

PRIMARY BILATERAL ILIOPSOAS ABSCESS IN AN ELDERLY MAN

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SUMMARY – Primary bilateral iliopsoas abscesses in the elderly are very rare in Europe. We report a case of an elderly male misdiagnosed with rheumatic low back pain. The delay in accurate diagnosis and therapy led to severe worsening of his general condition and septic shock. The diagnosis was established by multi-slice computed tomography (MSCT) and the patient was successfully treated by MSCT-guided percutaneous drainage of both psoas muscles. Septic shock and miscellaneous complications required continuous intensive care. The patient was discharged after 42 days of hospital treatment. Antibiotic therapy continued for the next six weeks until his complete recovery. Pain remains the most frequent and predominant symptom of spinal pathology regardless of the etiology. Immunocompromised patients or signs suggestive of bacterial infection require caution and a more comprehensive diagnostic work-up.

Key words: *Iliopsoas abscess; Percutaneous drainage*

Introduction

The iliopsoas abscess is a rare but potentially dangerous clinical condition. The iliopsoas compartment is seldom affected by pathologic processes involving inflammatory, hemorrhagic, neoplastic and traumatic diseases¹. Therefore, patient history and physical examination are of crucial importance for clinical suspicion, which can be confirmed or excluded by computed tomography (CT) or magnetic resonance imaging (MRI). Traditionally, psoas abscess has been classified as primary if the infection source could not be established, or as secondary if the infection had spread from other organs².

We report a rare case of bilateral primary iliopsoas abscess in an elderly male misdiagnosed as rheumatic low back pain. The delay in appropriate therapy led to

severe worsening of his general condition and septic shock.

Case Report

A 70-year-old man was admitted to our hospital for clinical and laboratory signs of septic shock. History data obtained from the relatives indicated that the patient had penicillin allergy, had suffered from non-insulin dependent diabetes for a year, and from chronic low back pain. Two weeks before, the patient had complained of exacerbation of his low back pain, which was not responding to oral nonsteroidal anti-rheumatics (NSARs). Therefore, a week later, neurologic examination and thoracolumbar multi-slice computed tomography (MSCT) scan were performed, but no particular pathologic substrate was found. Symptomatic treatment with diclofenac sodium 2x75 mg i.m./d and dexamethasone 4 mg i.m./d for the next seven days was ineffective. High fever, prostration, and severe deterioration of his general condition over the previous few days had made the patient to present to our Emergency Department. Upon arrival, he was

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stuporous, febrile 39.8 °C, hypotensive 80/60 mm Hg (11/8 kPa), and bradypneic with shallow respirations, and respiratory arrest was imminent. Intubation and mechanical ventilatory support were provided, and the patient was transferred to the Intensive Care Unit. Physical heart, lung and abdomen examination revealed no pathologic signs.

The results of laboratory tests were as follows: C-reactive protein 382.1 mg/L, erythrocyte sedimentation rate 116 mm/1st h, red blood cell count 3.8x10⁹/L, hemoglobin 11.9 g/dL, hematocrit 0.35, mean cell volume 93.5, white blood cell count 21.9x10⁹/L with 94.1 percent neutrophils, blood glucose level 33.5 mmol/L, and serum creatinine 204 μmol/L (n.v. 35-115). Liver enzymes, electrolytes, and acid-base balance during mechanical ventilation were within the normal range. An HIV test was negative. Chest x-ray, abdominal ultrasound examination and echocardiography were not indicative of any particular pathology or the etiology of sepsis.

Therapy consisted of parenteral volume replacement, an inotropic agent (dopamine 5 μg/kg/min), infusion of low doses of insulin, and an empiric antibiotic (cefazolin), after all available bacterial specimens had been collected. Normotension, appropriate diuresis, spontaneous respirations, improvement of mental condition, and weaning from mechanical ventilation

were achieved within the next 24 hours. In searching for any infective foci, urgent abdominal MSCT was carried out to disclose septate abscesses in both psoas muscles (Figs. 1 and 2).

