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Giant Primary Intermuscular Hydatid Cyst in the Posterior Thigh Compartment: A Case Report and Review of the Literature

Authors' Contribution:

Study Design A
Data Collection B
Statistical Analysis C
Data Interpretation D
Manuscript Preparation E
Literature Search F
Funds Collection G

ABCDEF 1 **Ioannis Spyrou**
BCDEF 1 **Iordanis Varsamos**
ABCDEF 1 **Meletis Rozis** 
ABCDE 1 **Elias Vasiliadis**
ADEF 1 **Panagiotis Karampinas** 
BE 1 **Christos Patilas**
BE 1 **Christos Liggas**
BCEF 2 **Kalliopi Diamantopoulou**
ADEF 1 **Spyros Pneumatics**

1 3rd Department of Orthopaedic Surgery, National and Kapodistrian University of Athens, KAT General Hospital, Athens, Greece

2 Department of Pathology, KAT General Hospital, Athens, Greece

Corresponding Author: Ioannis Spyrou, Nikis 2, 145 61, Kifissia, Greece
Phone: +302132086071, e-mail: giannisSpyrou1994@gmail.com
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Patient: Male, 66-year-old
Final Diagnosis: Hydatid cyst
Symptoms: Mass
Clinical Procedure: —
Specialty: Infectious Diseases • Orthopedics and Traumatology • Tropical Medicine
Objective: Rare disease
Background: Primary intermuscular hydatid cyst is an exceptionally rare manifestation of *Echinococcus granulosus* infection, which remains a major healthcare challenge worldwide. Hydatid cysts are slow-growing masses that frequently remain undiagnosed and untreated for prolonged periods. Generally, hydatid disease is difficult to eradicate and requires long-term follow-up to ensure recurrence-free recovery. No universally accepted treatment algorithm exists for thigh hydatidosis, and treatment is individualized. Observation, pharmacologic treatment, percutaneous approaches, and surgery have been described in the literature.

Case Report: We present a CE2 primary hydatid cyst measuring 18.2 cm in maximal dimension, which was located in the posterior thigh compartment of an otherwise healthy 66-year-old man involved in agricultural activities who presented with a painless mass. Contrast-enhanced computed tomography of the chest and abdomen was performed to exclude hydatid cysts at other sites. Preoperative magnetic resonance imaging raised suspicion for a hydatid cyst and facilitated surgical planning. The cyst, which was in contact with the sciatic nerve, was successfully treated via open en bloc excision and lavage, followed by a course of anthelmintic therapy. An inadvertent cyst opening occurred intraoperatively but was promptly recognized and provisionally repaired.

Conclusions: This case supports consideration of hydatid disease in selected patients with exposure-compatible, painless extremity masses; illustrates the value of advanced preoperative imaging; and demonstrates successful treatment with careful en bloc excision. The patient recovered well, without clinical evidence of recurrence or surgical complications at 15 months after surgery. Continued follow-up, including imaging for the duration recommended in the literature, is warranted to confirm long-term treatment success.

Keywords: Musculoskeletal Hydatidosis • Pericystectomy • Echinococcus Infection • Hydatid Cyst • Echinococcus granulosus

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Introduction

Hydatid disease is a cystic zoonotic disease caused by helminths of the *Echinococcus granulosus* complex. Among the 3 forms of echinococcal infection in humans, hydatid disease—along with alveolar echinococcosis—is prevalent in many regions where livestock breeding and close contact with dogs are linked, resulting in important medical and socioeconomic consequences [1]. Hydatid disease represents a serious public health challenge because of its wide geographic distribution, with high prevalences reported in the Mediterranean region, Russia, China, northern and eastern Africa, Australia, and South America [2,3].

Adult parasites reside in the small intestine of definitive hosts, predominantly canines such as dogs; they release eggs or cystode segments into the intestinal tract and subsequently into the environment [1]. Ingestion of parasitic eggs from the feces of a definitive host leads to human infection and echinococcal cyst formation [2]. Humans serve as intermediate hosts. Primary cystic echinococcosis refers to cyst formation following infection via the oral route [1]. After infection, most infective oncospheres are transported via the bloodstream to the liver and lungs; these organs are thus the most common sites of cyst formation, although nearly any organ may be affected [3]. Primary musculoskeletal hydatid disease is exceptionally rare; few reports in the literature have described cysts in the posterior thigh compartment. This rarity may complicate the differential diagnosis of soft tissue masses, particularly in regions where hydatid disease incidence is declining. Furthermore, *E. granulosus* infection is difficult to eradicate, and treatment is associated with a substantial risk of recurrence [4].

We present a rare case of a large primary hydatid cyst in the posterior thigh compartment that was successfully treated with surgical excision and albendazole therapy. This case highlights several important aspects of management. First, hydatidosis should be considered in the differential diagnosis of a posterior thigh mass, despite its rarity. Second, careful preoperative planning with advanced imaging is important to exclude involvement at other sites and guide surgical dissection. Finally, meticulous surgical technique is essential, particularly given the large cyst size and proximity to neurovascular structures, to achieve en bloc excision without neurovascular compromise. These challenges were successfully managed in the present case. This manuscript was prepared in accordance with the SCARE guidelines [5].

Case Report

A 66-year-old man presented to the outpatient clinic of our Orthopedic Department at a Level I academic trauma center

with a 2-month history of a painless, enlarging mass in the left posterior thigh. There was no history of thigh trauma. A firm, nonfluctuant mass was palpable. Hip and knee range of motion were unaffected. The patient reported numbness around the mass. Neurovascular examination of the affected extremity showed otherwise normal findings. The patient resided in a rural area and was involved in agricultural activities, including raising sheep and goats; he reported using a dog for herding. His medical history and prior radiographic evaluations were unremarkable.

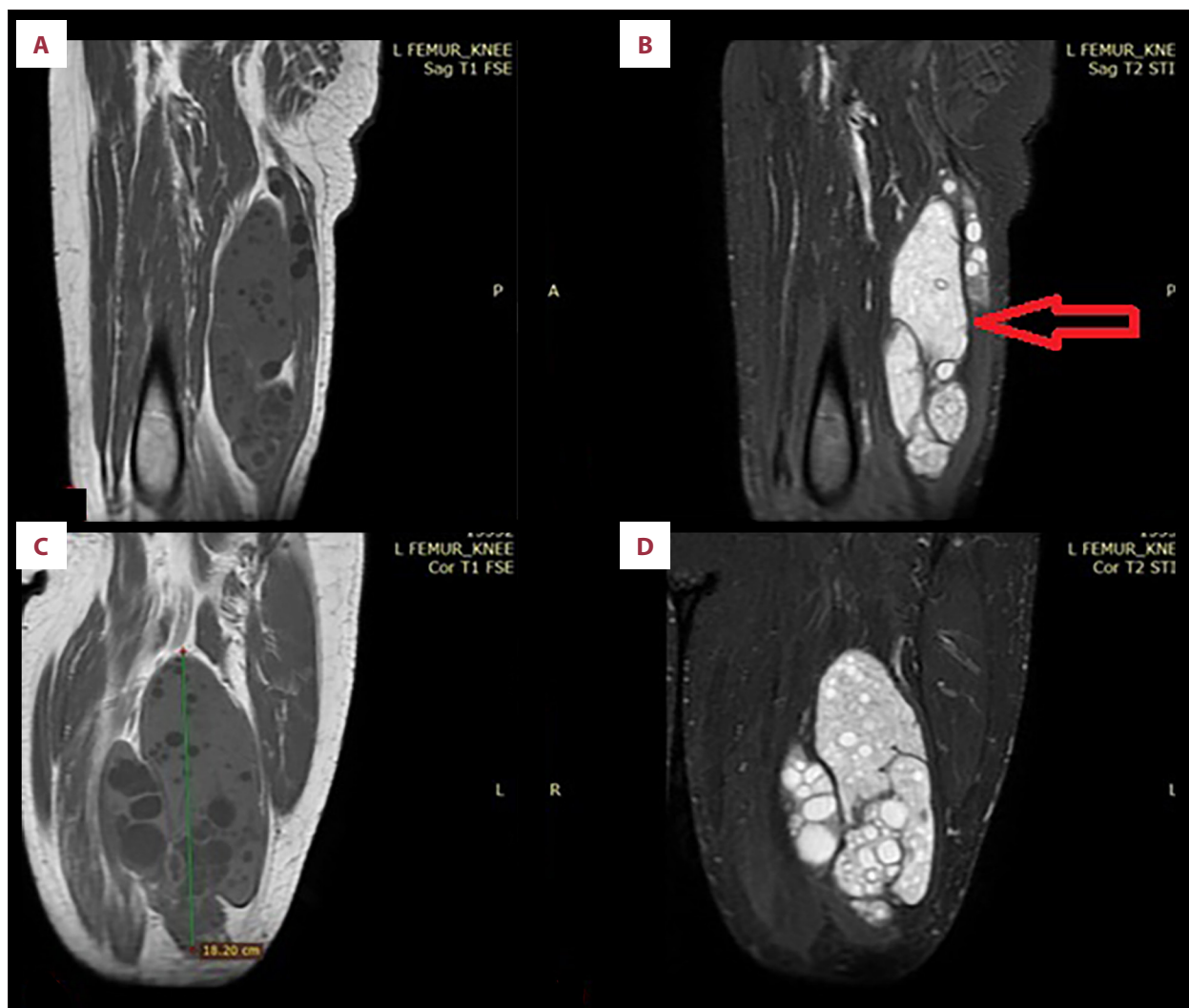
Contrast-enhanced magnetic resonance imaging (MRI) of the left thigh revealed a well-defined, loculated lesion measuring $18.2 \times 9.5 \times 7.2$ cm in the intermuscular space of the posterior thigh compartment. The lesion demonstrated high T2 and low T1 signal intensity. Intracystic compartments showed mild peripheral linear enhancement after intravenous contrast administration. The lesion abutted adjacent muscles but was separated from them by a thin fat layer (Figure 1). Preoperative contrast-enhanced computed tomography (CT) of the chest and abdomen revealed no additional pulmonary or hepatic hydatid cysts or other abnormal findings. Because the MRI appearance strongly suggested a hydatid cyst, the decision was made to excise the mass en bloc and perform histopathologic examination of the specimen, including intraoperative frozen-section analysis. This approach would allow definitive treatment to be determined intraoperatively according to lesion etiology. Other diagnoses, such as lipoma or liposarcoma, chronic hematoma, and abscess, were considered less likely based on the imaging and clinical findings. Surgery was scheduled, and informed consent was obtained. Preoperative laboratory findings were unremarkable; no leukocytosis or eosinophilia was noted.

