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]. 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 imagining (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-
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 administrated 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 anthropozoonosis 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,
such as rupture and anaphylactic reaction \cite{14, 15}, diagnosis of echinococcosis is required before any biopsy or surgical excision. Ultrasonography is a useful key method for detecting hydatid cyst \cite{8-10}. MRI is the better examination, which provides local and locoregional meticulous analysis \cite{16}. Serological techniques are less sensitive for muscular involvements and can yield false-negatives \cite{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 perforing the cyst is the recommended option \cite{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 \cite{7-9, 14}. In some 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 \cite{8, 9, 11}. This involvement causes a diagnostic 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 \cite{12, 13}. Because hydatid disease (HD) may develop complications such as rupture and anaphylactic reaction \cite{14, 15}, diagnosis of echinococcosis is required before any biopsy or surgical excision.

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Table 1. Patients with isolated and primary subcutaneous hydatid cysts of the gluteal region and thigh \cite{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                                      |
|-------------------|------|--------------------|--------------------|--------------|-----------------------|--------------------------------|------------------------------------------------------------|
| Sreeramu, 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.  | 2018 | M                  | 37                 | Right thigh  | 10/6.5                | Positive                        | /                                                          |
| Salih, A. M.      | 2018 | F                  | 34                 | Left thigh   | 10/17                 | Negative                        | /                                                          |
| Samiiee-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            |
| Özdemirci, 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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