A percutaneous MSCT-guided drainage system was inserted into the abscess cavity of both psoas muscles (Fig. 3). Most of the purulent content on the right (70 mL) and left (50 mL) side was evacuated immediately. The rest was drained during the next five days. In spite of the proton pump inhibitor protection, the course of the disease was complicated by sudden, abundant gastrointestinal (GI) bleeding in the form of dark red stools, resulting in hypotension and severe hemorrhagic anemia. Urgent gastroscopy verified active venous bleeding from a prepyloric ulcer surrounded by numerous brisk erosions. Hemodynamic stability was accomplished by clipping hemostasis, local adrenaline infiltration, and erythrocyte transfusions. Histopathology of biopsy material showed no malignancy.

Sensitive *Staphylococcus (S.) aureus* was isolated from several blood cultures and drained pus. Tracheal aspirate, urine, and stool cultures were negative. High doses of cefazolin for four weeks yielded a good clinical response. Reactive polyarthritis slowed down the recovery in the third week of the disease, but was successfully treated with physical therapy, since NSARs were contraindicated (GI bleeding).



Fig. 1. Septate abscesses in the psoas muscles (frontal view).



Fig. 2. Septate abscesses in the psoas muscles (transverse view).



Fig. 3. Drainage system placed into the abscess cavities.

MRI upon discharge, after four weeks of hospital treatment, indicated reactive spondylodiscitis at the L3-L4 level and complete resolution of the psoas abscesses (Fig. 4). Sulfamethoxazole-trimethoprim was introduced upon discharge, and continued for six weeks. Complete recovery was achieved in two months.

Discussion

The usual symptoms of iliopsoas abscess (IPA) like fever, flank pain and limitation of hip move-

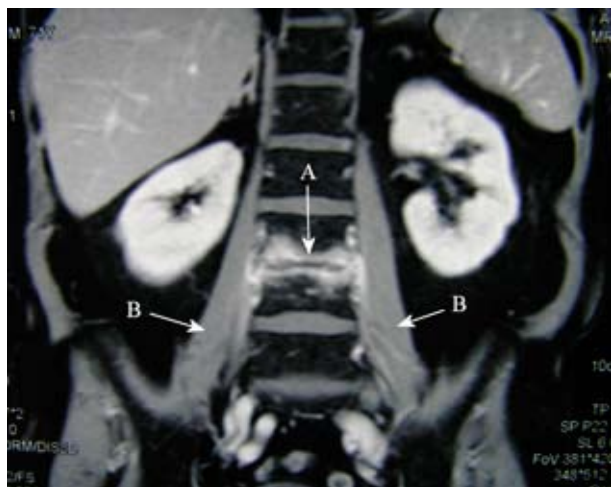


Fig. 4. (A) Spondylodiscitis L3-L4; (B) complete resolution of the psoas abscesses.

ment are non-specific, and present in only 30 percent of patients³. If very few clinical and laboratory signs are present, chronic low back pain may be easily attributed to rheumatic etiology rather than suspicion of psoas abscess. In our patient, ambulatory MSCT directed strictly at the spine found no specific pathology, while lateral imaging of the paraspinal and iliopsoas muscles was extremely poor. This caused serious delay in making correct diagnosis and introducing appropriate treatment.

Tabrizian *et al.* retrospectively analyzed the initial symptoms, concomitant diagnoses, treatments, and outcomes of 61 consecutive patients with IPA over a seven-year period. The predominant symptom was pain (95 percent), and the most frequently associated diagnosis was inflammatory bowel disease (30 percent). Eight patients were bacteremic (13 percent), and paraspinal abscess was found in only four patients (7 percent)⁴.

Primary iliopsoas abscesses occur probably as a result of hematogenous spread of an infectious process from an occult source in the body⁵. The contributing concomitant conditions are diabetes mellitus, intravenous drug abuse, AIDS, renal failure and immunosuppression. Additional risk factors include age under 20, male sex (3:1 predominance), and low socioeconomic status⁶.

Apart from occurring in younger age groups, primary psoas abscesses are usually not bilateral, and are found more frequently in developing countries⁷. In a series of van den Berge *et al.*, five of 12 patients had primary psoas abscess but only one had bilateral primary abscess⁸. In a study of 142 pediatric patients with iliopsoas abscess, Bresee *et al.* found a 57 percent occurrence on the right side and 40 percent on the left side. Bilateral psoas abscesses occurred in only 3 percent of all cases, primary or secondary⁹.

