



PRIMARY BILATERAL TUBERCULAR PSOAS ABSCESS REQUIRING EMERGENCY SURGERY

Acil ameliyat edilen primer tüberküloza bağlı bilateral psoas apsesi

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ABSTRACT

A 28-year-old female patient presented with complaints of abdominal pain, fever, and vomiting. Abdominal ultrasonography and tomography revealed a hypoechoic abscess in the psoas muscle with internal echogenicities. There were no findings of osteomyelitis or spondylodiscitis. Empirical antibiotherapy was initiated and ultrasound-assisted drainage of the abscess was planned. The patient was taken to emergency surgery due to a major vascular injury that occurred during the procedure. Based on the observation of granulated tissues in the post-operative histopathological examination of the surgical material, tuberculosis was considered as the primary etiological factor.

Key words: Psoas abscess, tuberculosis, acute abdomen, atypical presentation.

ÖZET

Yirmisekiz yaşındaki bayan hasta karın ağrısı, ateş yüksekliği ve kusma şikâyetleri ile değerlendirildi. Karın ultrasonografisi ve tomografisinde psoas kası içerisinde hipoekoik, içerisinde internal ekojeniteler içeren apse saptandı. Olguda herhangi bir osteomyelit veya spondiodiskit bulgusuna rastlanmadı. Ampirik antibiyoterapi başlanarak ultrasonografi eşliğinde apsenin drenajına karar verildi. İşlem esnasında majör vasküler yaralanma olması hasta acil operasyona alındı. Cerrahi sonrası ameliyat materyalinin histopatolojik incelemesinde granülomatoz dokuların gözlenmesi üzerine primer etken olarak tüberküloz düşünüldü. Antitüberküloz tedavi başlanan hasta izleminin 6. ayındadır ve tedaviye devam etmektedir. Psoas apselerinde en uygun tedavi yöntemi uygun antibiyoterapi ve drenajdır. Apsenin lokalizasyonuna ve büyüklüğüne göre drenaj yöntemi farklılık göstermektedir.

Anahtar kelimeler: Psoas apsesi, tüberküloz, akut karın, atipik prezentasyon.

INTRODUCTION

The primary role of the psoas muscle, a muscle of retroperitoneal origin, is flexion, external rotation and adduction of the thigh. The psoas muscle starts from the last thoracic and first lumbar vertebra and ends at the minor trochanter of the femur (1). Infectious diseases of the psoas muscle are common.

Psoas muscle abscesses were first described by Mynter in 1881 (2). Particularly seen in the younger population, psoas abscesses may cause serious morbidity and mortality. There is no specific sign for diagnosis. The diagnosis is frequently made by con-

sidering the possibility of the disease, and based on the findings, obtained by the assistance of imaging techniques (3). This article aims to present the treatment method that was used for a patient who presented with sepsis, associated with primary psoas abscess.

Case

A 28-year-old female patient was admitted to the emergency room with complaints of abdominal pain, fever, and vomiting. The patient was diagnosed with urinary tract infection, based on the examinations performed in the emergency room, and antibiotherapy and analgesics were started.

The patient was admitted to the clinic, as her complaints did not regress following the treatment. At presentation, the patient's body temperature was 38.5°C, pulse rate was 140/min, and blood pressure was 140/100 mmHg. The patient lost 15 kg in within the previous three months and had a cachectic appearance. In the previous week, she had developed back pain, in addition to abdominal pain, which was aggravated at night. The medical and family history of the patient revealed no diabetes, cancer, tuberculosis, or gastrointestinal or genitourinary diseases.

Abdominal examination did not reveal any pathologies other than tenderness with deep palpation. Pulmonary and systemic lymph node examinations were normal. Echocardiography and cardiac examination revealed no pathologies. The laboratory examinations of the patient revealed hypochromic microcytic anemia and the following results: white blood cell count (WBC count) 14000/L, erythrocyte sedimentation rate 180 mg/h, and C-reactive protein 200 mg/dl. Direct blood and urine examination and blood and urine culture were negative. Brucella agglutination, Human Immunodeficiency Virus (HIV), Hepatitis B and C tests were negative. Upon the detection of fluid collections consistent with a hypoechoic abscess in the psoas muscle with internal echogenicities in an abdominal ultrasonography, abdominal tomography (CT) and thoracolumbar magnetic resonance imaging (MRI) were performed. A CT revealed an appearance consistent with abscesses in both psoas muscles (Figure 1). MRI revealed no findings of osteomyelitis or spondylodiscitis (Figure 2). Based on the findings, the patient was diagnosed with primary psoas abscess, and triple antibiotherapy with ceftriaxone, vancomycin, and metronidazole was initiated and also written informed consent was obtained from the patient. Ultrasound-assisted drainage catheter insertion was planned for the drainage of the psoas abscess.



