

# Tuberculous spondylitis with bilateral pleural effusion

Ünal ŞAHİN\*, Hüseyin YORGANCIGİL\*\*, Mehmet ÜNLÜ\*

\*S.D.Ü.T.F. Göğüs Hastalıkları Anabilim Dalı,

\*\*S.D.Ü.T.F. Ortopedi ve Travmatoloji Anabilim Dalı, ISPARTA

## ÖZET

Pott hastalığının ve bilateral plevral effüzyonun birlikte olduğu 67 yaşında bir erkek olgu sunulmuştur. Öksürük, dispne ve sırt ağrısı yakınmalarıyla ilk başvurduğu doktor tarafından hasta nonspesifik pleuritis tanısıyla tedaviye alınmıştır. Bu başvurusundan 4 ay sonra sırt ağrısında artış ve alt extremitelerde güç azalması nedeniyle merkezimize başvurmuştur. İleri tetkikler sonucunda hastaya 7. ve 8. trokal vertebraları tutan tüberküloz spondilitis tanısı konmuştur. Nörolojik bulgular nedeniyle olguya cerrahi ve aynı zamanda anti-tüberküloz tedavi uygulandı. Hastanın yapılan son kontrolünde klinik ve radyolojik olarak tedaviye çok iyi yanıt verdiği gözlemlendi.

**Anahtar Kelimeler :** Pott hastalığı, plevral effüzyon.

## SUMMARY

We were reported a case of Pott's disease with bilateral pleural effusion in a 67-year-old male patient. The primary care physician commenced anti-microbial therapy by considering the non-specific pleuritis. However, four months after his first complaints, progressive back pain and weakness of lower limbs was occurred. By further examination, we diagnosed an active tuberculous spondylitis of the 7<sup>th</sup> and 8<sup>th</sup> thoracic vertebrae. Operative intervention was undertaken because of neurological findings. We also started anti-tuberculous chemotherapy. A proper clinical and radiological response to chemotherapy and surgery was observed at the last follow-up.

**Key Words :** Pott's disease, pleural effusion.

## Introduction

Spinal tuberculosis, most common and most dangerous form of skeletal tuberculosis, is increasing dramatically throughout the world, particularly in such developing countries as Turkey (1), but the diagnosis and treatment of the disease remains controversial. The symptoms of tuberculous spondylitis are not specific and the diagnosis may be delayed for this reason. Here, we report a patient with tuberculous spondylitis with bilateral pleural effusion.

## Case report

A-67 year old man presented with low back pain that had increased over the previous nine months. He had presented to his primary care physician with the symptoms of cough, dyspnoea and back pain. On that examination, breath sound had been found to

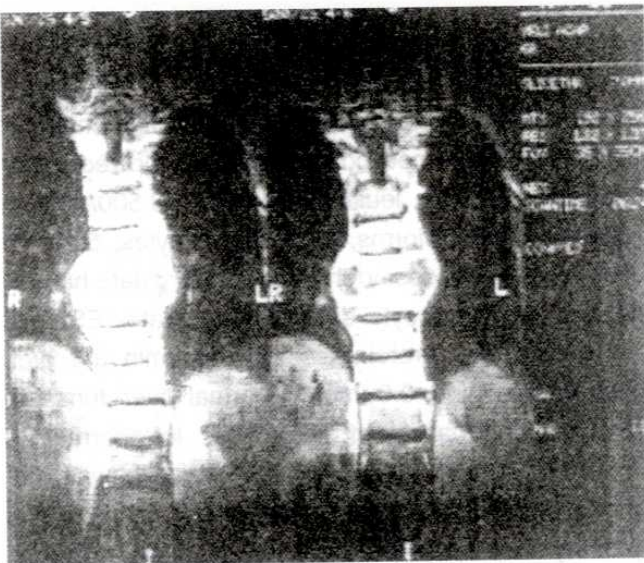
decrease bilaterally over the posterior bases. There was bilateral pleural effusion on the initial chest X-ray. The initial blood count had also showed a hematocrit of 43.8%, leukocyte count of 9.500/ml with 59% segmented forms, 33% lymphocytes, 5% monocytes and 3% eosinophils. Laboratory data had revealed an erythrocyte sedimentation rate (ESR) of 68 mm/h, total protein 6.8 g/dl, albumin 3.8 g/dl, serum creatinine 0.6 mg/dl, normal liver function, and no abnormalities of electrolytes. Intradermal tuberculin test on admission was negative with 4x5 mm of reddening and with 3x2 mm of induration. The primary care physician commenced anti-microbial therapy by considering the non-specific pleurisy. The patient had also been receiving nonsteroidal anti-inflammatory drugs and myorelaxants for back

pain. Cough and dyspnoea improved over two months without any additional treatment.

He was then admitted to our hospital because of back pain and progressive weakness of his lower limbs, four months after his first complaints. He had an history of pulmonary tuberculosis 45 years earlier during his military service, but had not completed antituberculous chemotherapy at that time.