Prophylactic antibiotics were withheld to avoid reducing sensitivity because tissue samples were planned to be obtained for microbiological culture. The patient was intubated and placed in the prone position. The extremity was draped from immediately proximal to the gluteal fold until the knee joint. A lazy-S incision was made beginning near the gluteal fold and extending distally along the midsagittal plane toward the distal femur, terminating approximately 10 cm proximal to the popliteal fossa (Figure 2). Subcutaneous tissue was dissected, and the fascia overlying the muscle was opened. The interval between the biceps femoris and semitendinosus/semitransversus muscles was developed, and the encapsulated cystic lesion was identified. The mass was carefully dissected from the surrounding tissues, along with a portion of the biceps femoris, to minimize the risk of cyst puncture and spillage. Dissection proceeded from superficial distal to deep proximal. At the proximal end, an additional pedunculated cystic lesion extending into the adjacent tissue was identified. The proximal end of the main cyst was clamped, ligated, and divided.

The pedunculated lesion was then carefully released and excised en bloc. During dissection, the wall of the main cyst was inadvertently opened; this opening was immediately recognized and provisionally repaired with Vicryl sutures before gross contamination of the operative field with cyst contents could occur. The cyst was ultimately removed en bloc. The excised specimen (**Figure 3**) was opened on a separate tray and sent for frozen-section analysis, definitive histopathologic examination, and tissue culture. The intraoperative frozen section suggested a parasitic etiology; therefore, the operative field was thoroughly irrigated. Prophylactic antibiotics (teicoplanin 400 mg intravenously) were then administered. The posterior thigh compartment was inspected for additional lesions and thoroughly irrigated with saline, povidone-iodine, hydrogen peroxide, and 15% NaCl solution. The muscles were reapproximated, a drain was placed, and the overlying layers were closed. After the patient had been transferred to the recovery room, the operating room was cleaned with a sodium hypochlorite solution. Approximately 3 hours after surgery,

when the patient had returned to the ward, adjuvant oral albendazole (400 mg twice daily) was initiated in addition to standard perioperative antibiotic therapy according to institutional protocol (teicoplanin 400 mg intravenously, twice daily). Tissue cultures were sterile.

Postoperatively, the patient remained stable and afebrile. Dressings were changed on postoperative day 2; the drain was removed at this timepoint, and 300 mL of serosanguineous fluid were collected. The patient was mobilized on postoperative day 1 and discharged on postoperative day 7. Following infectious disease consultation, he received oral albendazole (400 mg twice daily) during postoperative months 1 and 3. Liver function tests at 1 month postoperatively revealed results within the normal range. Sutures were removed in the outpatient clinic on postoperative day 20. Histopathologic examination confirmed the suspected diagnosis, demonstrating the characteristic echinococcal cyst wall (**Figure 4**).



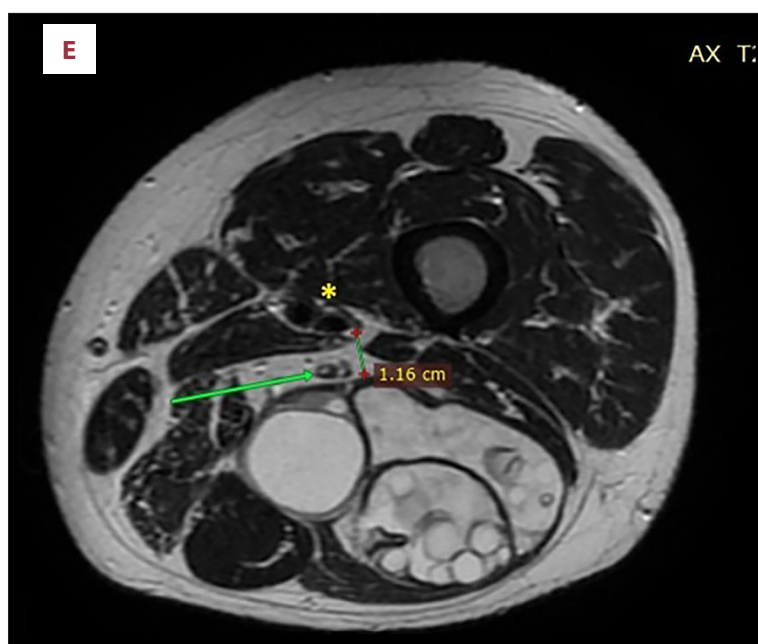


Figure 1. Magnetic resonance images demonstrating the septated hydatid cyst in the posterior thigh compartment. On the axial image, the cyst abuts the sciatic nerve (green arrow) and lies in close proximity to the superficial femoral artery (asterisk); a straight line from the cyst wall to the vessel indicates the distance of 11.6 mm. A hypointense, low-signal-intensity layer surrounding the cyst (rim sign) is evident on T2-weighted images (red arrow). Multiple daughter cysts are also visible. (A) T1-weighted sagittal image without contrast enhancement. (B) T2-weighted sagittal image without contrast enhancement. (C) T1-weighted coronal image without contrast enhancement. (D) T2-weighted coronal image without contrast enhancement. (E) T1-weighted axial image without contrast enhancement at the mid-to-distal femoral shaft level.