Figure 1: Hypoechoic cystic masses with septations and echogenicities consistent with abscess in both psoas muscles.



Figure 2: Demonstrating that the psoas abscess is not associated with vertebrae.

The patient developed hemodynamic instability due to a large vessel injury that occurred during the catheter insertion procedure, and was taken to emergency surgery. The abdomen was opened with a midline incision. Major vasculature was secured first. The abscess foci were drained by bilateral exposure (Figure 3, 4, 5). Samples were taken from the abscess fluid and wall for microbiological and histopathological examinations. The procedure was completed after the insertion of the drainage catheter. No major postoperative surgical problems were observed. The patient's fever regressed, her general condition improved and she was discharged with recovery on the 15th post operative day. Gram staining of the material obtained during the surgery revealed no bacteria. Aerobic cultures showed no growth. The histopathological examination of the sample taken from the tissue revealed granulomatous structures formed by epithelioid histiocytes with central broad caseous areas accompanied by Langerhans-type giant cells with hematoxylin-eosin staining. Based on the histopathological data, the possibility of tuberculosis was considered (Figure 6). Since the Mantoux test was positive, a Ziehl Neelsen staining was performed, which was also positive. The patient was diagnosed with primary psoas abscess associated with tuberculosis after obtaining a positive result from the polymerase chain reaction. Antituberculosis treatment was initiated and the patient is currently in the sixth month of follow-up and continuing treatment. Marked weight gain and regression of fever were found in the control examination of the patient.

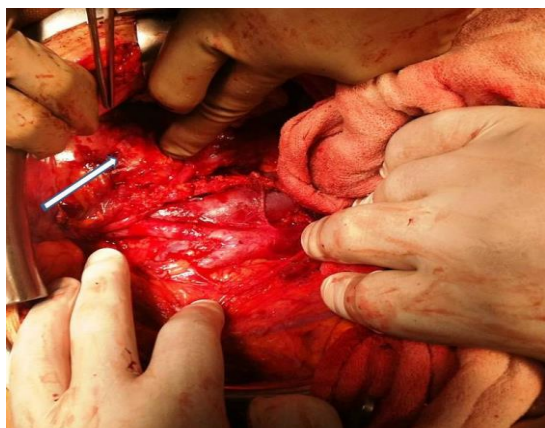


Figure 3: The appearance of the abscess foci (white arrow) before drainage.

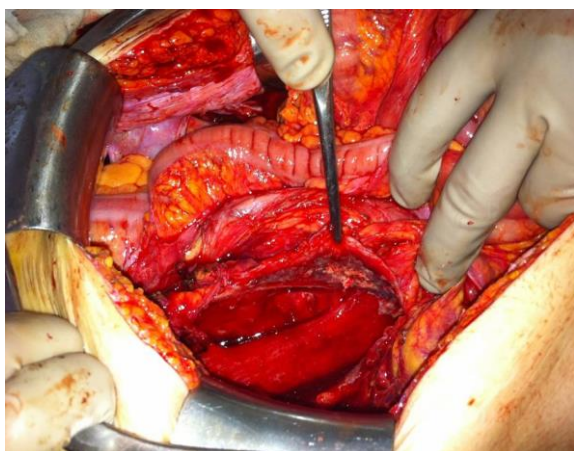


Figure 4: The appearance of the psoas abscess on the left side after drainage.

ative pathogens show variability. In the 124-patient study of Lopez, *Staphylococcus aureus* (35.2%) was again the most common causative pathogen in infections originating in the skeletal system. As for the abscesses originating from genitourinary (61.5%) and gastrointestinal system (42.1%) the primary causative agent is *E. coli* (5). Knowing the possible pathogen is important in terms of starting empirical treatment until the identification of the main pathogen. Two major factors are implicated in secondary psoas abscesses: intraabdominal and skeletal inflammatory diseases (6). In addition, psoas abscesses may also develop secondary to the perforation of a diverticulum or cancer localized in the sigmoid colon or in cases of Crohn's disease. In developing countries like Turkey, tuberculosis accounts for a considerable proportion of psoas abscesses.

