Pleural Effusion Associated with a Psoas Abscess Dissecting Through the Posterior Abdominal Wall

POSTERİOR ABDOMİNAL DUVARA YAYILAN PSOAS ABSESİ VE PLEVRAL EFFÜZYONUN BİRLİKTELİĞİ

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Summary

A 24-year-old man presented with a pleural effusion in the left side.A presumptive diagnosis of parapneumonic effusion was made and antibiotic therapy was started. Over the following days, a subcutaneous soft tissue mass was developed in the left lumbar region.The CT scan examinations disclosed a psoas abscess and fluid collection in the subcutaneous soft tissues in the left side.The patient was successfully treated with incision and ultrasound-guided percutaneous drainage and antibiotics.

Key Words: Psoas abscess, Pleural effusion, Subcutaneous mass

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Özet

24 yaşında erkek hasta solda plevra sıvısı nedeniyle başvurdu. Parapnömonik sıvı tanısıyla antibiyotik tedavisi başlanmıştı. Takip eden günlerde sol lumbar bölgede subkutan yumuşak doku kitlesi gelişti. Bilgisayarlı Tomografi incelemesinde psoas absesi ve sıvı koleksiyonu görüldü. Hasta ultrason eşliğinde perkütan drenaj ve antibiyotikle tedavi edildi.

Anahtar Kelimeler: Psoas absesi, Plevra sıvısı, Subkutan kitle

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Psoas muscle abscess is a relatively rare entity, and because of its deep location, it has always been a diagnostic and therapeutic challenge.

Psoas abscess is classically described as a complication of vertebral tuberculosis.However, the current reviews point to pyogenic bacteria as the predominant cause of psoas abscess (1,2) .Retroperitoneal absceses can be complicated by a fistulous tract of the pericardium, reno - colico - cutaneous fistula , dissection into the thigh or posterior chest wall (3).

The following case demonstrates an unusual presentation of psoas abscess which complicated with subcutaneous fluid collection in a patient with pleural effusion.

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Case Report

A 24-year-old man admitted to our department in November 1996 with complaints of dyspnea accompanied by left pleuritic chest pain. The patient had been well until two months before admission,when he noticed nonproductive cough with fever.He had had used oral antibiotics before admission.The patient had no history of lower respiratory symptoms,any trauma, infection or operation before. He was neither a smoker nor an alcoholics.There was no history of drug abuse.

Physical examination revealed a patient, whose temperature was 37.5° C, the pulse was 100, and the respirations were 24. The blood pressure was 120/70 mmHg. Chest examination demonstrated dullness to percussion, and decreased tactile fremitus and breath sounds at the left posterior base of hemithorax. The rest of the physical examination showed nothing abnormal.

Initial laboratory studies revealed a white - cell count of 13800 cells/mm³, with 68% neutrophils,