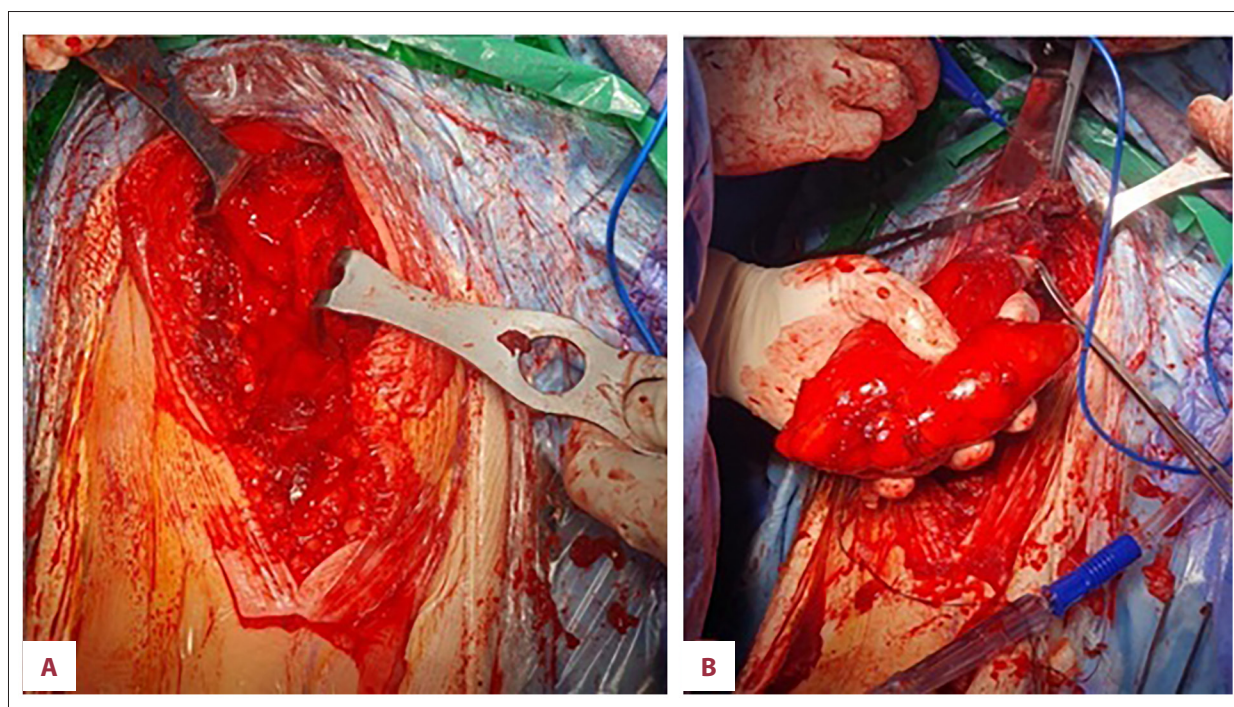


Figure 2. Intraoperative photographs showing the posterior lazy-S incision (A) and dissection of the main cyst from superficial distal to deep proximal (B).

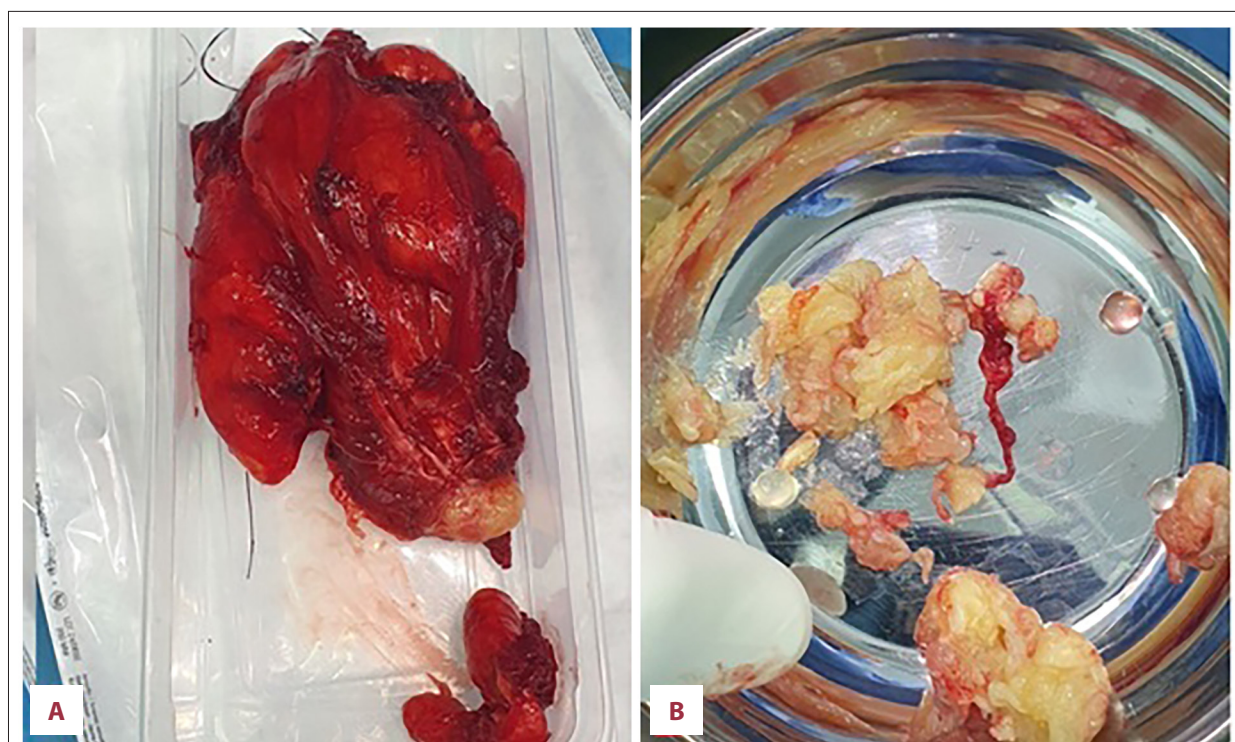


Figure 3. Intraoperative photographs of the excised specimen (A) and its contents (B), described in the histopathology report as “multiple serous-gelatinous cysts filled with serous and grayish-white friable material.”

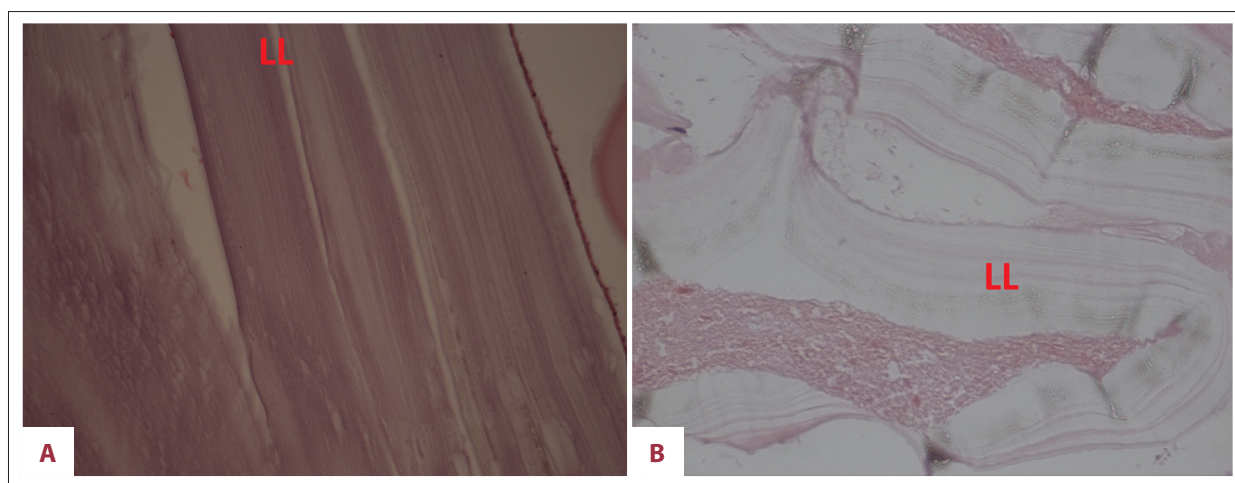


Figure 4. Histopathologic examination. Hematoxylin and eosin staining of the specimen demonstrating the cyst wall and laminated layer (LL): (A) ×20 magnification and (B) ×40 magnification.

Posterior thigh numbness and paresthesia (possibly related to mild compression of the posterior femoral cutaneous nerve) resolved by 1 month postoperatively. The patient was evaluated in the outpatient clinic at postoperative months 1, 3, 6, 12, and 15. At 15 months postoperatively, he had no clinical signs of recurrence or surgery-related complications.

Search Strategy

For this literature review, the PubMed database was searched (last accessed August 13, 2026) using combinations of the terms “hydatid,” “cyst,” “muscle,” “intermuscular,” and “intramuscular,” without chronological restriction. The initial search identified 859 articles. Relevant full-text English-language articles reporting hydatid cysts of the thigh were evaluated; duplicate reports were identified and excluded. Studies involving

hydatidosis of the anterior and medial thigh compartments were included due to the rarity of musculoskeletal involvement and the shared regional anatomy. Studies reporting subcutaneous lesions were excluded, as were reports of primary hydatid cysts in the gluteal region or below the knee. Studies of primary intraosseous cysts and intermuscular or intramuscular thigh cysts with concurrent hepatic involvement were also excluded. Reports of musculoskeletal hydatidosis in children and non-English-language reports were excluded. Reference lists of relevant articles were also reviewed, and additional eligible studies were included. Case series describing thigh hydatidosis without sufficient anatomic or treatment details were excluded.

