



Atypical hydatid cyst with psoas muscle location: Case report

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ABSTRACT

Atypical hydatid cysts are detected incidentally. They generally comprise 1–5% of all hydatid cysts. In particular, the peripheral muscles are involved. The literature states that it is seen in many parts of the body, including the iliac crest, psoas muscle, palm, and interdigital spaces. The clinical signs vary according to the involved locations, but wherever there is involvement, the lungs and liver, which are the most commonly involved sites, should be primarily investigated and diagnosed. Diagnosis should also be verified by serological and imaging methods, and it should be determined whether there is other organ involvement. Multidisciplinary management should be used for treatment of this disease. The key element of treatment is surgical. Cases of hydatid cyst with only right psoas muscle involvement are rare. We present this case report so that physicians may keep the definitive diagnosis in mind, as it is most frequently seen in the countryside in our country and it diminishes the workforce.

Key words: *Atypical location, psoas muscle, hydatid cyst*

Introduction

Atypical hydatid cysts are detected incidentally. They generally comprise 1–5% of all hydatid cysts [1,2]. In particular, the peripheral muscles are involved [3]. The literature states that involvement is observed in many parts of the body, including the iliac crest, psoas muscle, palm, and interdigital spaces [4]. The clinical signs vary with the location involved, but wherever there is involvement, the lungs and liver, which are the most commonly involved sites, should be primarily investigated and diagnosed. In addition, diagnosis should be verified by serological and imaging methods and it should be determined whether there is other organ involvement. The other impor-

tant feature of the atypical location is that it can sometimes cause the loss of vital organs (via nephrectomy, splenectomy), amputation, and even death [5]. Its frequency in one organ is quite rare, and it is generally found in two or three organs [6]. It is diagnosed by serological methods (Ig G-ELISA, indirect hemagglutination antibody test, and latex agglutination test) supported by imaging methods [7]. The key element of treatment is surgical.

It is rare to detect a hydatid cyst with only right psoas muscle involvement. We present this case report so that physicians may keep the definitive diagnosis in mind, as it is most frequently seen in the countryside in our country and it diminishes the workforce.

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Case Report

A 21-year-old male patient was referred to our general surgery department in Elazığ Military Hospital. Upon examination, there was no motor deficit in both lower extremities. On abdominal examination, there was sensitization in the right lower quadrant, and there was no resistance or rebound. His mean arterial pressure was 110/80 mmHg, pulse was 76 beat/min (rhythmic) and body temperature was 37°C. The patient received medical therapy for lower back pain and underwent a few sessions of physiotherapy before he was directed to our polyclinic due to complaints of nausea and weakness.

On abdominal ultrasonography (USG), a 10 × 10 cm hydatid cyst was detected within the psoas muscle. We performed whole-body scanning for hydatid cyst via abdominal–thoracic–cranial computed tomography (CT), which detected no hydatid cysts in other organs or tissues (Figure 1). The patient was prepared for surgery, and en bloc cyst resection was performed. He was discharged from hospital on the third postoperative day with a prescription for albendazole (2 × 400 mg/day) for three months as a result of non-development of postoperative complications (Figures 2 and 3).

Discussion

Echinococcus granulosus and *E. alveolaris* are the cestodes that most frequently cause hydatid cysts. It is an important parasitosis and is frequently seen in countries where agriculture and livestock raising are common and preventive medicine is inadequate. Involvement is most frequent in the liver (50–70%) and lungs (20–30%), but involvement of other organs is rare (10%) [1,2]. In 1965, Grassi classified cases of hydatid cyst in atypical locations according to frequency:

- Most frequent: kidney, spleen, bone, and muscle;
- Less frequent: brain, pancreas, diaphragm, thyroid gland, heart, breast, salivary gland, pelvic;
- Rare: prostate, pituitary gland, adrenal gland, lymph node, peripheral nerves, orbita, labium majus, and other organs [8,9].

The mechanism of hydatid cyst formation is not clear. However, two mechanisms have been suggested: Larvae cause encystations in the portal vein of the liver and a liver hydatid cyst forms. Survivors from the cyst

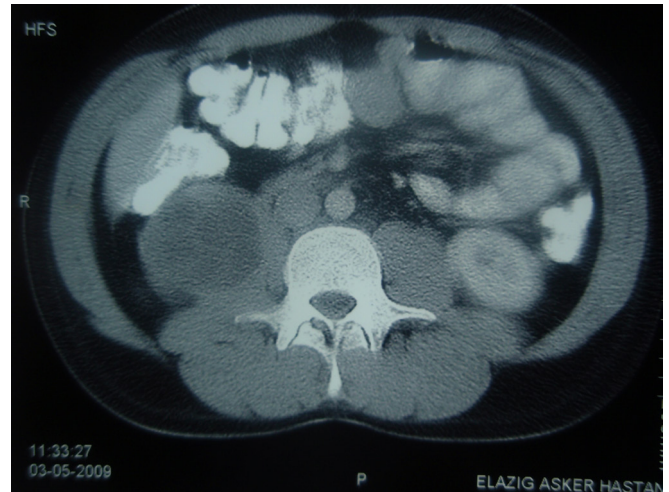


Figure 1. Hydatid cyst in right psoas muscle.