General status of the patient was fine apart from a subfebrile fever of 37.8°C. Superficial lymph nodes were not palpable. There was no pathologic breath sound in chest examination. Chest radiogram on admission didn't show any parenchymal and pleural lesions. Thoraco-lumbar vertebrae were tender with deep palpation. Blood count revealed a hematocrit of 45.6%, leukocyte count of 7.500/ml with 61% segmented forms, 32% lymphocytes, 4% monocytes and 3% eosinophils. Laboratory data revealed an ESR of 58 mm/h, total protein 7.0 g/dl, albumin 3.9 g/dl, AST 110 mg/dl, ALT 367 mg/dl, LDH 1579 gr/dl, serum creatinine 0.7 mg/dl. There were no abnormalities of electrolytes.

Bilateral, paravertebral soft tissue swelling was found on chest and abdominal computed tomography (CT). Magnetic resonance imaging (MRI) of the spine, showed a mass lesion that destructed 7th and 8th thoracic vertebrae (Figure 1).



**Figure 1.** Magnetic resonance image of the thoraco-lumbar spine demonstrates the bone destruction of 7th and 8th thoracic vertebrae and paravertebral abscess formation.

In neurological examination, deep tendon reflexes were bilaterally hypoactive, there were generalized hypoesthesia on left lower limb, and muscle strength was 1/5 in both lower limbs.

Operative intervention was undertaken because of these neurological findings. Anterior radical surgery was performed. An abscess was found with abundant caseous material which was compressing medulla spinalis. It was evacuated, all the diseased tissue and sequestra at the 7th and 8th vertebrae were excised. Tissue samples were obtained for histological study and anterior decompression of the spinal cord was performed safely. Anterior instrumentation and fusion with bone grafting was performed after discectomy.

Histopathological findings were defined as caseous necrosis with Langhans's giant cells and epithelioid cells. We therefore, made a diagnosis of tuberculous spondylitis and started anti-tuberculous therapy with isoniazid 300 mg/day, rifampicin 600 mg/day, ethambutol 1500 mg/day, pyrazinamide 2000 mg/day. The diagnosis was confirmed after two months, by cultures revealing the growth of *Mycobacterium tuberculosis*.

Neurological status of the patient improved slightly but he was pain-free after the operation. He was then ambulated with crutches and sent to rehabilitation.

## Discussion

Pott's disease, a condition characterized by massive resorption of the spinal vertebrae, is one of the most striking pathologies resulting from local infection with *Mycobacterium tuberculosis*. The vertebral body, intervertebral disc and ligaments, paravertebral soft tissues, and the epidural space are involved. It usually represents a reactivation of latent disease, frequently years after the initial infection.

In a publication where it was possible to determine the date of previous pulmonary tuberculous infection in patients, the mean interval between that infection and presentation with bone and joint tuberculosis was 17 years (2). Tuberculous spondylitis has varied manifestations. The initial subjective symptoms may be relatively nonspecific, such as back pain, vertebral tenderness, fever, chilliness, and weight loss. The commonest presentation is with local pain with subsequent stiffness and li-

mitation of movement. Systemic symptoms are rare. If a paraspinal cold abscess develops, sinus formation or signs of spinal cord compression may be presenting features.

Plain radiography remains the cornerstone for imaging, but newer cross-sectional modalities such as CT, US, and MRI are becoming increasingly valuable in early and accurate diagnosis (3). Chest radiograms demonstrate a destructive process of the vertebrae, involvement of the disc space, and spinal deformity. The lower thoracic and lumbar spine are most commonly affected. MRI is more useful to demonstrate paravertebral abscess clearly and more useful in the differential diagnosis of vertebral osteomyelitis and disc space infection than is CT. Spinal tuberculosis has often been called the great imitator because its radiographic appearance may mimic other pathological conditions affecting the spine (4). Coexistence of bilateral pleural effusion, as in this case, can usually interfere with the diagnosis directing the physician towards the respiratory system disease.

By controlling the morbid process and improving the prognosis for spinal tuberculosis, antituberculous agents are the mainstay of management. When a patient presents early with minimal involvement, conservative chemotherapy is indicated. The standard triple chemotherapy (iso-

niasid, rifampin, and pyrazinamide), should be given for at least 12 months, rather than the 6 to 9 month short-term chemotherapy that has been advocated by some (5-7). We commenced a therapy with addition of ethambutol in this patient in whom there was late diagnosis and inadequate prior chemotherapy. A proper clinical response to chemotherapy was observed at the last follow-up.

Although chemotherapy is the mainstay in the management of tuberculous spondylitis, surgical procedures also play an important role. No drugs used in the management of tuberculosis can solve the problems arising from bone destruction, such as pre-existing and/or residual deformity, paraplegia, and pulmonary insufficiency due to spinal deformity (8).

There is no single treatment that is good for all patients, but we agree with the authors that surgical treatment is indicated in patients who have advanced tuberculosis with unacceptable complications such as paraplegia and / or deformity (9,10). The surgery should aim decompression of the cord by removal of pus, granulation tissue and sequestra, with internal splintage with bone grafts, and reduce the hospital stay. In addition to all these procedures, we used extra-splintage with anterior instrumentation because a huge amount of tissue had to be debrided. Rijid fixation with instrumentation provided early mobilization of the patient with regression of the neurological symptoms.

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