

Primary Psoas Abscess Presented Only with Low Back Pain Sadece Bel Ağrısı ile Kendini Gösteren Primer Psoas Apresi

Sibel ÇUBUKÇU, Ülkü GÜRBÜZ, Can ÇEVİKOL*, Şükrü AKTAN**, Tiraje TUNCER

Departments of Physical Medicine and Rehabilitation, *Radiology, ** General Surgery, Faculty of Medicine, Akdeniz University, Antalya, Turkey

Summary

Psoas abscess is an entity that we rarely meet as a cause of low back pain. High grade fever, flank pain, and limitation of hip joint movements establish the classical triad of psoas abscess. Our patient had been complaining about a progressively worsening right low back pain radiating to his right leg for four months when he admitted to our outpatient clinic. Except for pain and weight loss (5 kg in 4 months) he did not have any other symptom. With radiological imaging studies and laboratory findings he was diagnosed to have psoas abscess. As we know, psoas abscess develops in a very short time and causes mortality if it is not diagnosed and treated appropriately. *Türk J Phys Med Rehab 2006;52:137-40*

Key Words: Psoas abscess; low back pain

Özet

Psoas apresi nadiren karşılaştığımız bir bel ağrısı nedenidir. Yüksek ateş, yan ağrısı ve kalça hareketlerinde kısıtlılık psoas absesinin klasik triadını oluşturur. Polikliniğimize başvurduğunda hastamız dört aydır devam eden, gittikçe kötüleşerek sağ bacağına doğru yayılan bir bel ağrısından şikayetçiydi. Ağrı ve kilo kaybı (4 ayda 5 kg) dışında hiçbir semptomu yoktu. Radyolojik görüntüleme yöntemleri ve laboratuvar bulguları ile hastada psoas absesi teşhisi kondu. Bildiğimiz gibi psoas absesi çok kısa zamanda gelişir ve teşhis konup uygun tedavi başlanmaz ise mortaliteye sebep olabilir. *Türk Fiz Tıp Rehab Derg 2006;52:137-40*

Anahtar Kelimeler: Psoas apresi, bel ağrısı

Introduction

Primary psoas abscess is a rare infection which usually presents with non specific and unclear symptoms. Among all psoas abscesses, primary psoas abscesses are reported as 99.5% in Asia and Africa, 61% in United States and Canada, and 18.7% in Europe (1-3). About 70% of all cases are younger than 20 years of age with a male to female ratio of 3:1 (1). Fifty seven percent of the cases are right sided, 40% are left sided and 3% are bilateral (4). The classical triad of fever, flank pain, and limitation of the movements of ipsilateral hip joint is readily present only in 30% of all patients (5). Unless psoas abscess is diagnosed accurately and treated immediately mortality rate is quite high. We present the following case and imaging studies to emphasize a rare but surgically important cause of low back pain.

Case Report

A 43-year-old white man had been completely healthy until he experienced a dull ache in low back region radiating to his

right hip. He did not have any history of direct trauma, strenuous activity or infection recently. At the beginning his daily activities were not disturbed but in about four months he walked with a limp. He did not experience fever, nausea-vomiting, diarrhea or constipation during this period. He had a non contributory past medical history without smoking, alcohol or drug use. Before admission to our clinic, he was given bed rest, non steroidal anti-inflammatory drugs which were both ineffective.

On admission to our clinic vital signs were in normal range; his body temperature was about 36°C and in the follow-up never exceeded normal levels. In physical examination a localized, tender mass which was approximately 10x10 cm in diameter, was palpated on the right flank region (Figure 1).

Abdominal and pelvic examinations were normal without organomegaly or signs of peritoneal irritation. Musculoskeletal examination revealed back pain on flexion and extension. Movements of right hip joint, especially abduction and internal rotation were painful. There was no limitation in range of motion or localized warmth or tenderness in the affected hip joint. He had an antalgic gait. Neurological examination was also completely normal.

Laboratory investigations revealed elevated white blood cell count ($12.6 \times 10^9/l$ with 76% neutrophils, 16% lymphocytes, and 8% monocytes) and slightly elevated platelet count ($469 \times 10^9/l$). Erythrocyte sedimentation rate was 75 mm/h (normal <20 mm/h). Urine analysis, kidney and liver function tests were all within normal limits. Blood and urine cultures, stool for occult blood were all negative.

