Case Report

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# A Young Man with Fever and Flank Pain

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**ABSTRACT**

Osteoarticular involvement is a relatively common presentation of brucellosis, but muscular involvement and psoas abscess are a rare complication which almost always is secondary to spondylitis. We report a rare case of brucellosis presenting with psoas abscess or without any osteoarticular involvement.

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## Introduction

Psoas abscess is a collection of pus in the iliopsoas muscle compartment (1). The classical triad of fever, flank pain, and limitation of the movements of hip joint is readily present only in 30% of all patients (2). They are more common in tropical and developing countries. In Asia and Africa, 99% of psoas abscesses are primary; in Europe and North America, 17-61% is primary. About 70% of all cases are younger than 20 years of age with a male to female ratio of 3:1 (3). 57% of the cases are right sided, 40% are left sided, and only 3% are bilateral (4). We report a rare case of psoas abscess caused by *Brucella*.

## Case Report

A previously healthy 18-year-old male, Afghani immigrant hospitalized in General Internal Ward of Imam Khomeini Hospital with complaints of fever, chills, and left flank pain for 2-3 weeks duration. The pain was persistent during the day and it had no radiation to groin. The fever was not associated with diaphoresis. There was no gross hematuria and dysuria.

There was no cough or dyspnea or pleuritic

chest pain. The patient had used non pasteurized dairy in the past.

Physical examination revealed a temperature of 39.2° C orally, blood pressure of 110/70 mmHg, pulse rate 110 beats/min, and respiratory rate 18/min. There was a decreased breath sounds in the base of left lung and tenderness of left paravertebral and costovertebral angle.

Sonography revealed a heterogeneous and liquefied lesion with the diameter of 80 mm × 32 mm in the posterior part of the left kidney. It seems to involve the left psoas muscle. Left pleural effusion also was seen. Liver and spleen size were normal.

Abdominal computed tomography scan showed a localized left psoas soft tissue mass that suggested abscess formation (Figures 1 and 2).

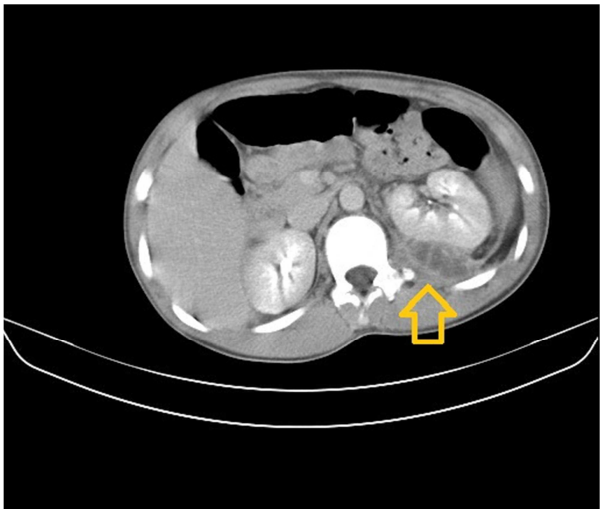

**Figure 1.** Left psoas abscess in computed tomography scan

Magnetic resonance study of thoracolumbar spine after abscess drainage was showed vertebral alignment and intervertebral disc spaces, posterior elements, and nerve root canals were normal (Figure 3). Abnormal signal intensity was seen in left psoas muscle and left paravertebral.

Echocardiography showed normal left and right ventricle function. Ejection fraction was 50%. Mild to moderate pericardial effusion was seen.