The search identified 70 articles describing primary thigh hydatidosis in 100 patients. Seventeen studies involved posterior compartment cysts [6-22], comprising 20 patients. These studies are summarized in **Table 1**. Two studies reported use of the PAIR [puncture, aspiration, injection, and reaspiration] technique [20,21], whereas 15 reported treatment by surgical excision [6-19,22]. Three studies [9,10,19] were included both in the group of hydatid cysts involving multiple thigh compartments and in the group of primary posterior compartment hydatid cysts; this overlap was considered when summarizing study and patient numbers. A recent systematic review of primary extremity hydatid cysts [23] was consulted, as were other landmark articles and guidelines on cystic echinococcosis [24-26].

Discussion

Primary musculoskeletal involvement in echinococcosis is considered very rare, representing approximately 1% to 4% of all infections [27]. In a review of 272 patients with hydatid disease over a 26-year period, the thigh was only affected in 1 case (0.37% of cases examined) [28]. Some authors have argued that the relatively high lactic acid content and contractile activity of skeletal muscle create an unfavorable environment for cyst formation [6,29]. Accordingly, hydatidosis may not be included in the initial differential diagnosis of an extremity soft tissue mass. In our patient, the hydatid cyst was primarily located in the intermuscular space of the posterior compartment, compressing the biceps femoris without clear intramuscular extension. An additional cyst connected to the main cyst appeared to lie between the semitendinosus and biceps femoris muscles. Given the large size of the lesion, radiologic distinction of intramuscular extension in this region was particularly difficult (**Figure 1**).

Most published evidence consists of small case series and case reports. In a recent systematic review by Paspala et al that included 118 patients with primary hydatid cysts of

the extremities, the thigh was involved in 53% of cases [23]. Studies of hydatidosis involving the medial and anterior thigh compartments are summarized in **Tables 2 and 3**, respectively. Larger case series reporting cysts that involve different compartments are presented separately in **Table 4**; studies [9,10] are also included in **Table 1** because they included posterior compartment cysts. In their review of 300 patients treated for cystic echinococcosis at a single institution over a 16-year period, Hamamci et al found that only 2 patients had primary thigh cysts [30]. Similarly, among 1303 cases of solitary hydatidosis treated from 2015 to 2024, Aydin et al reported only 14 cases of primary muscular hydatid cysts, which predominantly involved the thigh [31].

Although the present case is not unique in the literature, it combines several challenging aspects of management: the deceptive presentation of a large thigh mass in a country with currently low and declining rates of echinococcosis, a giant cyst (> 10 cm) occupying a substantial portion of the posterior compartment, and the need for meticulous imaging-based preoperative planning, which we considered essential to achieving a favorable outcome. European Centre for Disease Prevention and Control data for 2022 estimated the rate of newly reported *E. granulosus* infections in Greece at 0.05 per 100 000 population, placing Greece at the lower end of the spectrum among European Union countries [32].

In primary hydatid cysts of the extremities, the most common clinical presentation is a painless mass present for a variable period, ranging from months to years. This presentation was consistent with findings in our patient. It is well established that hydatid cysts may grow slowly, remain asymptomatic for years, and eventually calcify or spontaneously rupture [3]. This pattern may produce various symptoms depending on the anatomic location of the cyst. Some cysts grow to very large sizes and may extend into adjacent compartments, which makes excision challenging [29,33]. A rapidly enlarging, painful mass with the potential to cause compartment syndrome has also been described [10]. Depending on their location and size, hydatid cysts can compress nearby neurovascular structures, causing neuropathy, limiting joint range of motion, or even producing arterial insufficiency that threatens the limb [10,34,35]. In the posterior compartment, compression of the sciatic nerve may present as sciatica [17]. Intriguingly, despite direct contact between the cyst and the sciatic nerve in our patient, there was no neurologic deficit or sciatic symptomatology. Mild compression of the posterior femoral cutaneous nerve by the posterior thigh mass may also have occurred. Csotye et al reported a cyst in the anterior thigh compartment associated with a basicervical fracture; however, it remains unclear whether this represented dissemination following surgery 8 years earlier for an intraosseous cyst of the femoral neck or primary muscular involvement with secondary femoral erosion [36]. Fever

Table 1. Summary of studies regarding primary hydatid cysts of the posterior thigh.

Study/country	No. of patients (N)	Age, years (mean)	Male/Female ratio	Clinical presentation	Diagnosis
1) Arslan et al, Türkiye, 2018 [21]	1	32	- (Male)	Painless mass (6 months)	MRI, US
2) Gebregiorigis et al, Ethiopia, 2024 [7]	1	34	- (Male)	Painless swelling (5 years)	MRI
3) Jrad et al, Tunisia, 2021 [8]	1	18	- (Female)	Painless swelling (6 months)	MRI
4) Yasir et al, India 2025 [12]	1	38	- (Female)	Swelling and heaviness	US, MRI
5) Hamdi et al, Tunisia, 2010 [14]	1	25	- (Female)	Soft tissue mass	MRI
6) Bordon et al, Zimbabwe, 1989 [15]	1	46	- (Female)	Painless mass (15 months)	-
7) Zendeoui et al, Tunisia, 2024 [17]	1	40	- (Male)	Sciatica	US, MRI
8) Akcam et al, Türkiye, 2026 [20]	1	64	- (Female)	Painless swelling (2 years)	MRI
9) Tarhan et al, Türkiye, 2002 [16]	1	40	- (Male)	Painless mass (6 weeks)	MRI
10) Ismail et al, Pakistan, 2025 [18]	1	90	- (Female)	Painless swelling (3 years)	US, MRI
11) Atmatzidis et al, Greece, 2006 [6]	1	73	- (Female)	Painful soft tissue mass	CT, scintigraphy
12) Notarnicola et al, Italy, 2009 [22]	1	79	- (Female)	Painful swelling for 3 years, fever, and pruritus	MRI
13) Basarir et al, Türkiye, 2008 [13]	5 (2 in thigh)	69	- (2 Female)	Soft tissue mass	US, MRI
14) Rabhi et al, Tunisia, 2021 [11]	1	82	- (Female)	Painful swelling	MRI
15) Gougoulas et al, Greece, 2010 [10]	9 (6 in thigh)	61.3 (range, 55-75)	- (6 Male)	Painful thigh mass	MRI
16) Gonder et al, Türkiye, 2021 [9]	9	31.5 (range, 20-45)	0.5	Thigh pain and swelling	US, CT, MRI
17) Martin et al, Spain, 1993 [19]	3 (2 in thigh)	39.5	1	Swelling	US, MRI, CT
Study/country	Compartment/treatment	Liver involvement	Follow-up (months)	Outcome (thigh cyst)	
1) Arslan et al, Türkiye, 2018 [21]	Posterior—PAIR	No	N/A	Cyst became infected and developed into an abscess, requiring open surgery. No further follow-up was reported	
2) Gebregiorigis et al, Ethiopia, 2024 [7]	Posterior/medial—surgical excision (revision surgery)	No	N/A	No recurrence or complications were reported	

Table 1 continued. Summary of studies regarding primary hydatid cysts of the posterior thigh.

