CASE REPORT

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Acromioclavicular joint tuberculosis: apropos of two cases

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Tuberculosis is a great masquerader presenting in varied forms and in atypical locations. The myriad presentations of tuberculosis may complicate its diagnosis. We present two cases of acromioclavicular joint tuberculosis treated with a regimen of antitubercular drugs for 18 months leading to a complete resolution of symptoms.

Key words: Tuberculosis; arthritis; acromioclavicular joint.

Tuberculosis is a devastating disorder causing considerable cost in terms of human health and loss of workforce. Musculoskeletal involvement, although accounts for a small percentage of cases, is highly recalcitrant and needs prolonged periods of treatment for complete cure. Unusual cases with atypical presentations may cause considerable challenge in the diagnosis and management. We present 2 cases of tuberculosis in the acromioclavicular joint, which is an extremely rare site of involvement for tuberculosis.

Case report

Case 1– A 26-year-old male presented to our outpatient clinic with low back, right shoulder and right knee pain of 4 months duration. The pain was localized in nature, mild in intensity, increased during night and was only partly relieved by analgesics. There was no history of weight loss, night sweats, and morning stiffness. He gave no previous history of tuberculosis or contact with persons having tuberculosis.

On physical examination of shoulder, there was an ill-defined swelling of 2x1 cm on outer end of acromion, which was firm, mildly tender. Axillary lymph nodes were enlarged. There was restriction in the shoulder movement beyond 70 degrees for abduction, 65 degrees for flexion, beyond 20 degree for external and internal rotation. Examination of spine revealed tenderness over L2, L3 and L4 vertebrae and there was a paraspinal muscle spasm. Neurological examination revealed no deficit. Haemogram liver function test and C-reactive protein level were within normal limits. The erythrocyte sedimentation rate was 70 mm in one hour.

On x-ray, there was an osteolytic lesion in the outer end of the clavicle with enlargement of the acromioclavicular joint space. On MRI of the right shoulder, there was subarticular marrow edema in the acromioclavicular joint appearing hypointense on T1 weighted and hyperintense on T2 weighted and STIR sequences. There was non-homogenous diffuse thickening of the synovial capsule with collection around the joint extending to the surrounding myofascial compartment (Fig. 1). The physical and radiological examinations of the knee revealed no abnormal finding.

On MRI of lumbosacral region, there was involvement of the L3-L4 intervertebral disc and paradiscal vertebral

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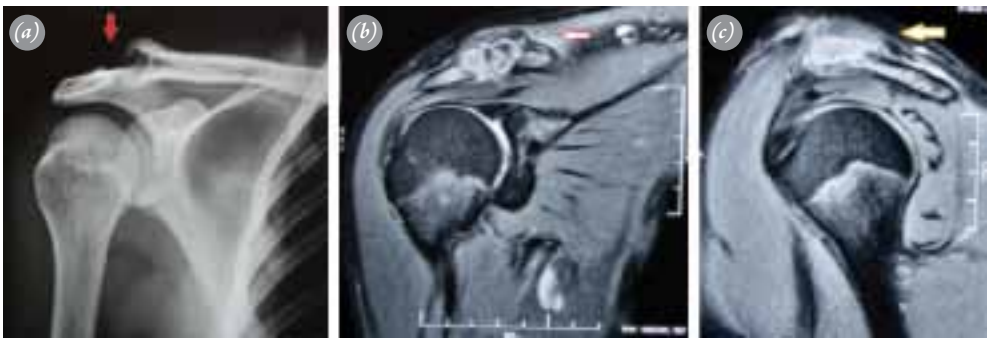

Fig. 1. Plain anteroposterior radiograph shows evidence of lytic destruction of the lateral end of the clavicle **(a)** Fat suppressed T2 weighted images in the coronal **(b)** and sagittal **(c)** planes show ill-defined area of hyperintensity in the acromio-clavicular joint suggesting an inflammatory process. [Color figure can be viewed in the online issue, which is available at www.aott.org.tr]

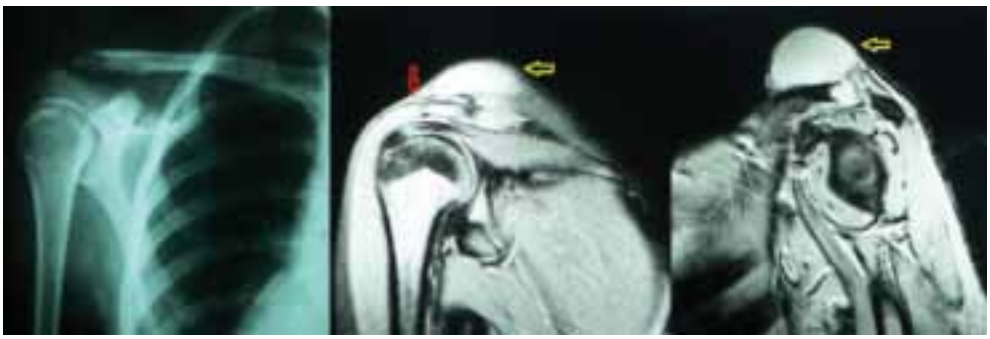

Fig. 2. Plain anteroposterior radiographs show lytic lesion in the distal end of the clavicle. T2 weighted coronal and sagittal images show hyper-intense well-defined lesion in the subcutaneous plane communicating with the acromioclavicular joint consistent with abscess formation. [Color figure can be viewed in the online issue, which is available at www.aott.org.tr]

end plates, with loss of height of the L4 vertebral body and mild scoliosis to the right. Bone scintigraphy revealed increased uptake in the right acromioclavicular joint, in the L3, L4 vertebrae, and on the anterior part of the left sixth rib. Mantoux test was positive. Soft tissue Punch biopsy around the acromioclavicular joint using a biopsy forceps revealed a caseating granuloma with typical tubercular giant cells and a positive stain for acid-fast bacilli.