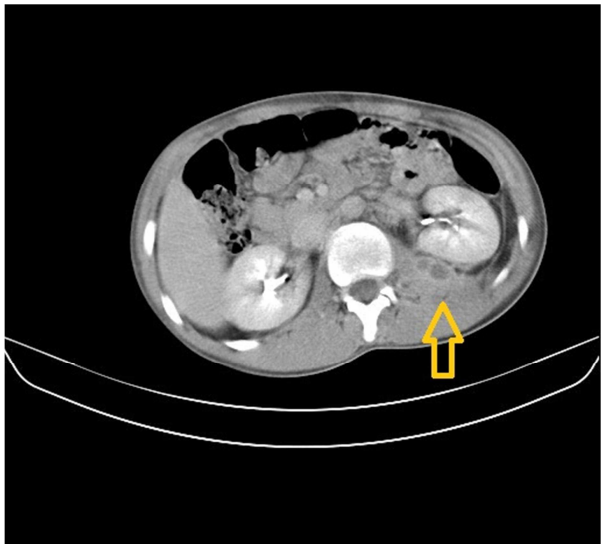

**Figure 2.** Left psoas abscess in computed tomography scan

Laboratory test showed white blood cell 2300/mm$^3$, hemoglobin of 7.8 mg/dl, platelet of 600,000 mm$^3$, high levels of C-reactive protein (33 mg/L), and an erythrocyte sedimentation rate of 117 mm/h. Urine analysis was normal.

**Figure 3.** Magnetic resonance study of thoracolumbar spine after abscess drainage was showed vertebral alignment and intervertebral disc spaces were normal

Urine and blood culture result was negative. Standard tube wright agglutination test and 2-mercapto ethanol test were negative but Coombs wright test was positive with 1/20 titer that finally the *Brucella*-specific enzyme-linked immunosorbent assay showed high titer [Immunoglobulin (Ig) G (66.5 U/ml) and IgM (8.6 U/ml)] and confirmed Brucellosis.

Serum agglutination tests are the modality for which there is the greatest published experience and remain the reference for diagnosis of brucellosis. Enzyme-linked immunosorbent assay (ELISA) is the second most common serologic method utilized in evaluating patients with suspected *Brucella* infections. ELISA is rapid and highly sensitive and specific.

The pattern of pleural fluid was exudative. Adenosine deaminase of pleural fluid was normal range (8.7 IU/L) and smear and culture for bacteria and acid-fast bacilli were negative.

Tuberculosis (TB) and malignancy were negative in analysis of bone marrow aspirates and biopsy. Percutaneous abscess drainage was performed and pus coming out and fever stops after 48 hours. Microscopic examination of abscess material was negative.

The patient was treated with oral rifampin (600 mg once daily) and doxycycline (100 mg twice daily) for 12 weeks and intramuscular gentamycin for 1 week. Pericardial and pleural effusion and bicytopenia resolve within 2 months.

## Discussion

Psoas abscesses divided into primary and secondary abscesses consistent with pathogenesis. Primary psoas abscess occurs as a result of hematogenous or lymphatic seeding from a distant site that may be occult (3, 5, 6). Secondary psoas abscess occurs as a result of direct spread of infection to the psoas muscle from an adjacent structure. These structures may include the vertebral bodies and discs, the hip joint, the gastrointestinal tract, the genitourinary tract, vascular structures, and other sites (3, 5-7). Secondary psoas abscess may be monomicrobial or polymicrobial. Primary psoas abscesses are most frequently due to infection with a single organism (8).

The most common bacterial cause of primary psoas abscess is *Staphylococcus aureus* including methicillin-resistant *S. aureus* (3, 7). *Mycobacterium* TB is also a frequent cause of psoas abscess in areas where TB is common (1, 5). Psoas abscess is rarely reported in brucellosis and almost always secondary to spondylitis. Psoas abscess due to *Brucella* without any osteoarticular involvement was reported in few cases (9-11).

Brucellosis is a systemic infection with a broad clinical spectrum, ranging from asymptomatic disease to severe and/or fatal illness (12). Clinical and laboratory features vary widely (13). The main presentations are acute febrile illness with or without signs of localization (osteoarticular, genitourinary, pulmonary, gastrointestinal, hematological abnormalities, neurological, cardiac, and dermatologic) and chronic infection (14). Brucellosis is endemic in certain parts of Iran. The prevalence of brucellosis in Iran has been reported as 0.5-10.9% in different provinces (15).