Study/country	Compartment/treatment	Liver involvement	Follow-up (months)	Outcome (thigh cyst)
3) Jrad et al, Tunisia, 2021 [8]	Posterior—excision	No	12	No clinical evidence of recurrence
4) Yasir et al, India 2025 [12]	Posterior—excision	No	N/A	Follow-up was not reported
5) Hamdi et al, Tunisia, 2010 [14]	Posterior—surgical excision	No	36	No clinical evidence of recurrence or complications was reported
6) Bordon et al, Zimbabwe, 1989 [15]	Posterior—aspiration and excision	Unclear	2	Possible spillage occurred during aspiration. Patient was asymptomatic at follow-up
7) Zendeoui et al, Tunisia, 2024 [17]	Posterior—excision and sciatic nerve neurolysis	No history/ unclear	8	No clinical evidence of recurrence or surgical complications was reported during follow-up
8) Akcam et al, Türkiye, 2026 [20]	Posterior—PAIR	No	N/A	Post-procedural MRI showed cyst regression; subsequent follow-up was unclear
9) Tarhan et al, Türkiye, 2002 [16]	Posterior—excision	No	N/A	No follow-up data were reported
10) Ismail et al, Pakistan, 2025 [18]	Posterior/medial—excision	No	3	No clinical evidence of recurrence was reported during follow-up
11) Atmatzidis et al, Greece, 2006 [6]	Posterior—excision	No	12	Cyst was inadvertently opened during surgery; however, no recurrence or surgical complications were reported. CT and US were performed during follow-up
12) Notarnicola et al, Italy, 2009 [22]	Posterior—excision	No	12	No perioperative or postoperative anthelmintic therapy was administered. MRI was used for follow-up. No recurrence or postoperative complications were reported
13) Basarir et al, Türkiye, 2008 [13]	Medial and posterior; medial cyst marginally excised because of proximity to femoral vein	No	28	No clinical evidence of thigh hydatid cyst recurrence was reported during follow-up
14) Rabhi et al, Tunisia, 2021 [11]	Posterior—excision	No	6	Infected cyst. No recurrence was reported
15) Gougoulis et al, Greece, 2010 [10]	4 anterior, 2 posterior—excision	No	12-96	No complications or recurrence were reported
16) Gonder et al, Türkiye, 2021 [9]	5 anterior, 1 medial, 3 posterior—excision	No	62 (range, 20-170)	Superficial wound infection occurred in 2 patients; it was managed with debridement and antibiotics. US and MRI were used during follow-up. No recurrences were detected
17) Martin et al, Spain, 1993 [19]	1 medial, 1 posterior—excision	N/A	N/A	No follow-up data were reported

Abbreviations: CT, computed tomography; MRI, magnetic resonance imaging; N/A, not available; PAIR, puncture, aspiration, injection, and reaspiration; US, ultrasound.

Table 2. Summary of studies regarding primary hydatid cysts of the medial thigh compartment.

Study/country	No. of patients (N)	Age, years (mean)	Male/Female ratio	Clinical presentation	Diagnosis
1) Garcia-Alvarez et al, Spain, 2002 [52]	13 (1 in thigh)	65	- (Female)	Palpable mass, fever	US, CT, MRI
2) Landolsi et al, Tunisia, 2017 [60]	1	27	- (Male)	Painless swelling (6 months)	MRI
3) Laasri et al, Morocco, 2022 [61]	1	31	- (Female)	Painful swelling (1 year)	MRI
4) Sharif Tahir et al, Iraq, 2019 [62]	1	24	- (Female)	Painful mass (3 months), fever	MRI
5) Vicidomini et al, Italy, 2007 [63]	1	34	- (Male)	Painful mass	US, MRI
6) Alimehmeti et al, Albania, 2012 [34]	1	18	- (Male)	Swelling, saphenous neuropathy	US, MRI
7) Acar et al, Türkiye, 2009 [64]	1	20	- (Male)	Painless mass	US, MRI
8) Al-Hakkak, Iraq, 2018 [65]	1	37	- (Male)	Painful swelling	US, MRI
9) Bansiwat et al, India, 2011 [66]	1	60	- (Female)	Painless swelling (30 years)	US, MRI
10) Sarisoy et al, Türkiye, 2008 [58]	1	31	- (Male)	Painless mass (8 months)	US, MRI
11) Jerbi Omezzine et al, Tunisia, 2010 [67]	1	82	- (Male)	Painless soft tissue mass	US, MRI
12) Abi Saad et al, Lebanon, 2009 [68]	1	53	- (Female)	Painless mass	MRI
13) Mogrambi et al, Greece, 2010 [69]	1	67	- (Male)	Painless mass	US, CT
14) Yorukoglu et al, Türkiye, 1993 [35]	1	47	- (Female)	Painful swelling, claudication	CT
15) Arian and Kazerani, Iran, 2022 [70]	1	55	- (Male)	Painful swelling (40 days)	US, MRI
16) Durakbasa et al, Türkiye, 2007 [71]	1	40	- (Female)	Painful mass (2 weeks)	US, MRI
17) Özdemir et al, Türkiye, 2020 [72]	1	55	- (Female)	Painless swelling (several weeks)	US, MRI
Study/country	Compartment/treatment	Liver involvement	Follow-up (months)	Outcome (thigh cyst)	
1) Garcia-Alvarez et al, Spain, 2002 [52]	Medial—excision	No	36	Recurrence requiring revision surgery	
2) Landolsi et al, Tunisia, 2017 [60]	Medial—excision	No	N/A	No postoperative course was reported	
3) Laasri et al, Morocco, 2022 [61]	Medial—excision	No	3	No complications were reported during immediate postoperative period	

Table 2 continued. Summary of studies regarding primary hydatid cysts of the medial thigh compartment.

Study/country	Compartment/ treatment	Liver involvement	Follow-up (months)	Outcome (thigh cyst)
4) Sharif Tahir et al, Iraq, 2019 [62]	Medial—excision	No	3	Cyst became infected. No postoperative complications were reported
5) Vicidomini et al, Italy, 2007 [63]	Medial—excision	No	12	No clinical evidence of recurrence or complications was reported
6) Alimehmeti et al, Albania, 2012 [34]	Medial—excision	No	30	No complications or recurrence were reported. Sensory deficit resolved 1 month postoperatively. MRI was performed during follow-up
7) Acar et al, Türkiye, 2009 [64]	Medial—excision after scolicalid injection and evacuation of cyst contents	No	N/A	No follow-up data were reported
8) Al-Hakkak, Iraq, 2018 [65]	Medial—excision	No	N/A	No follow-up data were reported
9) Bansiwat et al, India, 2011 [66]	Medial—excision	No	N/A	No follow-up data were reported
10) Sarisoy et al, Türkiye, 2008 [58]	Medial—excision	No	12	No recurrence was detected during follow-up; this was confirmed by US
11) Jerbi Omezzine et al, Tunisia, 2010 [67]	Medial—excision	No	20	No complications or recurrence were reported
12) Abi Saad et al, Lebanon, 2009 [68]	Medial—excision	Unclear	N/A	No follow-up data were reported
13) Mogrambi et al, Greece, 2010 [69]	Medial—excision	No	60	Hepatic pericystectomy had been performed 7 years earlier without perioperative anthelmintic therapy. No anthelmintic therapy was administered for thigh pericystectomy. No clinical evidence of recurrence was reported during follow-up
14) Yorukoglu et al, Türkiye, 1993 [35]	Medial—excision	No	N/A	One cyst was infected. Thrombectomy was performed for thrombosis of superficial femoral vessels. Authors reported uneventful recovery but did not provide duration or method of follow-up
15) Arian and Kazerani, Iran, 2022 [70]	Medial—excision	No	12	No clinical evidence of recurrence was reported during follow-up
16) Durakbasa et al, Türkiye, 2007 [71]	Medial—FNA, excision	No	22	FNA was initially attempted because lesion was misdiagnosed as an abscess. No clinical evidence of recurrence was reported during follow-up
17) Özdemir et al, Türkiye, 2020 [72]	Medial—excision	No	N/A	No follow-up data were reported

Abbreviations: CT, computed tomography; FNA, fine-needle aspiration; MRI, magnetic resonance imaging; N/A, not available; US, ultrasound.

Table 3. Summary of studies regarding primary hydatid cysts of the anterior thigh compartment.