A diagnosis of tuberculosis was made and the patient was managed with antitubercular therapy. The therapy was started on a regimen of 4 drugs for 4 months (Rifampicin, Isoniazid, Pyrazinamide, Ethambutol), continued with 3 drugs (Ethambutol stopped) for the three following months and 2 drugs (Rifampicin, Isoniazid) for the last 11 months, with a total treatment of 18 months. For the vertebral lesion, the patient was placed on a lumbosacral brace and ambulation was allowed only after 1 month of bed rest. During follow-up there was a steady decrease in the level of ESR at the end of 6 months, no progression of deformity of spine or onset of neurological deficit was noted. At the end of 18 months, patient was completely free of symptoms. His shoulder movements were restored, his scoliosis did not progress and neurological status was normal. At last follow-up, the patient was symptom free for the past 4 months after the completion of the chemotherapy.

Case 2– A 14-year-old girl presented to the outpatient clinic with pain and swelling on the outer end of her left clavicle. The pain was present throughout the day and increased in the night. She had history of significant weight loss. No history of fever, chronic cough or tuberculosis was noted.

On examination, a non-tender cystic swelling of approximately 5 x 4 cm was present on the outer end of the acromioclavicular joint. There was restriction of shoulder abduction beyond 60 degrees. On aspiration of the swelling, a cheesy material was obtained and sent for culture and antibiogram.

On radiograph of the shoulder, there was periarticular osteopenia in the outer end of the clavicle with widening of the acromioclavicular joint space. On MRI, there was hyperintense signal on T2-weigthed images in the outer end of the clavicle and in the tip of acromion with an enhancing lesion of approximately 4x3 cm over the ac-

romioclavicular joint suggesting abscess formation (Fig. 2). A diagnosis of tuberculosis was made based on the culture which revealed acid-fast bacilli and patient was started on antitubercular chemotherapy as per with the same regime as the case 1 (described above). The patient started showing resolution of symptoms after 2 months and was completely asymptomatic after completion of therapy with normal range of movement of the shoulder.

Discussion

Tuberculosis may present in many different forms and sites. The disease has a high incidence in developing countries. India alone accounted for an estimated one quarter (26%) of all tuberculosis cases worldwide, and China and India combined accounted for 38% in 2010.[1] Risk factors such as human immunodeficiency virus (HIV) infection, alcoholism, homelessness, crowded living conditions, systemic illness, poor access to medical care, increased incidence of anti tumor necrosis factor alpha usage in rheumatology patients and immigration problems worldwide continue to be the risk factors in developing countries. Skeletal involvement occurs in approximately 10% of all patients with extra-pulmonary tuberculosis and spinal involvement accounts for approximately 50% of these cases.[2] Involvement of shoulder girdle is rare.[3] Our two patients did not have any systemic illness or infection. However, they lived in crowded conditions, which could have been one of the underlying reasons for the disease.

An exhaustive search of literature reveals that the isolated acromioclavicular tuberculosis is extremely rare.[2,4] Richter et al. could report only one case of acromioclavicular joint tuberculosis in their study conducted from 1955 to 1980.[4] The reason for the rare involvement of this joint is unknown. The disease may present with symptoms of painless swelling of the joint or as a discharging sinus. Tan et al. reported a single case of acromioclavicular joint tuberculosis presenting as a scrofuloderma with a discharging sinus.[5] In the case reported by Çevik et al., the patient had a painless presentation.[3] The disease usually starts either from the lateral end of the clavicle or from the tip of the acromion.[2] On radiography, the presentation is as a lytic lesion with periarticular osteoporosis. There is a tendency for rapid destruction of the articular surface leading to arthritis.

Other lesions, which may mimic tuberculosis, must be excluded during the differential diagnosis. These include bacterial infection presenting as osteomyelitis, brucellosis, fungal infections, atypical mycobacterial infections, endemic syphilis, rheumatoid arthritis, cat scratch disease, leprosy and neoplastic disorders. A thorough history, physical examination, and radiological studies will help the diagnosis. However, the definitive diagnosis of tuberculosis is only made based on histological and bacteriological confirmation.

The mechanism of osteoarticular tuberculosis is most commonly haematogenous spread from an infected visceral focus, especially the lungs. The infection reaches the skeletal system because of bacillemia. A positive biopsy showing the typical tubercles remains the gold standard for the diagnosis.[2] A biopsy from an enlarged lymph node may also be helpful. However, MRI is a good modality to diagnose tuberculosis in the form of marrow changes, joint effusion, synovial effusion, pannus, bone and articular cartilage erosions. Contrast enhanced MRI would further help the diagnosis.[3]

The treatment of osteoarticular tuberculosis is primarily by chemotherapy. In refractory cases, debridement of the tissue would enhance the action of antitubercular drugs. There has however been no consensus regarding the duration of chemotherapy with prescribed treatment periods ranging from 9 to 18 months.[2,3,6] In our institution, we use chemotherapy for a period of 18 months. Excision of outer end of clavicle is described in chronic cases presenting with acromioclavicular joint arthritis.[7]

In conclusion, acromioclavicular tuberculosis is very rare. The diagnosis of osteoarticular tuberculosis should be considered in a patient with unexplained swelling and pain in the acromioclavicular joint. A prompt induction of antitubercular chemotherapy would cause resolution of symptoms and maintain the joint congruity.

Conflicts of Interest: No conflicts declared.

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