

Psoas Abscess with Septic Arthritis of the Hip in a Patient with Chronic Back Pain

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Abstract Psoas abscess is a rare clinical entity that requires early diagnosis and timely intervention to avoid serious complications of the disease. We report a case of psoas abscess that presented initially as low back pain then complicated with septic arthritis. We discuss the clinical diagnosis, intervention and follow up of the case along with review of the literature. This important clinical entity that generally presents with vague signs and symptoms leads to a delay in diagnosis and timely intervention.

Keywords: Psoas abscess, septic arthritis, chronic low back pain

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1. Introduction

Chronic back pain is a common presentation at Emergency Departments and office visits [1]. One of the rare causes of back pain is psoas abscess. The presentation of psoas abscess is variable and may be confused with other inflammatory processes such as septic arthritis and osteomyelitis. In some cases, it can also manifest as a feature of chronic sciatica. Due to its varied symptomatology, it is important that the suspicion of psoas abscess follow a prompt diagnosis using imaging modalities necessary to distinguish a psoas abscess from other conditions. A delayed diagnosis and inadequate treatment is associated with high risk for mortality due to septicemia [2]. Therefore, it is crucial to consider psoas abscess in the differential diagnosis of patients complaining of low back pain with fever. Here we are presenting a 63-year-old woman with chronic back pain and history of multiple injections by pain management to her lumbar spine.

2. Report of the Case

A 63-year-old morbidly obese woman with past medical history of hypertension, chronic sciatica with recurrent admissions for back pain who arrived to our emergency department with a 5-day history of right sided lumbar pain. She described pain as worsening of her chronic pain radiating from her right hip joint down the posterior thigh and knee. She denied chills, urinary and fecal incontinence or retention.

Physical examination revealed febrile with a temperature of 100.9°F, morbidly obese woman (BMI 63), with no sign of skin erythema or swelling and no tenderness on palpation at her lumbar spine, right hip joint and her abdomen. Laboratory results demonstrated leukocytosis of 16,000 cells/mcL (Normal Value 4000-9000 cells/mcL) with neutrophilia to 85% (Normal Value 40-70%), C-reactive protein (CRP) level of 297 mg/L (Normal Value <5mg/L) and Erythrocyte Sedimentation Rate (ESR) level >130 mm/hr (Normal Value <29mm/hr).

Initial radiograph of right hip and spine only showed osteoarthritic changes. CT scan of abdomen and pelvis with contrast demonstrated a 5 cm fluid collection within the right iliopsoas muscle with a small focus of air. (Figure 1) The patient underwent percutaneous computed tomography (CT) guidance drainage of the iliopsoas abscess with successful placement of drainage catheter with 180 ml of purulent material aspirated in total.

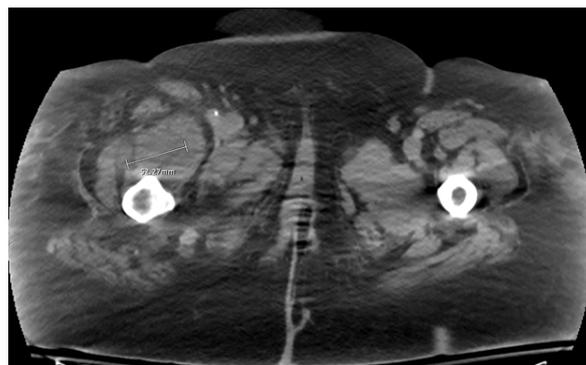


Figure 1. fluid collection/hematoma within the right iliopsoas muscle. It measures approximately 5 cm axially

Two days after drainage, *Streptococcus agalactiae* was cultured from the specimen and intravenous antibiotics were tailored according to sensitivity. Four days post-drainage, patient became afebrile and her white cell count decreased down to 9,400 cells/mcL. (Table 1). Follow up CT scan of pelvis with contrast showed destructive changes in the head of the right femur with associated rim-enhancing fluid collections adjacent to posterior aspect of the right ilium. and significantly reduced right iliopsoas abscess size. (Figure 2) She was referred to rehabilitation center to complete antibiotics for septic arthritis and outpatient follow up with infectious disease and orthopedics services.

Table 1.

	White Blood Cells	C-reactive protein (CRP)	Erythrocyte Sedimentation Rate (ESR)
Day 1	16,000 cells/mcL	297 mg/L	>130 mm/hr
Day 4	9,400 cells/mcL	64.3 mg/L	110 mm/hr



Figure 2. acute on chronic destructive changes in the head of the right femur with associated rim-enhancing fluid collections, the largest of which measures 2.7 x 5.0 x 4.6 cm, adjacent to posterior aspect of the right ilium. Significant reduction of right iliopsoas abscess size

3. Discussion

Back pain is a common presentation in Emergency Department and Outpatient setting. It was estimated that 84% of adult population has experienced back pain at least once in their lifetime. [1] Approximately, 1.4% of office visits in United States was primarily related to back pain. [3] There is a wide differential diagnosis for a presentation of a low back pain, of which psoas abscess is a rare entity.

Psoas major muscle is a muscle of the back originated from the last thoracic vertebra down to the last lumbar vertebra, then combined with iliacus muscle to be inserted at the lesser trochanter of the femur. [4] Psoas abscess is a collection of purulent materials within psoas sheath and can be primary or secondary. Primary psoas abscess is of unknown origin and related to hematogenous or lymphatic spread from another distant origin. In United States, 17-61% of psoas abscesses are primary [1] and usually occurs in immunocompromised populations. [2] Secondary psoas abscess is related to direct spread of infection from adjacent structures like vertebrae, colon, urinary tract and vascular system. The causative organism in poses abscess is typically *Staphylococcus aureus* which accounts for around 88% of the cases, followed by *Escherichia coli* and *Streptococcus*. However, secondary psoas abscess can be

polymicrobial, typically involving intestinal flora. [5] The mortality in secondary psoas abscesses (18.9%) is higher than primary (2.4%) [6].

The clinical picture of psoas abscess is nonspecific. The most common complaint is lower back pain and fever, malaise, weight loss, fatigue and abdominal pain radiating to the hip. Laboratory tests are also nonspecific and usually associated with high white blood cell count and elevated inflammatory markers. [7] The Imaging modality of choice is CT scan with IV contrast. [8].

The management of psoas abscess combines broad spectrum antibiotics and drainage of the abscess either by CT-guided percutaneous drainage or surgical evacuation. [9] Without drainage, the mortality rate is almost 100% due to sepsis. [2] Antibiotics should be tailored according to sensitivity.

Complications associated with psoas abscess are sepsis, involvement of adjacent structures leading to septic arthritis, as in our case. Compression of surrounding structures leading to hydronephrosis, ileus, deep venous thrombosis can also occur.

4. Conclusion

Diagnosis should be suspected in febrile patients with low back and/or hip pain, who have leukocytosis and fever. Once suspected in the imaging, empiric coverage of with intravenous antibiotics and drainage should be attempted as a definitive therapeutic measure.

Acknowledgements

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