Psoas abscess due to Brucellosis treated with Oral medication

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Abstract

Brucellosis is a zoonotic disease with high prevalence in the Middle Eastern countries. Psoas abscess is a rare complication of Brucellosis. A combination of antibiotic therapy and drainage is the recommended management. We present a 14-year-old male patient with this complication. He was treated with oral antibiotic without drainage.

Introduction

Brucellosis is originally an infectious disease of domestic and wild animals, caused by *Brucellae* , a small, nonmotile, and facultative intracellular aerobic rod. This infection is transmitted to humans via the consumption of infected unpasteurized animal products. Brucellosis is also considered an occupational infection among shepherds, dairy industry workers, and laboratory personnel. Endemic areas of Brucellosis include countries of the Mediterranean Basin, and the Middle East such as Iran, central Asia, and China (1). Therefore, those living in rural areas of endemic countries are at high risk of being infected. Development of symptoms and signs may be abrupt or insidious over several days to weeks. The symptoms are variable and nonspecific, including fever with variable patterns, night sweats, low back pain, malaise, and weight loss (1).

definitive laboratory criteria (not the case) for diagnosis are defined as either the positive culture of blood, body fluid, or tissue or a fourfold or greater rise in Brucella antibody titer [?] 2 weeks apart (1).

A case is confirmed as Brucellosis when a clinically compatible illness with definitive laboratory evidence of *Brucella* infection is found.

A presumptive diagnosis of Brucellosis is made by Brucella total antibody titer [?] 1:160 by Standard Tube Agglutination (SAT) or detection of Brucella DNA in a clinical specimen (1).

Complications of Brucellosis occur more frequently in adults than in children. These complications can affect any organ system including osteoarticular, genitourinary, neurologic, and cardiovascular systems. One of the rare complications of Brucellae spondylodiscitis is Psoas abscess (1).

Psoas abscess management consists of percutaneous or surgical drainage and antibiotic therapy. Antibiotics alone are considered unlikely to be curative unless the abscess is less than 3 cm in size (2).

We report a 14-year-old male patient with Psoas abscess due to Brucellosis which was treated successfully with oral antibiotics alone.

Case presentation

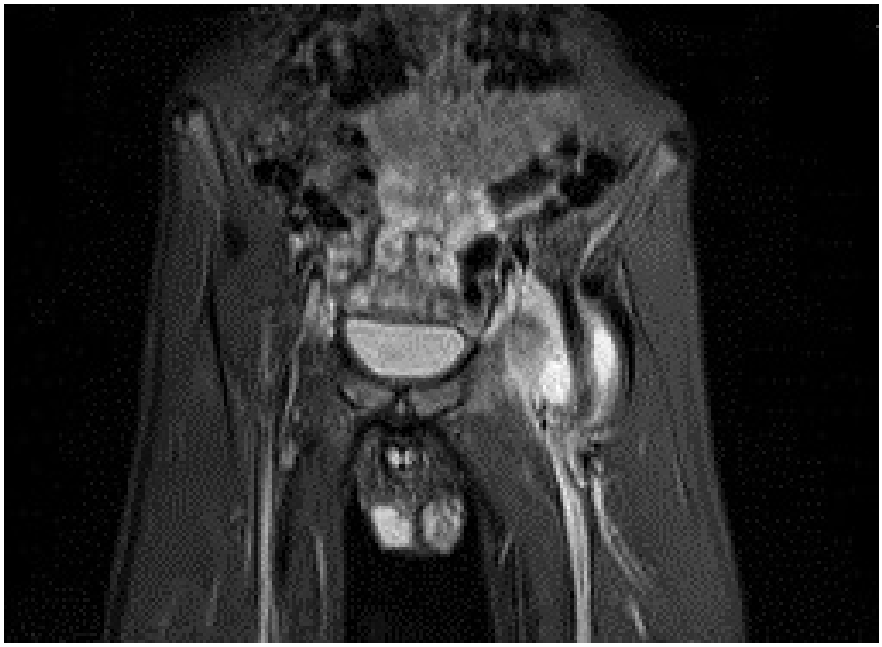
A 14-year-old boy was admitted to the hospital in February 2021 with a four-week history of malaise, fatigue, generalized muscular pain, night sweats, and significant weight loss, which started insidiously. He denied any history of previous illnesses. He was living in a rural area, and his father was a shepherd therefore he had regular contact with sheep. His father and his brother had a history of Brucellosis.