In Asia and Africa, over 99 percent of iliopsoas abscesses are primary, in North America 61 percent, and in Europe 17 percent¹⁰. *S. aureus* is the causative organism in over 88 percent of patients with primary iliopsoas abscesses, followed by *Escherichia (E.) coli* and *Streptococcus*. The predominance of primary psoas abscesses in Asia and Africa might be, at least partially, due to the low socioeconomic conditions and the prevalence of AIDS.

Secondary psoas abscesses are often caused by a mixed flora of enteric bacteria, commonly *E. coli* and

*Bacteroides*¹¹. There are numerous gastrointestinal, genitourinary, and other miscellaneous pathologic conditions associated with secondary iliopsoas abscesses⁵.

Mycobacterium tuberculosis spine infection (Pott's disease) is the most frequent cause of secondary psoas abscesses in developing countries¹².

Ultrasound is diagnostic in only 60 percent of cases, and MRI appears to have no better than 90 percent of the sensitivity and 80 percent of the specificity of MSCT in diagnosing psoas abscesses¹³. Intravenous contrast-enhanced spiral CT has become the gold standard in imaging¹². However, MRI is better than MSCT in imaging the spinal canal and provides a more complete evaluation for all potential sources of back pain⁶. MSCT of the abdomen and pelvis with oral and i.v. contrast should also be considered, especially when a secondary psoas abscess is suspected.

The initial treatment of primary psoas abscesses involves the empiric use of i.v. anti-staphylococcal antibiotics since nearly 90 percent are due to *S. aureus*⁶. When a secondary psoas abscess is suspected, antibiotics need to have coverage for both gram-negative and anaerobic bacteria.

Percutaneous drainage is the method of choice for primary abscesses and has been confirmed as an effective and less invasive procedure for draining both uniloculated and multi-loculated abscesses¹⁴. Secondary abscesses may be more appropriately treated with surgical drainage and resection of the affected underlying structures^{15,16}. In the study by Tabrizian *et al.*, the treatment depended on the abscess size, number and concomitant diagnoses, but most cases (79 percent) were successfully treated by percutaneous drainage, and only a few (7 percent) underwent exploratory surgery and open drainage. Nine (15 percent) patients were treated conservatively⁴. Based on the same findings, patients with inflammatory bowel disease are ultimately likely to require operative management.

Pain seems to be the most frequent and predominant symptom of spinal and paraspinal pathology regardless of the etiology. When an immunocompromised patient is involved or signs suggestive of bacterial infection are present, more caution and a more comprehensive diagnostic work-up are recommended.

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Sažetak

PRIMARNI OBOSTRANI APSCES BOČNOSLABINSKOG MIŠIĆA U STARIJEG MUŠKARCA

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Primarni, bilateralni apsces bočnoslabinskog mišića (m. iliopsoasa) u starijih osoba vrlo je rijedak u Europi. Prikazujemo slučaj starijeg muškarca u kojeg je postavljena pogrešna dijagnoza križobolje. Zakašnjenje u utvrđivanju bilateralnog apscesa iliopsoasa i primjeni odgovarajuće terapije uzrokovalo je pogoršanje općeg stanja i septički šok. Dijagnoza je potvrđena *multi-slice* kompjutoriziranom tomografijom (MSCT), a bolesnik je uspješno liječen postavljanjem drena pod kontrolom MSCT u oba psoasa. Septički šok i druge popratne komplikacije zahtijevale su kontinuirani nadzor u Jedinici intenzivne skrbi. Bolesnik je otpušten kući nakon 42 dana hospitalizacije. Antibiotička terapija nastavljena je još šest tjedana nakon otpusta do potpunog oporavka. Bol ostaje najčešći i dominantni simptom bilo kojeg patološkog procesa u području kralježnice. Imunokompromitirani bolesnici kao i bolesnici sa znacima koji upućuju na bakterijsku infekciju zahtijevaju posebnu pažnju i širu dijagnostičku obradu.

Ključne riječi: *Apsces bočnoslabinskog mišića; Perkutana drenaža*