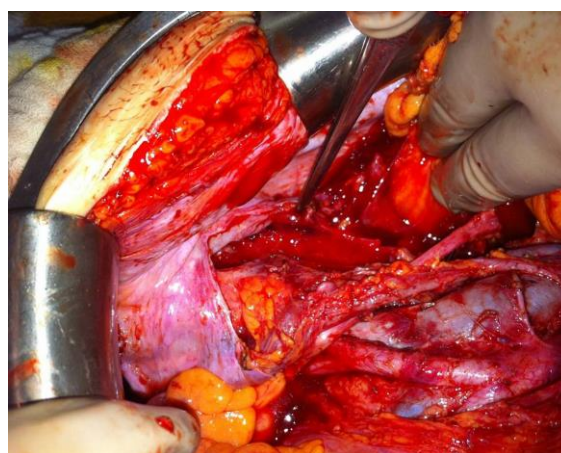


Figure 5: The appearance of the psoas abscess on the right side after drainage.

DISCUSSION

Having a retroperitoneal localization, the psoas muscle is in close relation to the mediastinal, abdominal, and pelvic cavities. Furthermore, it is also adjacent to the descending and ascending colon, appendix, small intestines, kidney, pancreas, iliac lymph nodes, vertebrae, and spinal canal. Pathology can easily spread from the psoas muscle to the surrounding tissues or vice versa. In 1881, Mynter first described the infective disease called psoitis, which is specific for the psoas muscle (2). The infectious disease of the psoas muscle is divided into two types, namely primary and secondary, based on the underlying causes. The primary type accounts for 30% of the cases. It is believed that the causative pathogen spreads from an unknown focus by a hematogenous or lymphatic route (4).

Primary psoas abscesses are more likely to occur in immunosuppressed, alcoholic, and diabetic patient groups. In the study of Ricci et al., consisting of 367 patients with psoas abscesses, *Staphylococcus aureus* (88%) was the most commonly isolated pathogen in the group with primary psoas abscesses. *Staphylococcus aureus* was followed by streptococci and *Escherichia coli*. In secondary psoas abscesses (i.e., associated with another underlying diseases) the causative

vertebral involvement of tuberculosis has a special importance. It was first described by Pott in 1779 and still named after him today (7). Vertebral involvement accounts for 50% of all bone involvements. Pott's disease can cause significant morbidity and mortality in the young productive population. Unilateral psoas abscesses usually develop secondary to vertebral involvement. However, bilateral primary involvement of the psoas muscle without vertebral involvement is quite rare. The clinical findings in psoas abscesses are non-specific. They usually have a subacute or chronic course.

The classical clinical picture described for psoas abscesses includes fever, limitation of joint movements, and back pain. However, this triad is observed only in 35% of the patients (8). Muscle spasm secondary to inflammation is implicated in back pain and joint movement limitation. In this case, all of the classical symptoms described for psoas abscesses in the literature were present. However, as a different feature, the cause of admission of the patient in this study was severe abdominal pain mimicking acute abdomen. The clinical picture specific to the psoas abscess was added to the abdominal pain later.