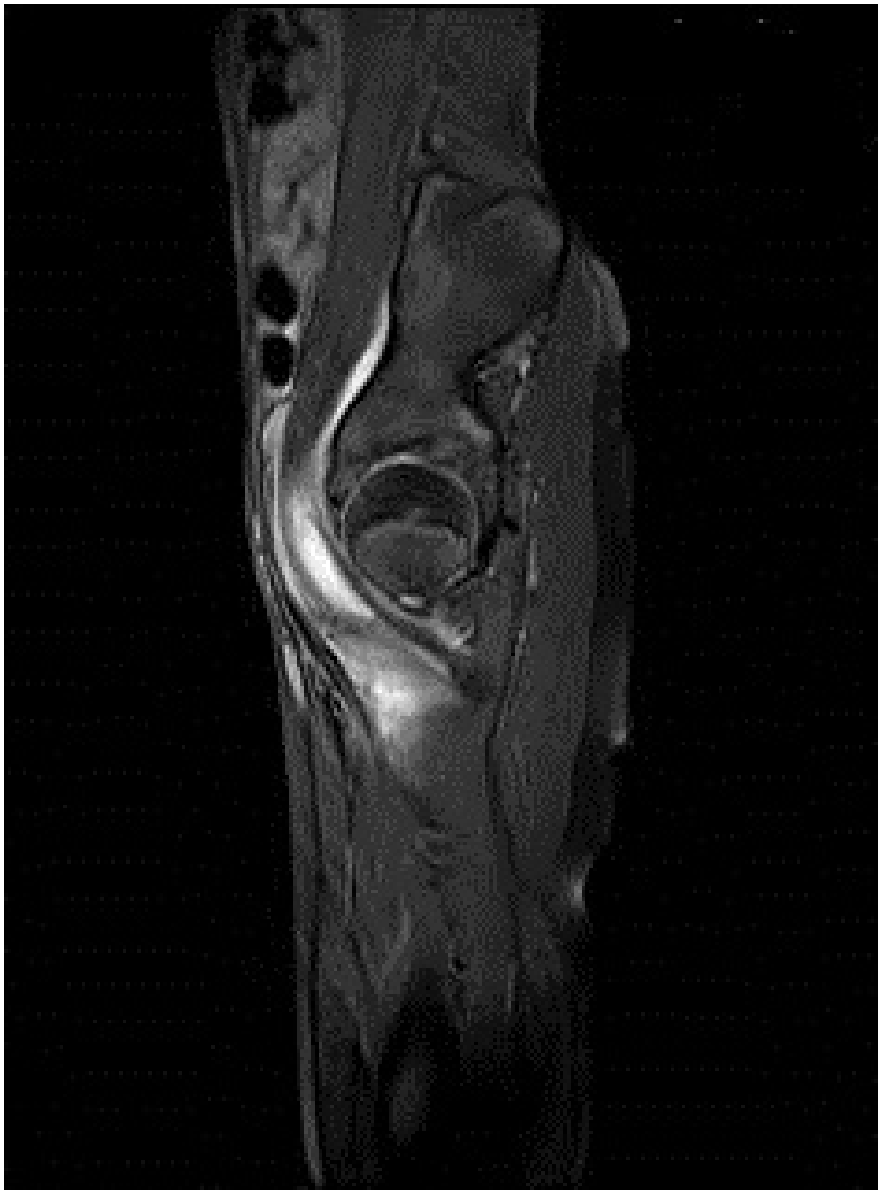
Three days before admission, severe pain was started in his left inguinal region leading to an abnormal gait. As to reduce the pain, he had used some analgesics, including Acetaminophen and Ibuprofen. At presentation, on physical examination, he appeared exhausted and ill. His body temperature was 37.5°c, and his pulse rate was 106 bpm. He also had an antalgic gait pattern. Tenderness on his left hip was detected. The Faber test was positive on the left side although, the internal rotation of the hip joint was intact. A painful left inguinal adenopathy was also detected.

