

# Multiple Metastatic Tuberculosis Abscesses and Pott's Disease in an Immunocompetent Patient: Case Report

## Bağışıklık Sistemi Normal Olan Bir Hastada Çok Odaklı Metastatik Tüberküloz Abseleri ve Pott Hastalığı

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**ABSTRACT** Metastatic tuberculous abscess (tuberculous gumma) is a rare form of cutaneous tuberculosis. A 16 years old female presented with painless cutaneous swelling at her neck and right thigh. She also suffered from back pain. She was diagnosed as soft tissue abscess according to ultrasound findings. These abscesses were painless and fluctuant. Chest computed tomography revealed an abscess involving the chest wall and the paravertebral area. Smear and sputum culture were negative for *M. tuberculosis*. In addition, smears and cultures of the abscess were negative for bacteria and fungi. There was no history of tuberculosis and no contact with patients with contagious tuberculosis. *M. tuberculosis* grew in the abscess culture. She was diagnosed as tuberculous gumma and Pott's disease. The patient recovered after antituberculous treatment. Subcutaneous abscess should be considered as tuberculosis abscess based on the negative smear and nonspecific culture results of pus.

**Key Words:** Tuberculosis; abscess; tuberculosis, spinal

**ÖZET** Metastatik tüberküloz absesi (tüberküloz gomu) cilt tüberkülozunun nadir bir formudur. On altı yaşında bayan hasta boynunda ve sağ uyluk bölgesinde ağrısız cilt şişlikleri ile başvurdu. Aynı zamanda hastanın sırt ağrısı yakınması vardı. Ultrason bulguları ile hastaya yumşak doku absesi tanısı konuldu. Bu abseler ağrısızdı ve fluktuasyon vermekteydi. Toraks tomografisinde paravertebral ve göğüs duvarı absesi vardı. Hastadan alınan balgam yayma ve kültüründe *M. tuberculosis* tespit edilmedi. Aynı zamanda abseden alınan yayma ve kültürlerde bakteri ve mantar da yoktu. Hastanın geçirilmiş tüberküloz ve temas öyküsü yoktu. Abse kültüründe *M. tuberculosis* üredi. Hastaya tüberküloz gomu ve Pott hastalığı tanısı konuldu. Anti tüberküloz tedavisinden sonra hasta iyileşti. Nonspesifik bakteriler için pü yayması ve kültür sonucu negatif olan ciltaltı abseli hastalarda, tüberküloz absesi akla gelmelidir.

**Anahtar Kelimeler:** Tüberküloz; abse; tüberküloz, spinal

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**T**uberculosis (TB) is a major cause of illness and death worldwide, especially in Asia and Africa. Globally, 9.2 million new cases and 1.7 million deaths from TB occurred in 2006.<sup>1</sup> Tuberculosis gumma or metastatic tuberculosis abscess is a rare form of cutaneous tuberculosis that develops because of hematogenous metastasis. Lesions are generally multiple in children with malnutrition and immunosuppressed adults.<sup>2,3</sup> The most common locations are the lower extremities and chest. Cutaneous tuberculosis abscess is now rare in developed countries and tuberculosis is not often suspected as the possible cause of cutaneous abscesses.<sup>4</sup> We present a

16-year-old female patient with multiple metastatic tuberculosis abscesses and Pott's disease, due to rarity of this presentation.

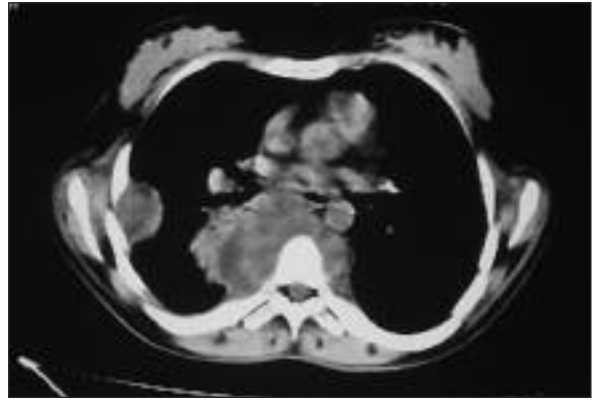
## CASE REPORT

A 16-year-old female presented with painless cutaneous swelling on his neck and right thigh. She suffered from back pain. These abscesses were painless and fluctuant. The complaints of the patient had started eight months previous with swelling on his cervical region. The patient was admitted to a head and neck surgeon who diagnosed her to have abscess related to dental infection and she was treated with a non-specific antibiotic therapy. The lesions did not improve and a new lesion developed in the right thigh, and back pain was added to her complaints. She admitted to our hospital and she was diagnosed as soft tissue abscess according to ultrasound findings. Tuberculin skin test with 5 tuberculin units revealed a positive reaction measuring 18 mm after 72 hours. There was no history of tuberculosis and no contact with patients with contagious tuberculosis.

