

PRIMARY PSOAS ABSCESS

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REZUMAT

Introducere: Abcesul primar al psoasului este o entitate clinică rară și ridică probleme diagnostice și terapeutice. Diagnosticul clinic este adesea dificil datorită simptomelor și semnelor nespecifice. **Material și metodă:** Autorii prezintă un cazul unei paciente în vârstă de 50 de ani internată pentru febră de etiologie neprecizată la care hemoculturile au fost în mod repetat sterile. **Rezultate:** Pacienta a fost diagnosticată cu abces de psoas după efectuarea examenului de rezonanță magnetică nucleară. Examenul microbiologic efectuat din puroiul evacuat prin intervenție chirurgicală a precizat drept agent etiologic streptococul β -hemolitic. Evoluția pacientei a fost bună, fără recădere la 12 luni postoperator. **Concluzii:** Evaluarea de laborator de rutină este rareori utilă în diagnosticul abcesului primar piogenic al mușchiului psoas, lucru valabil și pentru tehnicile imagistice radiologice convenționale. Tomografia computerizată și rezonanța magnetică nucleară sunt mult mai sensibile decât examenul ecografic.

Cuvinte cheie: abces de psoas, rezonanță magnetică nucleară, *Streptococcus pyogenes* β -hemolitic

ABSTRACT

Background: Psoas abscess is an uncommon clinical entity and presents diagnostic and therapeutic challenges. Clinical diagnosis is difficult because of non-specific symptoms and signs. **Materials and Methods:** The authors present the case of a 50 years old female patient admitted for fever of unknown origin with repeated sterile blood, urine and stool cultures. **Results:** The outcome was good with no relapse at one year follow-up. **Conclusions:** Routine laboratory evaluation is seldom useful for the diagnosis of primary pyogenic psoas abscess. Conventional radiological techniques are often unhelpful. Computed tomography and magnetic resonance imaging are more useful than ultrasonography.

Key Words: psoas abscess, magnetic resonance imaging, β -hemolytic *Streptococcus pyogenes*.

INTRODUCTION

Psoas abscess may be classified as primary or secondary, depending on the presence or absence of underlying disease. Primary psoas abscess is a rare clinical entity with subtle and non specific symptoms, most commonly seen in immunosuppressed patients or those predisposed to infections.¹⁻³ It has no definite etiology. The psoas muscle has a rich vascular supply that is believed to predispose it to hematogenous

spread from sites of occult infection.⁴ Psoas abscess can also be secondary to gastrointestinal or renal pathology through direct infection of adjacent structures. The most common causes are appendicitis, diverticulitis, Crohn's disease and carcinoma.

The organisms responsible for infection are gram-negative germs (*Escherichia coli*, *Klebsiella* spp., *Pseudomonas aeruginosa*, *Proteus mirabilis*, *Enterobacter* spp.) and gram-positive cocci (*Staphylococcus aureus*, *Staphylococcus epidermidis*, *Streptococcus agalactiae*, α -hemolytic streptococci, especially *Streptococcus mitis*).^{5-7,10} It can also be of tuberculous etiology and associated with cold abscesses of lower thoracic and upper lumbar vertebral bodies, as the psoas is attached to these vertebrae. Percutaneous drainage and antibiotics provide an effective and safe alternative to more invasive surgical drainage in most patients.^{8,9,11} Surgical drainage is associated with shorter hospital stay.¹¹ The mortality

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in undrained psoas abscesses is high with a mortality rate ranging between 45 and 100%.¹²⁻¹³

The aim of this report is to present the *diagnostic pitfalls* and an *unusual etiology* of primary pyogenic psoas abscess – cause of fever of unknown origin.

CASE PRESENTATION

A 50 years-old Caucasian female was admitted on 3.07.2003 with the following diagnosis: prolonged fever of unknown origin. She presented high fever, chills, rigor, myalgia, arthralgias, nausea, vomiting, and hypotension.

The illness began 3 weeks before admission with fever, chills, myalgia, arthralgia, abdominal cramps and watery diarrhea. She was treated with ciprofloxacin and diosmectite (Smecta^R) for 5 days. Fever vanished and stools became normal. After another 4-5 days fever reappeared and the patient developed abdominal pains. She was treated with norfloxacin. The persistence of fever and the worsening of her general condition determined the admission.

When she was admitted the patient was pale, anxious, sweating and complaining of nausea. The body temperature was 38°C. Physical examination revealed: blood pressure 90/60 mmHg, pulse 116/min, white coated tongue, and tenderness on palpation in the right upper quadrant and epigastric region and an enlarged liver- 2 cm below the right costal margin on the midclavicular line. The psoas sign and the classical sign of limping were *absent*.

Laboratory findings: 3.07.2003: Hgb 11,2 g%; HCT 32,8%; WBC 17.600/mm³ Ne 93% Ly 4% Mo 2% Eo 1%; ESR 125/132 mm; C-reactive protein positive. 7.07.2003: Hgb 11,6 g%; HCT 34%; WBC 13.900/mm³ Ne 78% Ly 16% Mo 4% Eo 2% ESR 130/150 mm.

All the blood cultures (processed on BACTEC Plus Aerobic/F and Plus Anaerobic/F media), throat cultures, urine cultures and stool cultures were sterile.

The chest X ray was normal.

The ultrasound exam revealed a homogenous, hyperechogenic, slightly enlarged liver without other changes in the abdomen.

The case was considered an undiagnosed bacterial infection, a "culture negative" sepsis. Empirical antibiotic therapy was started (pefloxacin 2x400 mg/day + gentamicin 3x80 mg/day, as the patient was allergic to ampicilin and cephalosporins) with no clinical improvement.

