

A Case of Tuberculosis Presenting with an Abscess Extending from Supra-Sternal Region to Anterior Mediastinum

SUPRA-STERNAL BÖLGEDEN ANTERİOR MEDIASTENE UZANAN ABSE KLİNİĞİ İLE ORTAYA ÇIKAN BİR TÜBERKÜLOZ OLGUSU

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Summary

Purpose: To draw attention to extrapulmonary tuberculosis that may present with confusing clinical manifestations.

Case Report: A 74-year-old female patient was admitted with a history of recurrent suprasternal abscess for one year. Magnetic resonance imaging confirmed the presence of sternal osteomyelitis and anterior mediastinal mass. The diagnosis of tuberculosis was proven in specimen obtained from debridement by acid-fast staining and histopathologic examination. The patient was treated with first-line agents, which were isoniazid, rifampin, pyrazinamide and ethambutol. Further surgical intervention was not needed besides the medical treatment.

Conclusion: In the extrapulmonary tuberculosis cases diagnosis may sometimes be problematic. Prolonged antibiotherapy is essential in such cases; however, combination of antibiotherapy and surgical debridement may be sometimes necessary.

Key Words: Mycobacterium tuberculosis, Sternum, Osteomyelitis

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Özet

Amaç: Akciğer dışı tüberkülozun bazen karışık klinik bulgularla ortaya çıkabileceğine dikkati çekmek.

Olgu Sunumu: Yetmiş dört yaşında bayan olgu son bir yıldır tekrarlayan substernal abse nedeniyle başvurdu. Magnetik rezonans görüntüsünde sternumu tutan osteomyelit ve anterior mediastinal kitle tespit edildi. Tüberküloz tanısı debridman sırasında alınan materyalin asid-alkole dirençli boyama ve histopatolojik değerlendirilmesiyle konuldu. Hasta ilk seçenek ajanlar olan izoniazid, rifampisin, pirazinamid ve etambutol ile tedavi edildi. Bu sırada medikal tedaviye ek başka bir cerrahi girişime gerek duyulmadı.

Sonuç: Akciğer dışı tüberküloz olgularında tanı koymak her zaman kolay olmamaktadır. Ayrıca tedavisinde uzun süreli antibiyotik tedavisi esas olmakla beraber antibiyotiklere ek olarak cerrahi debridman da gerekebilir.

Anahtar Kelimeler: Mycobacterium tuberculosis, Sternum, Osteomyelit

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Case Report

Although pulmonary infections have been described as the most common clinical feature, *Mycobacterium tuberculosis* involves lenfoid tissues, pleura, intestinal system, bone, joint and other tissues. We report a case of tuberculosis presenting with an abscess extending from supra-sternal region to anterior mediastinum.

A 74-year-old female patient was admitted with wound infection. The patient had chronic

renal disease (CRD), and a history of the patient included an operation through a thoracal incision because of sub-sternal mass (suspicion of lipoma) one year ago. Three months after the operation, a wound infection had occurred in the operation site. Although wound specimens did not yield growth on aerobic cultures, she underwent various empirical antibiotherapy. *Pseudomonas aeruginosa* was grown in the last culture, and the patient was consulted by the department of infectious diseases.

Her initial physical examination was remarkable for substernal suppuration and necrosis. The laboratory values were as follows: hemoglobin 11.2g/dl, white blood cell count 6600/mm³, erythrocyte sedimentation rate 47mm/h (normal range:1-10), serum C-reactive protein 43U/l (normal range: 0-6), serum urea 162mg/dl (normal range: 17-46), serum creatinine level 3.5mg/dl (normal range: 0.5-1.2), K⁺ 5.56mEq/l (normal range: 3.5-5.5). In urine analysis, urine creatinine was 0.6g/day (normal range: 0.8-1.8); microalbumin was 50mg/l (normal: <20mg/l). The chest radiogram showed mediastinal enlargement. An irregular hypodense area in anterior mediastinum was seen on the thorax computed tomography (CT). Magnetic resonance imaging (MRI) revealed an inflammatory mass, measured 6x 8x 5.5 cm in diameter, extending from sub-dermal connective tissue to anterior mediastinum containing proximal sternum and related to connective tissues in the anterior thorax wall. No other tuberculous foci were found in the patient. She was hospitalized and started on ceftazidime 2g/8 hours, plus amikacin 1g once a day parenterally. The wound has been dressed with 10% polyvinylpyrrolidone-iodine (Biokadin®; Biokar Duzce-Turkey) for two weeks. The specimen obtained from debridement of the remaining wall into the abscess was evaluated microbiologically and histopathologically. There were no bacteria in gram staining, acid-fast bacilli were observed with conventional basic fuchsin method (Ziehl-Neelsen). Mycobacterial culture was negative. Histopathological examination of the debridement tissue showed chronic granulomatous inflammation with caseation necrosis due to tuberculosis. Histologically; coalescent granulomas, composed of epithelioid histiocytes surrounded by fibroblasts, lymphocytes and multi-nucleated giant (Langerhans) cells were observed. There were caseation necrosis and calcification in the centers of granulomas. The inflammation was most prominent in the reticular dermis and in some areas it was extended into the subcutaneous tissue.

