the case of a 42-year-old male who developed a subcutaneous hydatid cyst in the buttock as a solitary primary localization. Consequently, the patient underwent a successful surgical excision with uneventful post-operative recovery.

Keywords: Hydatid Cyst; echinococcus granulosis; subcutaneous; soft tissue; buttock

INTRODUCTION

Hydatid cyst (HC) is an endemic disease in Mediterranean Basin, Middle East, South America, East Africa, Central Asia, and Australia ^[1, 2]. This happens principally in areas where dogs are used to herd grazing animals, particularly sheep ^[3].

Infection is caused by *Echinococcus granulosus* ^[4]. The involvement of one or multiple organs is a known event. The liver and lung are the most common organs involved (> 85%) and represent generally primary foci ^[2, 5, 6]. However, primary subcutaneous soft tissue hydatidosis is very rare ^[1, 7, 8]. To our knowledge, few cases have been reported in the literature. We present the case of a subcutaneous hydatid cyst in the buttock region as a primary site without involving other rentals.

CASE REPORT

A 42-year-old soldier presenting with a two-year history of the gradual development of a voluminous painless mass on his right hip, without any history of trauma or infection. Since his childhood, the patient was living in an urban area, which is not endemic for hydatid cyst. He weighs 72 kg with a height of 1.73 m and who's the BMI of 24.05, with good general conditions. Clinical examination revealed a painless right buttock mass, renitent on palpation, poorly limited, measured approximately 20 cm in greatest dimension (Figure 1). The overlying skin was distended without associated inflammatory signs. Hip X-ray showed no abnormalities. Ultrasound examination (UE) and magnetic resonance imaging (MRI) depicted a superficial multilobed formation, adjacent to the buttock muscles, with multiple cystic lesions (Figure 2 and 3). This was considered as a hydatid cyst. Hydatid serology for antibodies to *Echinococcus granulosus* antigens was negative. Complete blood count (CBC) did not reveal eosinophilia and biochemistry findings were normal. In the extended assessment, a computed tomography (CT) scan of the chest and abdomen was within the normal range and excluded pulmonary or hepatic involvement.

The patient underwent surgical excision by pericys-

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Figure 1. Preoperative clinical photograph showing the lump in the right buttock.



Figure 2. Heterogeneous mass within the stomach.

tectomy (Figure 4). The subcutaneous cystic lesions were removed completely without damaging the cyst wall (Figure 5 and 6), and that extensive irrigation with hypertonic saline solution was performed. Histopathological examination confirmed the diagnosis of hydatidosis. Antihelminthic treatment with 2 x 400 mg of albendazole was administered for two months to reduce the risk of relapse. One year postoperatively, the evolution was favorable. Clinical follow-up and repeated ultrasound controls were confirmed the absence of recurrence of the hydatid cyst.

DISCUSSION

Cystic hydatidosis is a cosmopolitan anthroponosis caused by *Echinococcus granulosus*. Parasitic infection is endemic in areas where sheep are raised in large quantities. Close contact with dogs is the main risk factor^[3]. The Mediterranean region has been reporting cases regularly.

The liver and lungs are known as the most often sites involved (85%)^[2, 5, 6]. After ingestion, the ova of the parasite, which penetrates the mucosa of the small intestine, join the portal system and meet the liver and lungs. These organs filter out most ova. However, parasitic eggs can pass to the systemic circulation and reach other places in the body^[7-9]. The mechanism of primary subcutaneous hydatidosis is not clear. Although larval subcutaneous colonization is a reliable mechanism, we believe that systemic dissemination through lymphatic channels should be considered^[10].

Primary subcutaneous HC is an uncommon condition,

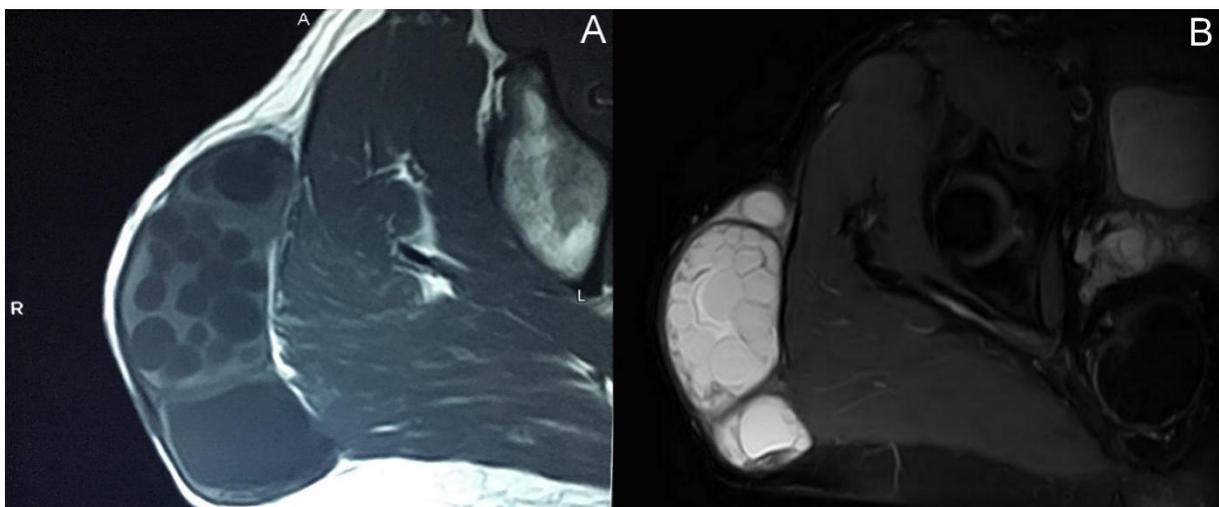


Figure 3. (A) Axial T1-weighted and (B) axial fat saturated T2-weighted magnetic resonance images showing subcutaneous multilocular cystic formation in the right buttock with daughter cysts.