Anteroposterior and lateral radiographs of lumbar vertebrae showed increased soft tissue density projecting over the right psoas muscle and psoas shadow was effaced. Ultrasonography showed a large hypoechoic mass extending from lower pole of the right kidney to the right inguinal region containing internal echoes. Abdominal computed tomography (CT) confirmed the large hypodense cystic mass with a thick wall and showed involvement of right psoas, quadratus lumborum and posterolateral abdominal wall muscles on the right side (Figure 2). Vertebral bodies were normal. Magnetic resonance imaging (MRI) was performed for the evaluation of the spine and the mass. Spine examination was normal and there was no relation with the mass. The mass was $18 \times 8 \times 7$ cm in diameter. It was slightly hyperintense on T1-weighted images and hyperintense on T2-weighted images (Figure 3). Postcontrast images showed peripheral wall enhancement of the mass.

The diagnosis of psoas abscess extending to the surrounding soft tissue without involvement of the spine was established. Abscess was drained surgically. No microorganism could be isolated from the abscess material with routine cultures. In the follow-up period control ultrasonography and MRI were performed. MRI showed a residual collection ($2 \times 1 \times 1$ cm in diameter) between the quadratus lumborum and external oblique abdominal muscles on the right side. Posteroanterior radiographic examinations of lungs, lumbar and thoracic computed tomography (CT), and bone scanning revealed normal findings.

Since the patient's general condition was good and he had no fever, tuberculosis was thought to be a possible reason for the abscess but acid-fast bacilli investigation in urine samples (3 times), blood and urine cultures were sterile and PPD skin test was normal. Serological tests for HIV and agglutination tests for brucellosis and salmonellosis were all negative.

Cefazolin sodium was started empirically, based on likely causative organisms. The patient was discharged being ambula-

tory within one week, and antibiotic treatment lasted for seven days. No microorganism could be isolated from the abscess material which was drained surgically. No evidence of acute appendicitis, Pott's disease, sacroiliitis and perirenal collection could be found during surgical intervention. After surgical drainage of the abscess, our patient recovered completely. White blood cell count and erythrocyte sedimentation rate declined to normal limits following the surgery. After nine months, no recurrence in clinical and laboratory findings was detected.



Figure 2. Abdominal CT showed large hypodense abscess with a thick wall and showed involvement of the psoas, quadratus lumborum and posterolateral abdominal wall muscles on the right side.



Figure 3. Coronal T1-weighted MRI image shows abscess involving the right psoas muscle and surrounding soft tissue. It is $18 \times 8 \times 7$ cm in diameter and slightly hyperintense (hemorrhagic or proteinaceous material).

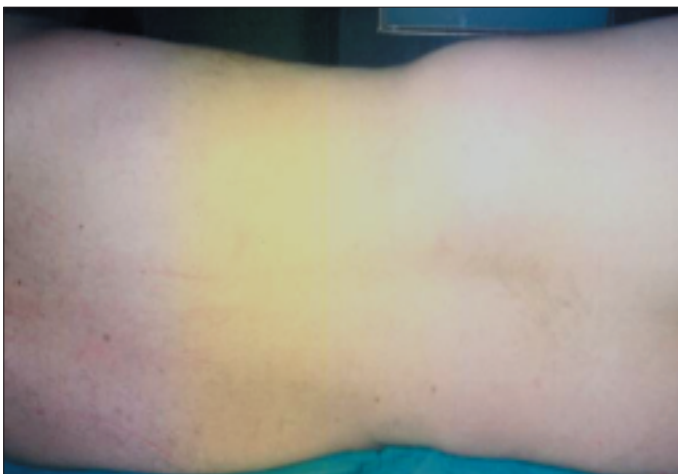


Figure 1. In physical examination a large, tender mass with approximately a diameter of 10×10 cm was palpated on the right flank region.

Discussion

This case demonstrates an unusual reason of low back pain, psoas abscess. Well known presenting symptoms of psoas abscess are pain, limp, fever and psoas spasm (2,4,6-8). Chills and palpable mass may also accompany these symptoms. Pain is generally localized to ipsilateral hip, but occasionally radiates to the abdominal wall, back, thigh, inguinal area, flank, knee and calf (1,4). Most common physical finding is pain felt during flexion and external rotation of the affected hip (1,2,4).

Interestingly, when this patient admitted to our outpatient clinic, he was almost in good health except for his long-lasting, vague low back pain. In the literature, the duration of symptoms before hospitalization varies significantly according to whether being in septic shock or not, which are 1- 5 days and 11-63 days (9). In general, psoas abscess develops in a very short time, but our patient had been complaining about backache for four months.