The patient was considered tuberculous osteomyelitis, because of acid-fast staining positivity, chronic granulomatous inflammation on histopathological evaluation and an inflammatory mass in the anterior mediastinum involving proximal sternum and anterior thorax wall on MRI. Therefore, the patient was started on first-line antituberculosis drugs (Isoniazid, Rifampin, Pyrazinamide, Ethambutol). After nine months of the therapy, the patient was cured without any need for surgical exploration.

Discussion

In the elderly, which is defined as people over 65 years of age, there are many reasons for more frequent infection (1). Many chronic illnesses are associated with an increased prevalence of infectious diseases in elderly, and complications such as cellulitis of surrounding tissue, contiguous osteomyelitis, and bacteremia may easily be seen in local infections. *Pseudomonas auroginosa* is a rare infectious agent in primary pyodermas. Controversy, it may be common etiologic agent in secondary bacterial infection complications preexisting skin lesions such as traumatic lesions, especially chronic decubitus ulcers and diabetic foot infections. In elderly, pseudomonas skin infections should be evaluated for deeper infections or underlying diseases.

Mean incidence of infections caused by *Mycobacterium tuberculosis* is 26 per 100,000 in Turkey (2). This incidence is twice higher in elderly and 10 to 15 fold higher in patients with CRD compared to general population, indicating the situation explained by compromised immunity secondary to uremia (3). Tuberculosis in CRD patients often manifests as the extrapulmonary form of the disease, which typically involves kidney and peritoneum. However, rare presentations such as pyomyositis have also been reported (4).

Only 3% of patients with tuberculosis show musculoskeletal involvement, which develop in spine or single, large, weight-bearing joints. Taşova et al reported 98 cases of extrapulmonary tu-

berculosis in adults (5). In this series, the rate of bone-joint involvement was 11.2% most of which were spondilitis cases (81.8%) and none had sternal tuberculosis.

In the literature, sternal tuberculosis and mediastinitis are rare clinical pictures and reported as primary after thoracic surgery or reinfections (6-9). It is quite difficult to determine whether the case presented here was an iatrogenic infection developed after her first surgical operation or an overlooked reinfection due to immune-suppression. Aribaş et al reported a cold abscess in sternum in a nine-month-old boy as a complication of BCG vaccination from our country (10). This uncommon complication was diagnosed by both histopathological and intraoperative macroscopic findings. The case was operated and treated successfully with anti-tuberculotherapy for 6 months.

Clinically non-specific manifestations like low-grade fever, weight loss, localized tenderness and pain, may delay the diagnosis. In our patient, diagnosis was based on acid-fast stain, histopathological evaluation and MRI since mycobacterial culture was negative because of the dressing wound with 10% polyvinylpyrrolidone-iodine. Differential diagnosis of extrapulmonary tuberculosis includes sarcoidosis and other granulomatous infections such as mycosis and nontuberculosis mycobacterial infections. Sarcoidosis usually has little lymphocytic reaction around granulomas, unlike granulomatous tuberculosis (11, 12). When necrosis occurs in sarcoidosis, it is usually fibrinoid in type rather than caseation as seen in our case. If the ethiological agent were a nontuberculosis mycobacterial infection, treatment would not be successful.

As another method to diagnose chronic inflammation radiologically, MRI might be more helpful than CT to detect tuberculous masses that can be visualized as those containing areas of low signal intensity on both T1- and T2- weighted images (13).

When the nature of lesion and clinical picture suggest extrapulmonary tuberculosis, microbi-

ological mycobacterial stain and culture, and chronic granulomatous inflammation with caseation necrosis on the histopathological examination are helpful to diagnose of tuberculosis. Prolonged antibiotherapy is essential in the treatment of tuberculosis; however, combination of antibiotherapy and surgical debridement may be sometimes necessary for optimal outcome in tuberculous osteomyelitis.

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