Study/country	No. of patients (N)	Age, years (mean)	Male/Female ratio	Clinical presentation	Diagnosis
1) Hamamci et al, Türkiye, 2004 [30]	2	N/A	-	N/A	US, CT
2) Orhan et al, Türkiye, 2023 [48]	11 (2 in thigh)	N/A	- (2 Female)	Painless mass	MRI or US
3) Comert et al, Türkiye, 2003 [40]	1	35	- (Female)	Painless mass (1 year)	MRI
4) Muratori et al, Italy, 2017 [73]	1	41	- (Male)	Painless mass	US, MRI
5) Siraj et al, Afghanistan, 2023 [74]	1	32	- (Female)	Painful mass (3 years)	US
6) Salih et al, Iraq, 2018 [75]	1	34	- (Female)	Painless swelling (9 months), abdominal pain	US
7) Patmano et al, Türkiye, 2022 [76]	8 (1 in thigh)	21	- (Female)	Pain and swelling	MRI
8) Buyukbebeci et al, Türkiye, 2004 [50]	1	20	- (Female)	Painful swelling	MRI
9) Thursky and Torresi, Australia, 2001 [29]	1	63	- (Male)	Painful swelling, fever, and pruritus	CT, aspiration
10) Shetty et al, India, 2024 [77]	1	42	- (Male)	Painful swelling	US, MRI
11) Perelman and Gottlieb, USA, 1961 [78]	1	61	- (Male)	Painless mass (4-6 months)	-
12) Kocakusak et al, Türkiye, 2004 [79]	1	37	- (Male)	Painless mass (4 years)	US, MRI
13) Karakas et al, Türkiye, 2013 [80]	1	30	- (Female)	Painless mass (3 months); pain during preceding week	US, MRI
14) Insabato et al, Italy, 2007 [81]	1	70	- (Female)	Painless mass (4 months)	MRI
15) Suryadevara et al, India, 2024 [82]	1	70	- (Male)	Painless swelling (2 years); recent onset of pain	US, MRI
16) Qaradaghy et al, Iraq, 2024 [83]	13 (1 with thigh involvement)	39	- (Female)	Painless mass (1 year)	US
17) Kazakos et al, Greece, 2005 [84]	1	35	- (Female)	Soft tissue mass	CT, MRI
18) Getie et al, Ethiopia, 2024 [85]	1	28	- (Female)	Painful swelling (4 months)	US, MRI, CT
19) Argy et al, France, 2013 [46]	1	60	- (Female)	Painful swelling (6 months)	US
20) Csotye et al, Hungary, 2011 [36]	1	39	- (Male)	Painful mass, inability to ambulate	CT
21) Togral et al, Türkiye, 2016 [53]	5 (1 in thigh)	51	- (Male)	Painful mass (4 years)	MRI
22) Kurz et al, Austria, 2019 [86]	1	37	- (Male)	Painless swelling (multiple years)	US, MRI

Table 3 continued. Summary of studies regarding primary hydatid cysts of the anterior thigh compartment.

Study/country	No. of patients (N)	Age, years (mean)	Male/Female ratio	Clinical presentation	Diagnosis
23) Moretti et al, Italy, 2010 [33]	1	78	- (Female)	Painful mass (3 years)	US, CT, MRI
24) Savas et al, Türkiye, 2004 [87]	4 (1 in thigh)	48	- (Male)	Painless mass	US, MRI
25) Ozkoc et al, Türkiye, 2003 [88]	1	48	- (Male)	Painless mass (10 years)	US, MRI
26) Koc et al, Türkiye, 2004 [59]	1	23	- (Male)	Painful mass (6 months)	US
27) Pathak et al, India, 2011 [89]	1	30	- (Female)	Painless swelling (4 years)	MRI
28) Bikkumalla et al, India, 2024 [90]	1	81	- (Male)	Painless swelling (1 year)	US
29) Elmassoudi et al, Morocco, 2025 [91]	1	68	- (Male)	Painless swelling (18 months)	US, MRI
30) Goel et al, India, 2024 [92]	1	N/A	- (Male)	Painless swelling (4 years)	US, MRI
31) Lahkhm et al, Morocco, 2021 [93]	1	45	- (Male)	Painless swelling	US, MRI
Study/country	Compartment/treatment	Liver involvement	Follow-up (months)	Outcome (thigh cyst)	
1) Hamamci et al, Türkiye, 2004 [30]	Anterior—excision and drainage; wide-margin excision was not possible	No	N/A	One recurrence occurred 12 months postoperatively	
2) Orhan et al, Türkiye, 2023 [48]	Anterior—excision	No	44.3 (range, 5-60)	No recurrence was reported during the stated follow-up period	
3) Comert et al, Türkiye, 2003 [40]	Anterior—excision	No	N/A	The patient had previously undergone aspiration. No follow-up data were reported	
4) Muratori et al, Italy, 2017 [73]	Anterior—excision	No	12	No recurrence or surgical complications were reported during follow-up	
5) Siraj et al, Afghanistan, 2023 [74]	Anterior—excision	N/A	12	No clinical evidence of recurrence or complications was reported	
6) Salih et al, Iraq, 2018 [75]	Anterior—excision; intrapelvic cysts treated with excision	No	N/A	N/A	
7) Patmano et al, Türkiye, 2022 [76]	Anterior—excision	No	12	No clinical evidence of recurrence was reported	
8) Buyukbeci et al, Türkiye, 2004 [50]	Anterior—excision	No	12	No recurrence or complications were reported	

Table 3 continued. Summary of studies regarding primary hydatid cysts of the anterior thigh compartment.

Study/country	Compartment/treatment	Liver involvement	Follow-up (months)	Outcome (thigh cyst)
9) Thursky and Torresi, Australia, 2001 [29]	Anterior—partial excision and scolical irrigation	No	18	Cyst was infected and initially drained. Wide excision was performed 1 week later. Postoperative course was complicated by anemia, hypotension, and wound infection. Local dissemination was successfully treated pharmacologically. Wound was closed with a skin graft. CT was performed during follow-up
10) Shetty et al, India, 2024 [77]	Anterior—excision	No	3	No clinical evidence of recurrence was reported during follow-up
11) Perelman and Gottlieb, USA, 1961 [78]	Anterior/medial—excision	N/A	36	No clinical evidence of recurrence was reported during follow-up
12) Kocakusak et al, Türkiye, 2004 [79]	Anterior—excision	No	N/A	No follow-up data were reported
13) Karakas et al, Türkiye, 2013 [80]	Anterior—excision	No	12	Infected cyst was treated preoperatively with antibiotics and anthelmintic therapy. No recurrence was reported during follow-up
14) Insabato et al, Italy, 2007 [81]	Anterior—excision after FNA	No	24	No clinical evidence of recurrence or surgical complications was reported during follow-up
15) Suryadevara et al, India, 2024 [82]	Anterior—excision	No	Unclear	No recurrence or surgical complications were reported during available follow-up period
16) Qaradaghy et al, Iraq, 2024 [83]	Unclear, likely anterior—excision	No	288 (24 years)	No recurrence was reported
17) Kazakos et al, Greece, 2005 [84]	Anterior—excision	No	36	No clinical evidence of recurrence or complications was reported
18) Getie et al, Ethiopia, 2024 [85]	Anterior—FNA followed by excision	No	12	Preoperative cyst rupture occurred. At 12 months postoperatively, there was no clinical evidence of recurrence
19) Argy et al, France, 2013 [46]	Anterior—excision	No	7	Cyst recurred 3 weeks postoperatively. PAIR was performed twice, but another pericystectomy was required 9 months postoperatively. Seven months after final surgery, there was no clinical evidence of recurrence
20) Csotye et al, Hungary, 2011 [36]	Anterior—complicated by pathologic basicervical fracture; excision and cemented total hip arthroplasty	No	12	No recurrence was reported during follow-up. Patient had been treated for an echinococcal cyst of femoral neck 8 years earlier

Table 3 continued. Summary of studies regarding primary hydatid cysts of the anterior thigh compartment.

Study/country	Compartment/treatment	Liver involvement	Follow-up (months)	Outcome (thigh cyst)
21) Togral et al, Türkiye, 2016 [53]	Anterior—excision	No	30	Recurrence was noted at 2-year follow-up and treated conservatively with albendazole
22) Kurz et al, Austria, 2019 [86]	Anterior—excision	No	24	Postoperative seroma resolved spontaneously. No clinical evidence of recurrence was reported at follow-up
23) Moretti et al, Italy, 2010 [33]	Anterior/medial—excision	No	20	Recurrence with intraosseous extension and subsequent intertrochanteric fracture occurred 14 months postoperatively. This was treated with proximal femoral resection and prosthetic replacement. Anthelmintic therapy was not administered before or after index procedure
24) Savas et al, Türkiye, 2004 [87]	Anterior—excision	No	7	No clinical evidence of recurrence was reported during follow-up
25) Ozkoc et al, Türkiye, 2003 [88]	Anterior—excision	No	7	No complications or recurrence were reported
26) Koc et al, Türkiye, 2004 [59]	Anterior—excision	No	18	US was performed during follow-up. No recurrence was reported
27) Pathak et al, India, 2011 [89]	Anterior—excision	No	12	No clinical evidence of recurrence or complications was reported during follow-up
28) Bikkumalla et al, India, 2024 [90]	Anterior—excision after FNA	No	3	No clinical evidence of recurrence was reported during follow-up
29) Elmassoudi et al, Morocco, 2025 [91]	Anterior—no treatment yet	N/A	N/A	N/A
30) Goel et al, India, 2024 [92]	Anterior—excision	No	1	No clinical evidence of recurrence or complications was reported during follow-up
31) Lahkhm et al, Morocco, 2021 [93]	Anterior—excision	No	N/A	No follow-up data were reported

Abbreviations: CT, computed tomography; FNA, fine-needle aspiration; MRI, magnetic resonance imaging; N/A, not available; PAIR, puncture, aspiration, injection, and reaspiration; US, ultrasound.