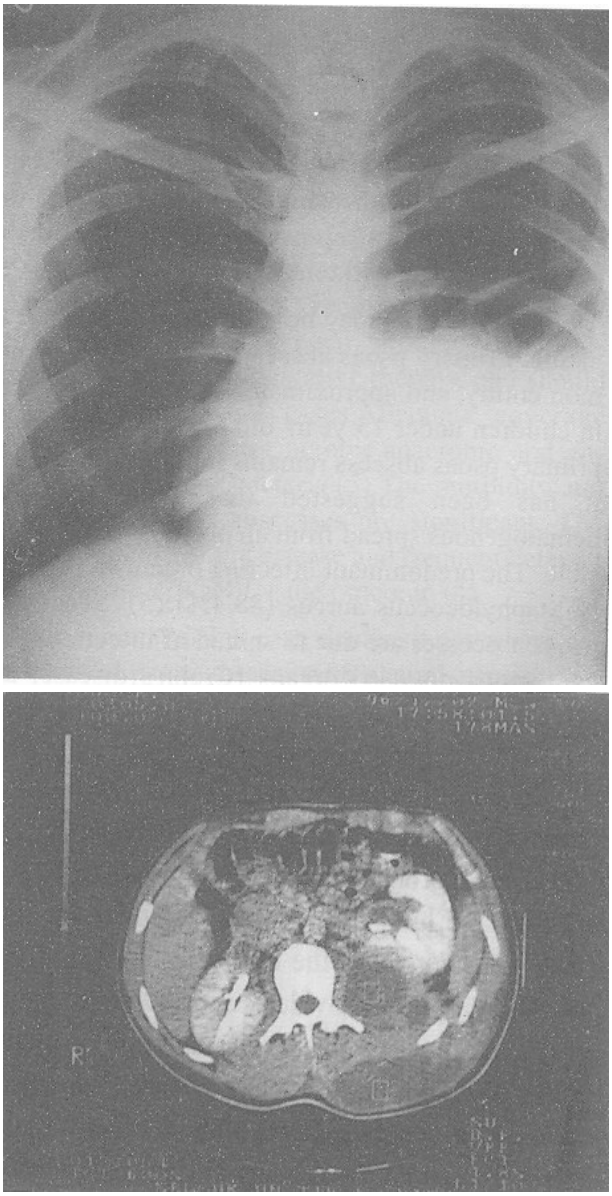

Figure 1, top. PA chest radiograph obtained at the time of the patient's hospitalization.Pleural effusion and band - like opacities are seen in the left side.
Figure 1, bottom. Abdominal CT shows an abscess in the left psoas muscle, and fluid collection in the left subcutaneous spaces of posterior abdominal wall

10% band forms, 20% lymphocytes, 1% monocytes and 1% others. The hematocrit level was 35%. An erythrocyte sedimentation rate (ESR) was 109 mm/h. The rest laboratory findings including routine blood chemistry and urinalysis were within the normal limits.Tuberculin and HIV tests were negative. An electrocardiogram was normal. A chest radiograph showed minimal mediastinal shift to the right with left hemithorax opacification in the lower and mid-zones and band-like lesions above it (Fig 1, top).

A thoracentesis and pleural biopsy were performed.The pleural fluid was exudative with a predominance of neutrophils; no malignant cells were seen.Gram's stains,Ziehl-Neelsen stains,and routine bacteriologic studies were negative for organisms.Pleural biopsy showed repeatedly nonspecific inflammatory changes. The bronchoscopy was refused by the patient .

Intravenous antibiotic therapy with penicillin G and ornidazole was begun empirically based on a presumtive diagnosis of parapneumonic effusion.However, by the 5th hospital day, the patient's temperature rose to 38.5°C with chills.Blood and urine cultures taken from the patient were negative. A few days later , the patient's clinical status deteriorated and a swinging temperature was noticed. He started complain of pain in the left lumbar region and left hip, which was eased by flexion. Over the next several days, physical examination revealed a tender and warm mass (12x10cm) with fluctuation on palpation in the left lumbar region. There was no abdominal palpable mass. A computed tomography examinations of the thorax and abdomen identified a left pleural effusion,fluid collection in the left psoas muscle and in the subcutaneous soft tissues of the ipsilateral posterior abdominal wall (Fig 1,bottom). No lymphadenopathy was seen. There were no effusion in the pericardium and no abnormality in the intraabdominal organs or vertebrae.Subsequently,the patient, diagnosed as having a psoas abscess and fluid collection in the subcutaneous space , underwent an incision and ultrasound-guided percutaneous drainage. A total of 400 mL of purulent material was drained and a catheter was placed for further drainage.Gram's stain of the drainage fluid showed gram-positive cocci in clusters. Cultures of the pus grew out Staph. aureus.

Over the next days, the temperature of the patient returned to normal. Intravenous urographic and barium-enema examinations showed nothing abnormal.On the 20th hospital day, a WBC count was 9000 cells/mm³ and ESR 25 mm/h, the repeated chest X-ray revealed decreasing of pleural effusion. Improvement in clinical findings and laboratory values was observed during the following