The patient's laboratory tests demonstrated white blood cell count of 6600/ mm^3 (65% Neutophils, 35% Lymphocytes), hemoglobin concentration of 11.4 g/dl, platelet of 324000/mcL, ESR of 34 mm/hr and CRP of 3 mg/L. The Standard Tube Agglutination test for Brucellosis was 1/320, and the 2ME test was 1/160, which both were considered positive.

On the performed Ultrasound, the depth of the left hip joint capsule was 5.5 mm while the depth of the right hip joint capsule was 5 mm. on the left side and near the hip joint (3 mm of the joint capsule and 14mm of the skin surface) there was an echolucent area measuring 34*16*12 mm with thin septa, and the volume was almost 4 cc. According to these findings, more investigations were recommended.

On the Magnetic Resonance Imaging (MRI), there was edema and fluid collection within the left iliopsoas muscle and the left pectineus suggesting a Psoas abscess accompanied by a mild pre-capsular inflammation. However, both hip joints were normal and obvious evidence of effusion was not seen (figure 1).





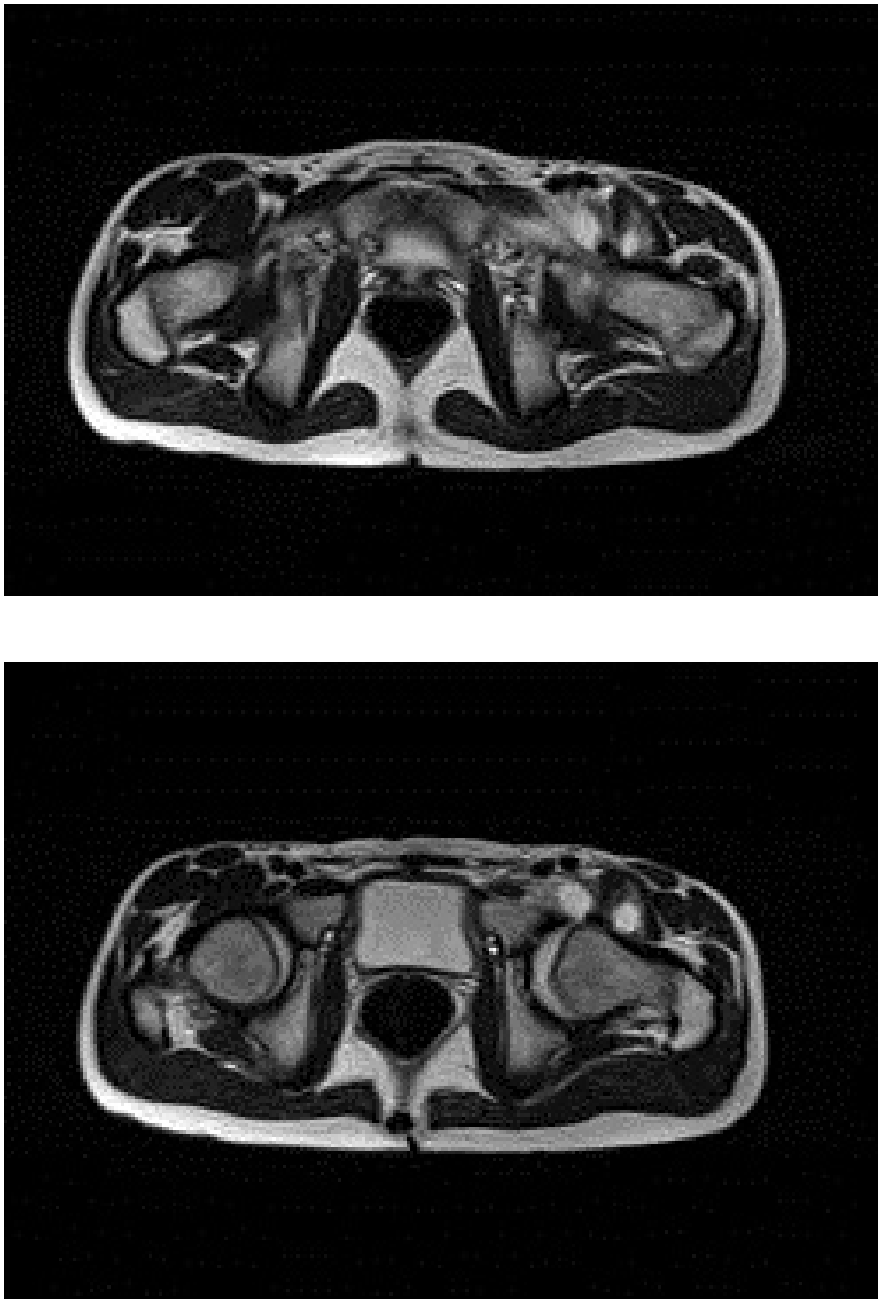


Figure1. Edema and fluid collection within left iliopsoas muscle and left pectineus with fluid collection within left iliopsoas muscle

No blood or bone marrow culture was performed due to the low chance of detection and the long time required (1). Based on these findings, the diagnosis of Brucellosis was made and according to the Textbook of Pediatrics Nelson (3,4), the patient was treated with Rifampin (600 mg/ daily) and Doxycyclin (200 mg/ q12h). Despite the consult of the orthopedic surgeon regarding surgical drainage, we waited to observe the patient's response to antibiotic therapy.

After the initiation of the medical treatment, the signs and symptoms of the patient started to resolve.

At discharge, the gait pattern of the patient was normal. He had no complaints of inguinal pain, fever, malaise, or any other symptoms.

In six months of follow-up, no relapse occurred. Ultrasound was performed and showed no evidence of Psoas abscess.

Therefore, the patient was treated successfully only with Oral medication and without any abscess drainage.

Discussion

Psoas abscess is the collection of pus in the iliopsoas muscle compartment and usually occurs secondary to renal, intestinal, or skeletal infection. Primary infection leading to psoas abscess is relatively rare although, it occurs more frequently among children and young adults and tends to be more common in developing countries (2)