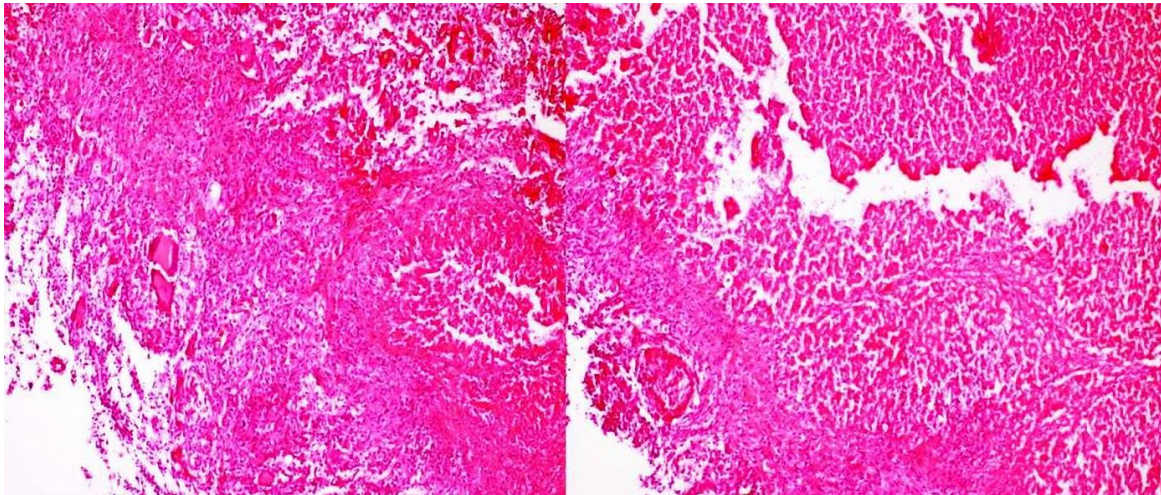


Figure 6: Hematoxylin-eosin staining revealed granulomatous structures formed by epithelioid histiocytes with broad central caseous areas accompanied by Langerhans-type giant cells among soft tissue samples. (H&E*10).

Laboratory data reveal findings of chronic non-specific inflammatory diseases, such as hypochromic microcytic anemia, leukocytosis and thrombocytosis. Imaging methods have priority among the assistive diagnostic methods. Abdominal ultrasonography detected a hypoechoic mass, but the gold standard in the diagnosis is abdominal tomography. Abdominal tomography reveals hypoechoic abscess pouches with septations in the psoas muscle. Magnetic resonance imaging can determine whether the abscess within the psoas muscle is of vertebral origin. In brief, the diagnosis is made by clinical suspicion, detailed examination, radiology, microbiology and histopathological examination. In this case, the diagnosis was made with imaging techniques.

Prassopoulos reported successful treatment of a newborn case with antibiotherapy, while the actual appropriate treatment of psoas abscesses is antibiotherapy together with drainage (9). Drainage may be performed with ultrasonography or surgery. US-assisted drainage can be adequate for small abscess pouches without septations, while the ideal treatment for large, broad and multiple abscesses is surgical drainage (10). As in this case, the diagnosis of psoas abscess is made with imaging techniques. However, the true pathology causing psoas abscess in this case was determined by a histopathological examination of the surgical material. The presence of granulomatous foci in the microscopic examination suggested the possibility of tuberculosis. Therefore, in endemic populations such as Turkey, the presence of tuberculosis should be considered first in patients presenting with primary psoas abscesses, even though their medical and family histories reveal no significant findings. The many articles have been published about psoas abscesses. However, primary iliopsoas abscess derived from mycobacterium tuberculosis without any lung or bone involvement and history of tuberculosis is very

rare clinical presentation and quite a few of these issues are presented in the literature.

As a result of a detailed review of the literature primary psoas abscess caused by mycobacterium tuberculosis were presented in Table 1. Even though tuberculosis is the causative factor in primary psoas abscesses, the condition can be successfully treated using effective antibiotherapy and drainage. Most important is the determination of the drainage method. Similar to this case, the drainage of large abscesses with septations may be inadequate and continuing the procedure may cause major vascular and organ injuries. Therefore, the most appropriate drainage method for large psoas abscesses with septations is surgical drainage. Moreover, the tissue samples obtained during surgical drainage will play a major role in determining the actual causative agent.

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Table 1: Primary psoas abscess caused by mycobacterium tuberculosis.							
Authors'	n	Age, Range (Median)	Symptoms	Imaging Procedure	Diagnosis	Treatment	Surgery
Cantaşdemir et al.	16	18-66 (36)	Flank Pain, Weight loss, Elevated WBC count and ESR	CT	Gram Staining And Aspirate Cultures	CT guide percutaneous drainage and antibiotics	None
Gupta et al.	7	2-60	None	USG, CT and MRI	Gram Staining, Histopathology And Aspirate Cultures	USG guide percutaneous drainage and antibiotics	None
Tsagouli et al.	6	24-67	None	CT	Gram Staining, Histopathology And Aspirate Cultures	CT guide percutaneous drainage and antibiotics	None
Chawla et al.	1	35	Pain associated with movements, Fever, Weight loss	USG, MRI	Histopathology Indicated Tuberculosis Granulation Tissue.	None	Conventional Surgery
Lopez et al.	2	None	None	USG, MRI	Gram Staining, Histopathology And Aspirate Cultures	USG guide percutaneous drainage and antibiotics	None
Wong et al.	2	32-96 (54)	Pain, Fever, Weight loss	USG, CT	Gram Staining, Histopathology And Aspirate Cultures	USG/CT guide percutaneous drainage and antibiotics	None
Dahniya et al.	3	17-80 (43)	Pain, Fever, Weight loss.	USG, CT	Gram Staining And Histopathology	USG/CT guide percutaneous drainage and antibiotics	None

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