Two homogeneous opacities in the right side of the chest wall and in the right paracardiac region were detected on chest X-ray (Figure 1). Chest computed tomography (CT) revealed an abscess involving the chest wall and the paravertebral area but not the lung parenchyma (Figure 2). In addition we observed a compression fracture of the seventh thoracic vertebra and a paravertebral abscess



**FIGURE 1:** Areas of homogeneous opacity in right chest wall and right paracardiac region on chest X-ray.



**FIGURE 2:** An abscess in right paravertebral region and another abscess in chest wall leading to compressive atelectasis as demonstrated on chest CT.

between T4-9 vertebrae on magnetic resonance imaging (MRI) (Figure 3). Lower extremity MRI revealed an abscess formation in right thigh muscles (Figure 4).

A normal blood count with mild normocytic and normochromic anaemia was revealed on routine testing. Erythrocyte sedimentation rate and C-reactif protein levels were high. Urine analysis and blood biochemistry were within normal limits. Smears and cultures of the abscess were negative for bacteria and fungi. *Mycobacterium tuberculosis* was cultured in the pus obtained from the thigh abscess. Smear and culture of the sputum were negative for *M. tuberculosis*.

Antituberculous therapy (ATT) was initiated with rifampicin, isoniazid, pyrazinamide, and ethambutol, and after two months, rifampicin and isoniazid were given as maintenance therapy. ATT had to be given for 12 months. Cutaneous abscess slowly improved with total resolution. Chest X-ray showed marked improvement after six months of treatment (Figure 5). The patient gave informed consent for the publication of this report.

## DISCUSSION

Cutaneous tuberculosis is rare and constitutes only about 0.15% of all dermatologic outpatients.<sup>5</sup> Tuberculous gumma is a form of cutaneous TB. Single or multiple metastatic tuberculous abscesses may develop on the extremities and trunk by hematogenous spread from a primary focus of infection during a period of decreased immunity, particularly



**FIGURE 3:** A hyperintense paravertebral abscess, heterogeneous-hyperintense appearance in vertebral body compatible with spondylitis and gibbus deformity on sagittal T2-weighted MRI images.

in children with malnutrition and immunosuppressed adults. However, they may also develop following insidious bacteremia without a primary focus of infection.<sup>3,6</sup> Cutaneous TB has also been described following subcutaneous or intramuscular injection.<sup>7</sup> The association of tuberculous gumma with other forms of cutaneous tuberculosis, such as tuberculosis verrucosa cutis and lichen scrofulosorum has been described.<sup>8</sup> In our case, the patient was not malnourished or immunosuppressed. In addition, there was no association between the tuberculous gumma and other forms of cutaneous tuberculosis.

Vertebral tuberculosis is the most common form of skeletal tuberculosis; gluteal abscess may result from Pott's spine. The infection then tracks down along the aorta and its branches to present at the buttock, or tracks along the femoral artery to present on the medial aspect of thigh.<sup>9,10</sup> In our ca-

se, the cutaneous abscess in right thigh was identified as tuberculosis gumma due to lack of direct relation to spine lesions.

Metastatic tuberculous abscesses must be differentiated from Staphylococcal abscesses. In addition to traditional acid-fast bacillus smears and cultures, diagnostic accuracy can improve with new techniques such as polymerase chain reac-



**FIGURE 4:** A cystic lesion is seen in right thigh muscles with peripheral enhancement consistent with abscess formation on coronal postcontrast T1-weighted image.



**FIGURE 5:** Chest radiograph showed complete resolution of the lesions under anti-tuberculous treatment.

tion.<sup>4,11</sup> The patient was diagnosed as metastatic tuberculosis abscess and Pott's disease based on the clinical findings, negative culture results for bacteria and fungi, positive tuberculin skin test, positive culture result for TB, and radiologic findings.

Because most of cutaneous tuberculosis cases are manifestations of systemic involvement and the bacillary load in cutaneous tuberculosis is usually

less than that in pulmonary tuberculosis, treatment regimens are similar to that of tuberculosis in general.<sup>12</sup> An increased awareness of tuberculosis abscess will allow for the proper diagnosis and management of this disease. Possible tuberculosis etiology should be considered if the pus is sterile and in the absence of response to nonspecific treatment.

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