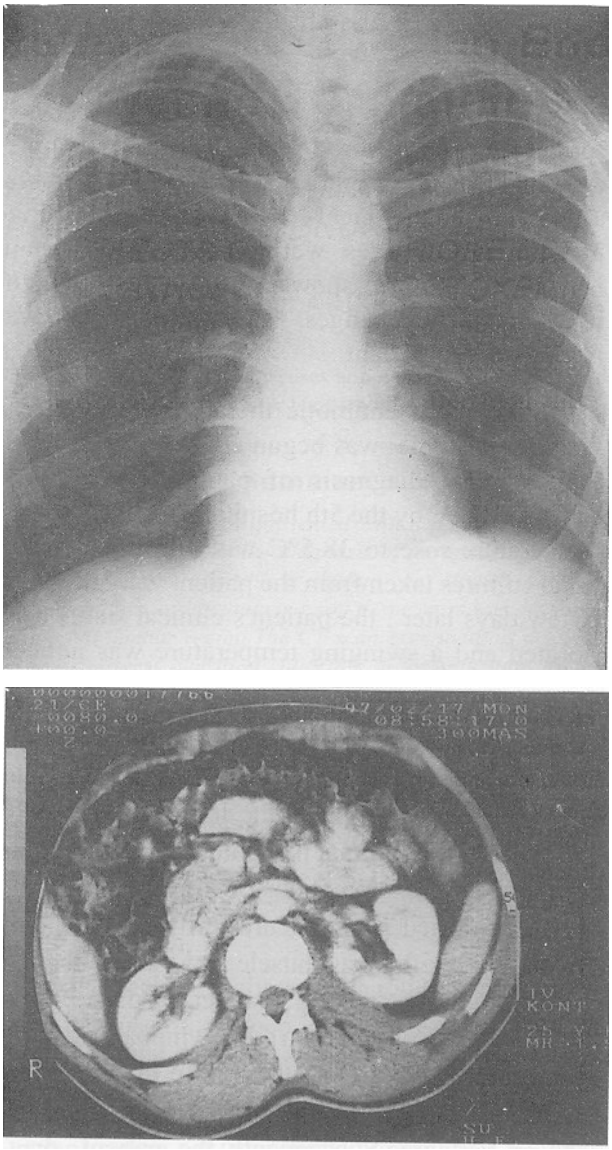

Figure 2, top. A chest radiograph taken three months after the patient's discharge.
Figure 2, bottom. Abdominal CT taken three months later after the patient's discharge

weeks; the repeated abdominal CT scan demonstrated resolution of the psoas abscess and the drain was removed. All cultures , previously made from the pleural fluid and abscesses ,were later reported to be negative for tubercle bacilli and fungi .The patient was discharged on the 45th hospital day to complete his oral antibiotics with home therapy. Approximately three months later, the follow - up chest X-ray (Fig 2, top), thoracic and abdominal CT (Fig 2, bottom) scans showed complete resolution of lesions.The patient remains asymptomatic after 12 months of follow-up.

Discussion

The diagnosis of psoas abscess in this patient was supported by the clinical "psoas sign" of hip flexion and pain on hip extension, plus the abnormalities on computed tomographic scanning.

Psoas abscess may be primary or secondary in nature. Primary psoas abscess is a much less common entitty, and approximately half of them occur in children under 15 years old (4). The etiology of primary psoas abscess remains unknown; however, it has been suggested that lymphatic and hematogenous spread from an occult source is possible. The predominant infecting organism is usually Staphylococcus aureus (88.4%) (5). Secondary psoas abscesses are due to spread of infection from contiguous diseased organs (Crohn's disease, appendiceal abscesses, diverticulitis, colon cancer, osteomyelitis of the spine), and have mixed enteric organisms (5,6).

The psoas abscess appears more likely to penetrate the fascia posteriorly than the peritoneum anteriorly,and intrude through the intermuscular fissures into the lumbar region (6,7).In this case, the growth of S.aureus in the culture of the pus from the abscess aspirate provided strong evidence that it was the causative organism. The cause of the pleural effusion is not entirely clear;however, the effusion did completely resolve after drainage of the abscess and antibiotic therapy. Thus,it is conceivable that in this case pleural effusion and subcutaneous soft tissue mass developed secondary to the pyogenic psoas abscess. Poulos et al have reported a diabetic patient with a retroperitoneal abscess (perinephric) due to Klebsiella pneumoniae, which dissected through the lower lobe of the lung and the posterior chest wall to produce a subcutaneous mass (3).

The psoas abscess may present with complaints include abdominal or extrimity pain,and fever. In some cases, an abdominal mass is palpated. Examination also reveals a tightly flexed hip which is difficult to extend (psoas sign) (6).

Diagnostic evaluation of a suspected psoas abscess should include blood and urine cultures,bari-

um enema ,and intravenous pyelogram.However, these procedures are neither sensitive nor specific in detecting psoas abscess. Abdominal ultrasound, CT scan,MRI and gallium scan have been shown to be useful in the detection of psoas abnormality (8).

The treatment of patients with psoas abscess requires a percutaneous catheter drainage with CT or ultrasound guidance, and attention to the primary disease (9). If the case requires surgical correction,an aggressive approach should be considered.Antibiotics are adjunctive therapy, and should be considered in all cases.Adequate coverage should be provided for aerobic,anaerobic and enteric gram-negative bacteria (5).The morbidity and mortality of psoas abscesses are significant. The insidious nature of the disease and frequent delay in diagnosis are crucial for the outcome (4).

In summary, this case demonstrates a rare association of psoas abscess with pleural effusion and subcutaneous soft tissue mass. Thus, awareness of this syndrome complex in conjunction with aggressive therapy will lead to decreasing the possibility of severe complications.

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