Table 4. Summary of case series regarding primary thigh hydatid cysts with more than 1 compartment.

Study/country	No. of patients (N)	Age, years (mean)	Male/Female ratio	Clinical presentation	Diagnosis
1) Arazi et al, Türkiye, 2005 [4]	15 (3 in thigh)	N/A	N/A	Palpable mass	N/A
2) Gonder et al, Türkiye, 2021 [9]	9	31.5 (range, 20-45)	0.5	Thigh pain and swelling	US, CT, MRI
3) Simsek and Hattapoglu, Türkiye, 2021 [94]	3 (2 in thigh)	33.5 (thigh patients)	1	Swelling	MRI
4) Madhar et al, Morocco, 2011 [49]	7	30 (range, 19-56)	0.16	Thigh swelling (mean duration, 1 year)	US, MRI
5) Gougoulas et al, Greece, 2010 [10]	9 (6 in thigh)	59.3 (range, 48-75)	8	Painful thigh mass	MRI
6) Tekin et al, Türkiye, 2015 [57]	22 (2 adults with primary thigh cysts)	23.5	- (2 Female)	Swelling	US, CT, MRI
7) Martin et al, Spain, 1993 [19]	3 (2 in thigh)	39.5	1	Swelling	US, MRI, CT
8) Merkle et al, 1997 [27]	8 (4 in thigh)	30.5	3	Pain and swelling; 1 pathologic fracture due to osseous involvement	CT, MRI
Study/country	Compartment/treatment	Liver involvement	Follow-up (months)	Outcome (thigh cyst)	
1) Arazi et al, Türkiye, 2005 [4]	2 anterior, 1 medial—excision	No	19	No recurrence was reported in patients with muscular involvement after excision	
2) Gonder et al, Türkiye, 2021 [9]	5 anterior, 1 medial, 3 posterior—excision	No	62 (range, 20-170)	Superficial wound infection occurred in 2 patients; it was managed with debridement and antibiotics. US and MRI were used during follow-up. No recurrences were detected	
3) Simsek and Hattapoglu, Türkiye, 2021 [94]	1 medial, 1 anterior/medial	No	N/A	No follow-up data were reported	
4) Madhar et al, Morocco, 2011 [49]	4 medial, 3 anterior—excision	No	20	No recurrence was detected during follow-up; this was confirmed by US	
5) Gougoulas et al, Greece, 2010 [10]	4 anterior, 2 posterior—excision	No	12-96	No complications or recurrence were reported	
6) Tekin et al, Türkiye, 2015 [57]	N/A—excision	No	6, 24	No recurrence was reported. US or MRI was performed during follow-up	
7) Martin et al, Spain, 1993 [19]	1 medial, 1 posterior—excision	N/A	N/A	No follow-up data were reported	
8) Merkle et al, 1997 [27]	At least 1 medial; other compartments unclear	1 patient	N/A	N/A	

Abbreviations: CT, computed tomography; MRI, magnetic resonance imaging; N/A, not available; US, ultrasound.

and systemic symptoms are uncommon in patients without hepatic or pulmonary involvement [33].

Ultrasound or MRI usually provides reliable diagnostic information; otherwise, histopathologic examination may be necessary for definitive diagnosis [23]. Differential diagnoses include lipoma, hematoma, abscess, and soft tissue tumor. Imaging typically demonstrates well-defined, encapsulated cystic lesions; when present, the hallmark finding is multiple daughter cysts within a larger cyst [2,37]. Soft tissue calcification and swelling may be evident on plain radiographs [38]. Soft tissue hydatid disease can have variable appearances on CT. A typical finding is a sharply demarcated, fluid-filled, round lesion that may be unilocular or multiloculated and usually lacks contrast enhancement. In atypical cases, differentiation from an abscess or malignant tumor may be difficult [37]. Calcifications within the cyst may also strongly suggest echinococcal disease [37]. However, CT is mainly used to assess osseous and intra-abdominal disease or when ultrasound is suboptimal, such as in patients with obesity [26]. MRI is considered superior in most clinical settings and should be the preoperative imaging modality of choice when feasible [26]. Hydatid cysts typically show low signal intensity on T1-weighted sequences, high signal intensity on T2-weighted sequences, and a peripheral low-signal-intensity rim (rim sign) [39]. Collapsed cyst membranes may produce the water lily sign on MRI [40]. Peripheral contrast enhancement may also complicate differentiation from an abscess [27]. Except for the water lily sign, these findings were present on MRI scans from our patient.

Ultrasound is a reliable and readily available modality, particularly for hepatic cysts; it allows accurate diagnosis and staging, and it may have a role in the percutaneous treatment of cystic echinococcosis [26]. The World Health Organization Informal Working Group proposed a standardized cyst staging system for diagnostic and therapeutic purposes based on ultrasonographic morphology and the natural history of echinococcosis, with slight modifications to the classification originally proposed by Gharbi et al [41,42]. The stages are grouped as follows: the active group includes viable unilocular cysts (CE1) and multiloculated cysts with daughter vesicles (CE2); the transitional group includes cysts with endocyst detachment (CE3a) and predominantly solid cysts containing daughter vesicles (CE3b); and the inactive group (CE4 and CE5) includes predominantly solid or calcified cysts that are generally nonviable [41,42]. According to this classification, the cyst in our patient was CE2, indicating an active cyst. This classification may be applied to extrahepatic cysts; however, it may not unequivocally determine treatment in extrahepatic locations [43].

Serologic testing may aid in diagnosis and includes methods such as enzyme-linked immunosorbent assay, immunoelectrophoresis, immunoblotting, immunofluorescent antibody testing,

and indirect hemagglutination for detection of IgG antibodies and echinococcal antigens [44]. However, these tests have variable sensitivity and specificity, may yield inconclusive results, and are not universally used in clinical practice [23,44]. The intradermal Casoni test also has variable diagnostic accuracy [44]. Although there was high clinical suspicion of an echinococcal cyst in our patient, we elected not to perform additional serologic testing because the results would not have altered the plan to excise the entire soft tissue mass with clear margins.

Because primary musculoskeletal hydatid disease is rare, no universally accepted treatment algorithm exists. Treatment is therefore individualized and may include percutaneous interventions; the absence of disease at other sites may permit curative excision. A watch-and-wait approach may be appropriate for inactive cysts and asymptomatic cysts approaching an inactive stage [25]. Surgery aims to remove as much parasitic tissue as possible, thereby reducing the risk of recurrence, although this removal may increase operative complexity. Complete removal of the cyst (pericystectomy), including its outer adventitial layer, while avoiding rupture and spillage is the operative goal [24]. Incisional biopsy without clear margins is contraindicated given the risk of cyst-content spillage and anaphylaxis; diagnostic aspiration is also controversial in this setting. Thus, preoperative diagnosis is essential to minimize the risk of cyst spillage and disease dissemination. In our patient, complete removal of the active cyst with clear margins was achieved despite its large size. Cyst-content spillage and related complications were avoided through prompt recognition of the inadvertent opening and immediate repair of the cyst wall.

Percutaneous treatment of cysts within extremity muscle compartments has been reported in the literature, with mixed results. Arslan et al treated an 11 × 9 cm posterior thigh hydatid cyst percutaneously using the PAIR technique [21]. The lesion was complicated by an abscess; the patient ultimately underwent surgery to evacuate the abscess and remove the remaining cyst components [21]. Similarly, Örmeci et al treated 3 patients with primary intramuscular hydatid cysts of the gluteal or calf region by puncturing the cyst, evacuating its contents, and injecting scolical ethanol without reaspiration [45]. The authors reported successful outcomes without local morbidity or recurrence during long-term follow-up. Argy et al used the PAIR technique twice to treat a recurrence in the anterior thigh compartment 3 weeks after pericystectomy; however, this approach failed, and the patient underwent an open procedure to treat the recurrence [46]. Finally, Akcam et al reported treatment of a large posterior thigh hydatid cyst using the PAIR technique, with post-procedural imaging demonstrating cyst regression; further follow-up results were unclear [20].