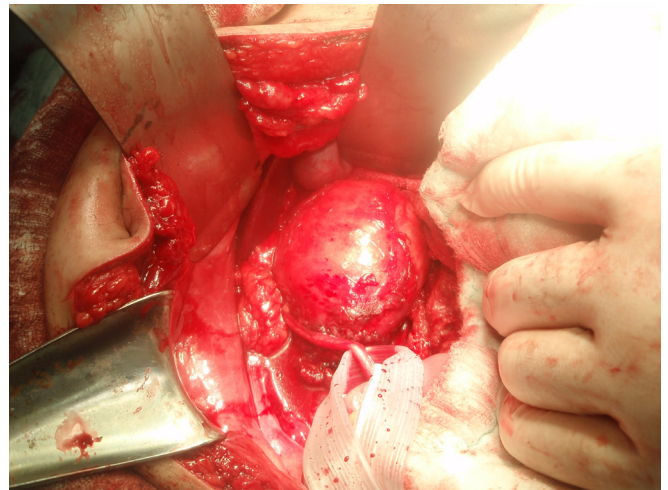


Figure 2. Intraoperative image of hydatid cyst in the right psoas muscle.



Figure 3. Postoperative image of hydatid cyst.

pass into the central circulatory system, and the first body part subsequently encountered is the lungs, followed by other organs. The other mechanism is known as transmural spread. Namely, larvae enter the mesenteric lymph circulation, pass into the venous circulation, and then spread to other organs [10]. Yet another theory, termed direct spread, involves the spread to adjacent organs through microrupture [11,12].

The clinical symptoms of atypical hydatid cysts

range from non-specific complaints to anaphylaxis and death. Clinical symptoms generally vary with the organ. The condition follows an asymptomatic course until some symptoms manifest after the growth of the cyst [13]. Untreated cysts follow three courses: 1) The parasite dies, the fluid disappears, the cuticle shrivels up, and new tissue forms. 2) The cyst component becomes infected, and serious symptoms that can result in death can be observed due to invasion of the cyst wall in to the intra-abdominal and intrathoracic space or the bronchia. 3) Death occurs following rupture. Spontaneous healing is rarely seen [14].

Diagnosis is made based on clinical findings (anamnesis and physical examination), and imaging methods and serological tests. Percutaneous and surgical samples can be obtained from the cyst fluid in non-diagnostic cases, but sampling is contraindicated if there is no suspicion [15].

Although USG does not have sufficient sensitivity for detecting small cysts, it is an invaluable imaging method that can be used for the diagnosis, classification, and follow-up of hydatid cysts. It also provides important information on cyst size and location, cyst adjacency to anatomical structures, cyst count, and characteristic of cyst ingredient [15]. Where USG cannot determine a definitive diagnosis for the lesion imaged, CT and magnetic resonance imaging (MRI) can be used in support of USG in order to determine whether there is other organ involvement. In our patient, a protruding cystic mass was incidentally detected within the psoas muscle adjacent to the lower pole of the right kidney on abdominal USG. CT scanning of the lungs, liver, and other organs was performed, and no involvement in these organs was observed.

CT captures cysts ≥ 1 cm in size and can potentially be used to evaluate every organ, and is a very useful imaging technique for definitive diagnosis. In the literature, the accuracy rate of CT diagnosis has been reported as 61–96% [16,17].

Serological tests can be used when there is no apparent clinical picture and imaging examination is inadequate for definitive diagnosis in the presence of a sterile cyst [18]. Serological tests were not needed for our case.

The primary treatment of this pathology that can re-

sult in serious consequences is surgical. The purpose of surgical treatment is to clean out the cyst components without causing any contamination, if any, disrupt contact between the cyst cavity and physiological spaces (biliary tracts and bronchia), and eliminate complications caused by the cyst. If a cyst can be removed (especially cysts with atypical location), it should be removed en bloc [19]. In our case, the mass within the right psoas muscle was removed en bloc from the abdomen without causing any contamination.

Conclusion

The literature contains reports on hydatid cyst involvement of many organs (seminal vesicle, appendix, orbita, femoral nerve). Definitive diagnosis of these organs should be made based on the common specific pathology, especially in endemic regions, where hydatid cysts should be taken into consideration. When a hydatid cyst detected, it should be determined whether other organs are involved in this pathology. Multidisciplinary management should be used in the treatment of this disease.

Conflict of interest statement

The authors have no conflicts of interest to declare.

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