Sometimes a tender, palpable mass may be found in the iliac fossa and inguinal region, probably the extension of the abscess in these patients (2,4). However, the tender, palpable mass in this case was localized to right flank region.

The diagnosis of psoas abscess may be delayed or missed because of the indefinite signs and symptoms. For differentiation between hip pathology and psoas abscess a careful physical examination would be useful.

Chronic illness and systemic infections should be considered while evaluating such patients complaining about pain, malaise, prolonged fever and weight loss (2,4). Differential diagnosis of psoas abscess should also include localized infections (bacterial infections of the hip, necrotizing fasciitis of psoas muscle, pyelonephritis, pelvic inflammatory disease, appendicitis, vertebral or pelvic osteomyelitis, epidural abscess), vascular pathologies (avascular necrosis of femur, aortic or iliac arterial aneurysms), malignancies (retroperitoneal tumors), inflammatory diseases, genitourinary or gastrointestinal tract pathologies (inflammatory bowel disease especially Crohn's disease, urolithiasis, gastrointestinal obstructions, duodenal ulcers), and disc pathologies (S1 root involvement) (4,6). These entities which can be distinguishable upon the correlation of history, physical examination, laboratory investigations and imaging studies should also be kept in mind.

Plain abdominal radiographs are occasionally helpful in defining an inflammatory mass or any other reason responsible for the clinical picture. Chest radiographs may disclose minimal pleural effusion or raised hemidiaphragm. An intravenous pyelograph may be helpful in showing deviation of the kidney or ureter. Barium studies may demonstrate bowel loop displacement, and associated gastrointestinal diseases (2,4,6). However, the most accurate diagnostic imaging study is CT or MRI which typically show a low density lesion of the psoas muscle and gas within the muscle, sometimes enhancement of the abscess wall with contrast medium injection may also be seen (10-12). Definitive diagnosis is made by fine needle or aspiration under imaging guidance, and microbial culture of the causative microorganism (10-12). If abdominal CT or MRI is unavailable, ultrasonography may be the first choice for demonstration of inflammatory mass (5). Gallium-67 scanning may show the mass and accompanying infectious foci (13).

The most commonly associated disorder with secondary psoas abscess is Crohn's disease (14,15); others include appen-

ditis, inflammation or neoplasms of bowel, colon diverticulitis, discitis and a variety of intraabdominal or retroperitoneal infections (1,2,4,6,16-18). For early diagnosis and prompt onset of therapy, spine should always be included in differential diagnosis as source of infection in secondary psoas abscess. A history of spinal surgery should alert us about possible psoas abscess (19,20). The cause of primary psoas abscess remains still uncertain. Proposed mechanisms include haematogenous spread from primary infectious foci or local trauma with intramuscular hematoma formation predisposing to abscess development (11).

Staphylococcus aureus, Bacteriodes fragilis and Escherichia coli are most the common infective agents (21). Primary psoas abscess is caused by a single microorganism in 87.5% of all cases; mostly Staphylococcus aureus, (88.4%), secondly Streptococci (4.9%) and Escherichia coli (2.8%). Blood cultures are positive in 41.7%, usually for Staphylococcus aureus (1,7).

In the literature, other reported causes of primary psoas abscess are brucellosis, typhilitis and trichinosis, Candida albicans, pneumococcus, coccidiomycosis and tuberculosis (8-18,22-30).

In the last decade, majority of the patients with primary psoas abscess were intravenous drug users (86%), or infected with HIV (57%) (12,31). The recurrence of primary abscess in young population is almost always associated with alcoholism or parenteral drug addiction (32).

Treatment for primary psoas abscess includes percutaneous drainage combined with systemic antibiotic administration. Surgical drainage is preferentially applied to the patients with underlying bowel disease (33). Treatment for secondary psoas abscess requires detection and treatment of underlying disease.

With appropriate treatment psoas abscess rarely causes mortality (2.5%). Death due to psoas abscess is mostly associated with inadequate or delayed drainage, or both (1). Our patient responded to drainage and antibiotic treatment, and recovered completely.

Conclusion

Psoas abscess is an entity that is sometimes ignored in our daily clinical practice. Staphylococcus aureus being the most important gram positive pathogen, microorganisms are frequently responsible for the process. CT or MRI is necessary for the diagnosis. Correct identification of the microorganisms, and prompt and appropriate usage of antibiotherapy accompanied with surgery enable complete well-being of patients. Thus, psoas abscess must be considered in the differential diagnosis of low back pain.

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