In contrast, open surgery permits removal of larger and complicated cysts [25]. Jrad et al reported excision of an infected

hydatid cyst within the biceps femoris muscle that was in contact with the femur [8]. Similar to the present case, Yasir et al removed a 15 × 12 cm echinococcal cyst from the posterior thigh of a 38-year-old woman. Because of its more caudal location, extending to the popliteal fossa, and its proximity to the common peroneal nerve, careful dissection and protection of the nerve were required [12]. No postoperative nerve injury was reported. Proximity to neurovascular structures may preclude complete pericystectomy, and marginal excision may leave residual cyst tissue [30]. In such cases, scolical agents combined with pharmacologic treatment may be beneficial [47]. Yorukoglu et al reported a complex case of a primary hydatid cyst in the adductor compartment requiring urgent surgery because compression of superficial femoral vessels caused lower-limb ischemia; 1 cyst also appeared to be infected [35]. Most other authors have documented successful removal of posterior compartment cysts without complications during the reported follow-up periods [6-14]. In our patient, MRI demonstrated that the hydatid cyst abutted the sciatic nerve (**Figure 1**) and was in close proximity to the posterior intermuscular septum, superficial femoral artery (11.6 mm), and profunda femoris artery. Intraoperatively, the cyst was easily separated from surrounding tissues; therefore, mobilization and dissection of the sciatic nerve along its course were unnecessary. Untreated cysts can become infected, compress adjacent tissues, or spontaneously rupture, potentially resulting in severe complications (eg, disease dissemination, compartment syndrome, anaphylaxis, or sepsis) [24,29,48]. Timely diagnosis and surgical treatment may help prevent these complications.

Although intraosseous echinococcal cysts are associated with high recurrence rates after treatment, intramuscular and intermuscular cysts have historically been associated with low recurrence and acceptable complication rates after wide excision, according to case series of thigh hydatidosis [4,9,49,50]. Other complications reported in the literature include cyst infection, local dissemination and recurrence, adjacent bone invasion, and fracture. Overall, wide excision combined with pharmacologic treatment has generally produced favorable outcomes during the reported follow-up periods; however, longer follow-up and imaging surveillance are essential to confirm treatment success [9].

Adjuvant pharmacologic treatment remains controversial. According to World Health Organization guidelines, for hepatic cysts larger than 10 cm, perioperative anthelmintic treatment with albendazole (10-15 mg/kg, up to 400 mg twice daily)—beginning up to 1 week before intervention—is recommended. Treatment should be continued uninterrupted, in contrast to earlier practice, for up to 3 months postoperatively; praziquantel may also be considered if intraoperative contamination with cyst contents occurs [43]. Perioperative and

postoperative anthelmintic therapy for primary thigh hydatidosis has not been standardized in the literature with respect to treatment initiation or duration. Our patient received albendazole during the first and third postoperative months; treatment was withheld during the second month as a precaution regarding hepatic function. This preplanned interruption reflected an earlier treatment paradigm [24]. Liver function test results remained within the normal range throughout the postoperative period. We did not initiate albendazole preoperatively because the diagnosis remained uncertain; theoretically, this may have increased the risk of intraoperative dissemination. For disseminated, inoperable hydatidosis, pharmacologic treatment alone has been reported to provide satisfactory disease control [51]. Pharmacologic therapy may be preferable in patients who are unfit for surgery or have multiple cysts; it may also have a role in recurrent or primary cyst management [52,53]. Notably, it might be necessary in settings where surgery is not available [1].

Histologic examination may identify cyst components such as the acellular laminated layer or germinal layer. Protoscolices may also be identified in mature hydatid cysts, and various stains can be used to improve visualization of hooklets [54]. Similarly, cyst fluid may be examined microscopically for protoscolices or hooklets [54]. We used hematoxylin and eosin staining of histologic sections, which revealed the acellular laminated layer of the cyst wall. Thus, the diagnosis was established through a combination of radiologic and histopathologic findings.

Scolical agents reported for intraoperative lavage include ethanol, 20% NaCl, hydrogen peroxide, formalin, phenol, silver nitrate, and chlorhexidine [4,12,36]. After the procedure, disinfection of the operating room with scolical agents such as 0.5% cetrimide may help prevent further echinococcal dissemination [30]. In the present case, the operating room was closed for disinfection with sodium hypochlorite. Because 20% NaCl solution was unavailable at our institution, we used 15% NaCl in conjunction with hydrogen peroxide. Laboratory studies have shown that 15% NaCl has a relatively weaker scolical effect and may require approximately 10 minutes to achieve complete protoscolex lethality [55,56]. Concerns have also been raised regarding sodium absorption and the development of hypernatremia, particularly during peritoneal lavage [55]; no such complication occurred in our patient.

Follow-up imaging at 3 to 6 months and then annually for up to 5 years has been recommended to ensure recurrence-free recovery, although no specific imaging modality is prescribed [43]. At 15 months postoperatively, our patient remained clinically well, without evidence of recurrence or surgery-related complications; however, follow-up imaging had not been performed. Although this outcome is encouraging, continued

surveillance in accordance with published recommendations is warranted to confirm long-term treatment success.

Strengths and Limitations

To our knowledge, the present literature review is among the most comprehensive studies of primary thigh hydatidosis, incorporating a large number of case reports and the few available relevant case series [4,9,10,19,30,49,57], despite the exceptional rarity of this condition among patients with cystic echinococcosis. Direct comparison among these studies is limited because they involve small numbers of individual patients treated at different centers, with varying perioperative and postoperative protocols and surgeon- and patient-related factors over several decades. Nevertheless, several observations can be made.

Among 70 studies concerning treatment of primary thigh hydatid cysts, only 47 provided follow-up data. Of these, 36 studies involving 57 patients reported follow-up of at least 1 year. We identified 6 studies reporting recurrence [29,30,33,46,52,53], in some cases more than 1 year after surgery. Two studies involving 3 patients used partial cystectomy and drainage [29,30], an approach that has been proposed to carry a greater risk of intraoperative spillage and secondary dissemination. The remaining recurrent cases had been treated via pericystectomy with [46,52,53] or without [33] adjunctive anthelmintic therapy. Nine studies used ultrasound, CT, or MRI during follow-up to assess potential recurrence [6,9,22,29,34,49,57-59]. These findings suggest that the true recurrence rate may be higher than previously considered and remains uncertain, despite reports that surgical excision combined with anthelmintic therapy is linked to a low relapse rate in muscular hydatid disease [4,9,36]. Accordingly, these data may contribute to a better understanding of the postoperative course after excision of muscular hydatid cysts. Maintaining a high index of suspicion for hydatid disease in selected patients with thigh soft tissue masses and an appropriate exposure history is important to avoid complications related to misdiagnosis. Future prospective studies with larger patient cohorts, long-term follow-up, and evaluation of risk factors for recurrence and treatment effectiveness are warranted.

Several limitations of our management should be acknowledged. The decision not to administer albendazole preoperatively may theoretically have increased the risk of intraoperative dissemination and recurrence. Despite strong clinical suspicion, albendazole was withheld because the diagnosis

had not been definitively established. Serologic testing was not performed preoperatively because it is most informative when results are positive, and findings may be negative in certain anatomic locations [23]; moreover, the results would not have altered our operative approach. Finally, no postoperative imaging was performed during the 15-month follow-up period. Long-term imaging-based surveillance remains necessary to confirm treatment success.

Conclusions

Our case report supports including hydatid disease in the differential diagnosis of selected painless extremity masses. Characteristic imaging features, such as a multiloculated cyst in a patient with agricultural exposure and no additional sites of involvement, should increase clinical suspicion for a primary intermuscular hydatid cyst despite the rarity of this lesion among soft tissue masses. The present case also illustrates the value of advanced preoperative imaging and demonstrates that en bloc excision was successful despite the large cyst size, site-specific challenges, and inadvertent cyst wall opening, which could have adversely affected the operative outcome. However, definitive confirmation of disease eradication requires long-term follow-up incorporating imaging according to recommendations in the literature.

Department and Institution Where Work Was Done

3rd Department of Orthopaedic Surgery, National and Kapodistrian University of Athens, KAT General Hospital, Athens, Greece.

Patient Consent

The patient provided written consent to the publication of this article.

Prior Presentation

Portions of this case were presented at the EFORT Congress in Malaga (May 2026).

Declaration of Figures' Authenticity

All figures submitted have been created by the authors who confirm that the images are original with no duplication and have not been previously published in whole or in part.

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