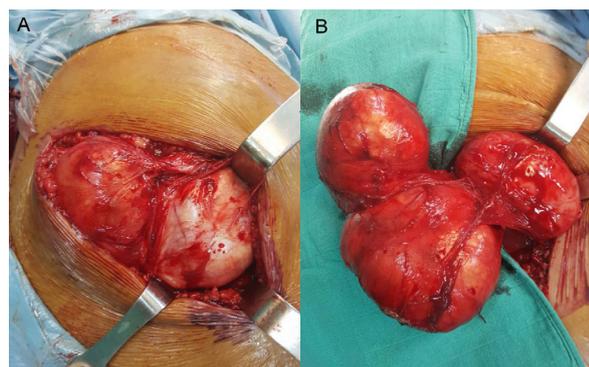


Figure 4. (A and B) Per-operative view of hydatid cyst operation.

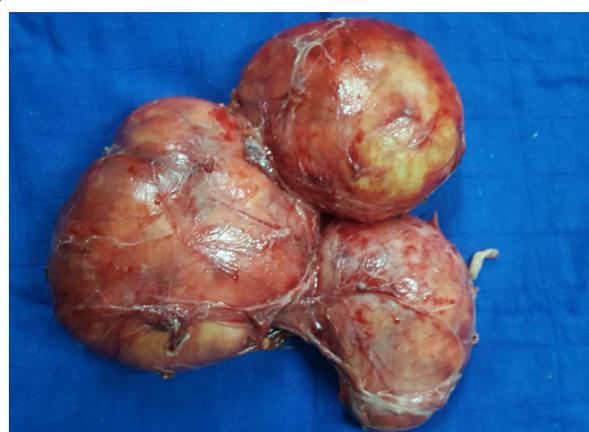


Figure 5. Macroscopic aspect of the totally excised hydatid cyst without destroying the cyst wall.



Figure 6. Image of several daughter cysts after opening of the main hydatid cyst.

its gluteal localization makes only 1% of all the localization of the cyst (Table 1), with cold abscess, calcified hematoma, or lipoma as main differential diagnoses [8, 9, 11]. This involvement causes a diagnosis problem because of the insidious symptomatology; however, it's should be considered when slowly growing soft tissue mass in patients living in the endemic areas [12, 13]. Because hydatid disease (HD) may develop complications

such as rupture and anaphylactic reaction [14, 15], diagnosis of echinococcosis is required before any biopsy or surgical excision.

Ultrasonography is a useful key method for detecting hydatid cyst [8-10]. MRI is the better examination, which provides local and locoregional meticulous analysis [16]. Serological techniques are less sensitive for muscular involvements and can yield false-negatives [9, 17]. In our case, the negative serological test does not exclude the diagnosis, and the imaging investigations have revealed a presentation of solitary primary subcutaneous hydatid cyst of the buttock.

Echinococcosis of the soft tissue is treated by surgery. Pericystectomy without performing the cyst is the recommended option [7, 8, 11, 18]. If this method is impossible to do without breaking the wall of the HC, the cystic fluid has to aspire, and the laminated membrane should be totally excised. Sterilization of the cystic pouch is performed by protoscolicidal solutions [7-9, 14]. In some

Table 1. Patients with isolated and primary subcutaneous hydatid cysts of the gluteal region and thigh [19-27].

Author	Year	Sex of the patient	Age of the patient	Localization	Size of the cyst (cm)	Serologic test of Echinococcus	Results after surgery
Sreeramulu, P. N.	2010	M	34	Left gluteal	12/10	Negative	No evidence of recurrence for 6 months
Pathak, T. K.	2011	F	30	Right thigh	12/8	/	No local recurrence after one year
Argy, N.	2013	F	60	Right thigh	10	Positive	Relapse (three weeks later)
Al-Hakkak, S. M. M	2018	M	37	Right thigh	10/6.5	Positive	/
Salih, A. M.	2018	F	34	Left thigh	10/17	Negative	/
Samiee-Rad, F.	2020	M	86	Right thigh	9/8/6.5	/	No evidence of recurrence (23 months follow-up)
Zazo, R.	2020	F	36	Right thigh	12.4/8/11	Negative	One month without any recurrence manifestations
Özdemir, M.	2020	M	72	Left gluteal	4.4/3.4/4.6	Negative	No recurrence for 6 months
Samsami, M.	2021	F	32	Left thigh	15/5	Negative	No recurrence during 8 months follow-up

cases, an additional perioperative antihelminthic therapy is preferred to reduce the risk of recurrence. Given our department guidelines, our patient underwent an antiparasitic medical treatment for 2 months after the surgical excision. We recommended 2 courses of oral Albendazole (400 mg twice per day) or (12 mg/kg/day) for two months. Clinical and ultrasound periodic follow-up of our patient did not reveal any postoperative recurrence manifestations during 1 year.

DECLARATIONS

Authors' contributions

All authors made substantial contributions to merit inclusion as co-authors. All authors approved the final manuscript.

Conflict of interest

All authors declared that there are no conflicts of interest.

Ethics approval

Not applicable.

Consent for publication

Patient consent was obtained for publication without personal details.

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