The magnetic resonance imaging on 7.07.2003 showed a heterogenous hypodense collection without enhancement of 5/6/8 cm in the right psoas. (Figs 1,2)

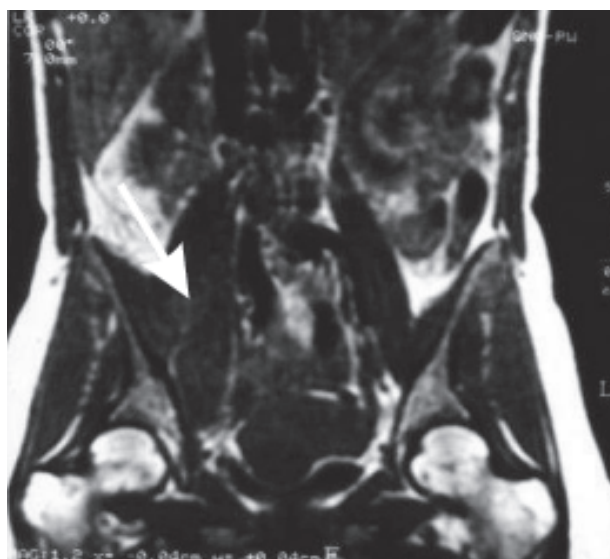


Figure 1. Right paravertebral liquid collection.

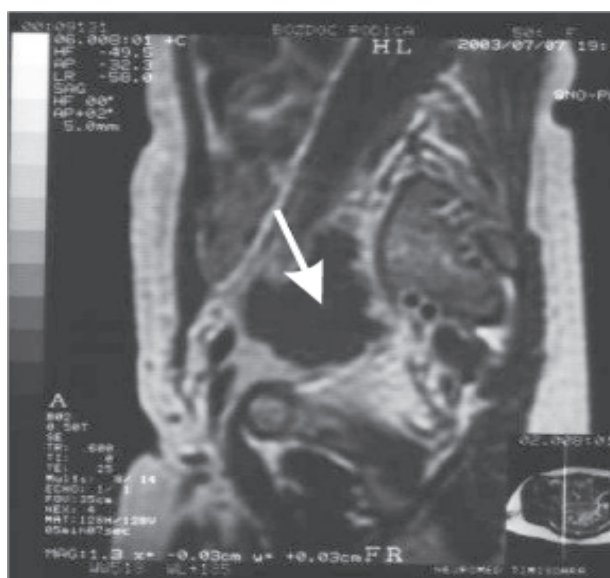


Figure 2. Hypodense collection in the right psoas mass

On 8.07 the patient was transferred to the Surgery Clinic and on 9.07 she was operated. After a median laparotomy in the peritoneal cavity an abscess of 15/10/8 cm in the right psoas was observed. Debridement and drainage of the abscess were performed via an anterior retroperitoneal approach and about 200 ml of sticky pus were evacuated. The culture obtained from the pus revealed a β -hemolytic *Streptococcus pyogenes* (group A streptococcus). In-vitro susceptibility testing showed the following: penicillin 30 mm, imipenem 30 mm, cefepime 30 mm, ceftriaxone 30 mm, cefotaxime 30 mm, amoxicillin 26 mm, ertapenem 25 mm, rifampicine 25 mm, clarithromycine 23 mm, oxacillin 22 mm.

The patient was treated with antibiotics for 10 days (pefloxacin and gentamicin), had an uneventful

recovery and left the hospital on 21.07. She recovered completely and was symptom free at one year follow-up.

DISCUSSION

Primary psoas abscess is an uncommon condition, a rare affection and is usually associated with a predisposing factor or immunosuppression (they were absent in our patient). Early diagnosis and appropriate management are challenging aspects for physicians.¹⁴⁻¹⁵

The present case demonstrates the importance of imagistic methods, especially magnetic resonance. Before the advent of these techniques the psoas abscess was an incidental finding at operation and, not seldom, at autopsy. In the present case the classical signs of psoas abscess (lower back pain, thigh pain, limping and psoas sign) were absent. The clinical image was dominated by peritoneal inflammation expressed by nausea, vomiting and watery stools.

Furthermore despite all the efforts, the cultures remained sterile, probably because the patient had taken antibiotics prior to admission. Cultures of appropriate clinical specimens (urine, sputum, blood) should be obtained prior to starting empiric therapy to provide bacterial isolates for in-vitro susceptibility testing.¹⁶⁻¹⁷ When antibiotic therapy has been started empirically, the question of how long to continue it when the origin of infection has not been defined is often a problem. Discontinuing antibiotic therapy too early can lead to clinical deterioration. Antimicrobial therapy of primary psoas abscess must continue 7 days after drainage.

In any case of sepsis it is very important to detect any sites of collection that must be solved by the surgeon under antibiotic protection. In this case the more invasive surgical procedure was preferred because the origin of abscess was not clear.

Generally, psoas abscess is caused by gram-positive cocci (especially *Staphylococcus aureus*) or gram-negative bacteria. The present case points out a unique cause of psoas abscess and also an important process of pathomorphose of diseases caused by β -hemolytic streptococci – there are fewer cases of scarlet fever during the last years but new illnesses appear (necrotizing fasciitis).

CONCLUSION

Awareness of this disease entity, careful physical examination and appropriate imaging studies such as ultrasonography, computed tomography and magnetic resonance imaging are the key to make a correct diagnosis. Although *Streptococcus pyogenes* is not the main cause of primary psoas abscess, it must be kept in mind as a reemerging infectious agent.

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