Primary psoas abscess is frequently a single microorganism complication, including *Staphylococcus aureus,* and *Mycobacterium tuberculosis* , and may also occur due to Brucella spondylodiscitis. Although CT scan is the modality of choice when a psoas abscess is suspected, in rare etiologies of psoas abscess like Brucellosis, MRI can provide more detailed data and is the method of choice in these circumstances (2).

In our case, according to the prevalence of Brucellosis in Iran as an endemic region, serology and MRI were sufficient, enabling us to make the final diagnosis.

Although abscess drainage regardless of the causative microorganism is the recommended treatment for the psoas abscess in many studies and guidelines and antibiotics alone are not considered curative unless the abscess is small (<3mm) (2), a study conducted by Tabrizan et al. revealed that using Antibiotics alone in iliopsoas abscess management has a success rate of 78% (5). It is also recommended by Yacob et al. in a study in 2009 that treatment of Psoas abscesses should be initiated with antibiotics and small abscesses should be treated with antibiotics alone (6).

In our case, the abscess was about 34*12*16mm, which was relatively small. This case highlights that small psoas abscesses could be treated successfully using oral antibiotics and no drainage.

Conclusion

In summary, psoas abscess due to Brucellosis is a rare complication although, it occurs more frequently in the younger population and developing countries (2). Its clinical manifestation may be quite different from those due to other microorganisms; therefore, a high clinical suspicion is required.

Serology and imaging may be sufficient to diagnose this complication in some cases, particularly in highly endemic areas. Although drainage of the psoas abscess is the recommended treatment, small abscesses are likely to be treated successfully by antibiotics alone.

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Conflict of interest

The authors declare that there is no Conflict of interest regarding the publication of this case report.

AUTHOR CONTRIBUTION

Iraj Sedighi involved in the management of patients. Taravat Sadrosadat, shahrzad shokri,sara allahkarami and Iraj Sedighi contributed for data gathering and preparing the article.

ETHICAL APPROVAL

Written informed consent was obtained from the patient's parent to publish this report in accordance with the journal's patient consent policy. This study was approved by ethics committee at Hamadan University of Medical Sciences. (Approval ID: IR.UMSHA.REC.1401.104).

CONSENT

Written informed consent was obtained from the patient's parent to publish this report in accordance with the journal's patient consent policy.

DATA AVAILABILITY S TATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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