Cultural examinations for diagnosis of brucellosis are time-consuming and not sensitive. Thus, clinicians often rely on the indirect tests. The detection of high or rising titers of specific antibodies helps for diagnosis. A variety of serological tests has been applied, but at least, two serological tests have to be combined to avoid false negative results. Usually, the serum agglutination test is used for a first screening and Coombs' test will confirm its results. As *Brucella* ELISAs are more sensitive and specific than other serological tests, they may replace them (16).

In this case, there was bicytopenia, pericardial effusion and psoas abscess without spondylitis. There was no involvement of spine, gastrointestinal and urinary tract that suggested uncommon and unusual organism for this patient. Laboratory results were

negative for TB but serologic tests were positive for brucellosis. For treatment, percutaneous abscess drainage was done and rifampin, doxycycline, and gentamycin were started. Complete resolution of symptoms achieved within 2 months.

## Conflict of Interests

Authors have no conflict of interests.

## Acknowledgments

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## References

1. Mallick IH, Thoufeeq MH, Rajendran TP. Iliopsoas abscesses. Postgrad Med J 2004; 80(946): 459-62.
2. Chern CH, Hu SC, Kao WF, Tsai J, Yen D, Lee CH. Psoas abscess: making an early diagnosis in the ED. Am J Emerg Med 1997; 15(1): 83-8.
3. Ricci MA, Rose FB, Meyer KK. Pyogenic psoas abscess: worldwide variations in etiology. World J Surg 1986; 10(5): 834-43.
4. Bresee JS, Edwards MS. Psoas abscess in children. Pediatr Infect Dis J 1990; 9(3): 201-6.
5. Muckley T, Schutz T, Kirschner M, Potulski M, Hofmann G, Buhren V. Psoas abscess: the spine as a primary source of infection. Spine (Phila Pa 1976) 2003; 28(6): E106-E113.
6. Santaella RO, Fishman EK, Lipsett PA. Primary vs secondary iliopsoas abscess. Presentation, microbiology, and treatment. Arch Surg 1995; 130(12): 1309-13.
7. Navarro Lopez V, Ramos JM, Meseguer V, Perez Arellano JL, Serrano R, Garcia Ordonez MA, et al. Microbiology and outcome of iliopsoas abscess in 124 patients. Medicine (Baltimore) 2009; 88(2): 120-30.
8. Lin MF, Lau YJ, Hu BS, Shi ZY, Lin YH. Pyogenic psoas abscess: analysis of 27 cases. J Microbiol Immunol Infect 1999; 32(4): 261-8.
9. Cubukcu S, Gurbuz U, Cvkol C, Aktan F, Tuncer T. Primary psoas abscess presented only with low back pain. Turk J Phys Med Rehab 2006; 52: 137-40.
10. Dudler J, Balague F, Waldburger M. Bilateral primary brucellar psoas abscess. Br J Rheumatol 1994; 33(10): 988-90.
11. Gundes SG, Gundes H, Sarlak A, Willke A. Primary brucellar psoas abscess: presentation of a rare case of psoas abscess caused by Brucella melitensis without any osteoarticular involvement. Int J Clin Pract Suppl 2005; (147): 67-8.
12. Colmenero JD, Reguera JM, Martos F, Sanchez-De-Mora D, Delgado M, Causse M, et al. Complications associated with Brucella melitensis infection: a study of 530 cases. Medicine (Baltimore) 1996; 75(4): 195-211.
13. Bosilkovski M, Krteva L, Dimzova M, Vidinic I, Sopova Z, Spasovska K. Human brucellosis in Macedonia - 10 years of clinical experience in endemic region. Croat Med J 2010; 51(4): 327-36.
14. Pappas G, Akritidis N, Bosilkovski M, Tsianos E. Brucellosis. N Engl J Med 2005; 352(22): 2325-36.
15. Sofian M, Aghakhani A, Velayati AA, Banifazl M, Eslamifar A, Ramezani A. Risk factors for human brucellosis in Iran: a case-control study. Int J Infect Dis 2008; 12(2): 157-61.
16. Al Dahouk S, Tomaso H, Nockler K, Neubauer H, Frangoulidis D. Laboratory-based diagnosis of brucellosis--a review of the literature. Part II: serological tests for brucellosis. Clin Lab 2003; 49(11-12): 577-89.