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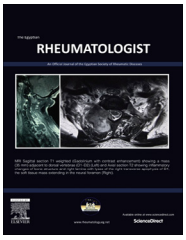

CASE REPORT

Isolated tuberculous arthritis of the dorsal facet joint

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KEYWORDS

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Abstract *Introduction:* Septic arthritis of the facet joint is a severe infection. The lumbar spine is frequently involved; the dorsal one is rarely affected.

Case report: We present a case of a patient with a history of right cervicobrachial neuralgia with anorexia and asthenia without fever. Performed investigations had concluded to tuberculous arthritis of the dorsal facet joint. The tuberculous etiology is an originality of our observation since it has been reported in only one case. In the absence of histological and bacteriological proof, the diagnosis was established according to clinical, epidemiological and biological data. Treatment was based on antitubercular antibiotics.

Conclusion: The tuberculous origin of septic facet joint should be considered in front of trolling and unexplained back pain, especially in endemic countries.

1. Introduction

Skeletal involvement occurs in up to 3% of all tuberculosis (TB) patients [1,2]. *Mycobacterium tuberculosis* bacteria can infect any bone, joint, tendon or bursa; however, the spine is one of the most common musculoskeletal sites for infection [2]. In a case from another African country, rare TB localization of the wrist has been described and it has been suggested that nonspecific chronic wrist arthritis, especially if the patient is immunocompromised HIV infected should raise suspicion of TB [3]. In another case, isolated sacral tuberculosis was reported and it has been reported that a high degree of suspicion is needed in the presence of atypical clinical and radiological features particularly in Black Africa [4]. Septic arthritis of the dorsal facet joint (DFJ) is a rare clinical entity frequently underestimated. Its tuberculous origin is extremely rare. We report the observation of a patient suffering from cervicobrachial neuralgia with anorexia and asthenia and whose explorations revealed an infection of the DFJ of tuberculous origin. The diagnostic and therapeutic approaches as well as the clinical evolution were detailed.

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2. Case presentation

Mr. D.M. 71 years old with a history of end stage renal disease (ESRD), prostate adenocarcinoma treated with radiotherapy, was consulted for interscapular pain and right C8 cervicobrachial neuralgia with an inflammatory character, evolving for two and half months. He reported besides asthenia, anorexia and night sweats without fever. The physical examination revealed a positive bell test (suggestive of sciatica associated with disk herniation), hypoesthesia in the right C8 territory, a deficit of the interossei muscles on the same side, estimated at 2, and weak stretch reflexes in the upper limbs. Laboratory investigations have revealed an inflammatory syndrome with erythrocyte sedimentation rate (ESR) at 95 mm/1st hour, a C-reactive protein (CRP) equal to 171 mg/L without leukocytosis. Blood cultures were negative. The chest radiograph showed a blunting of the right costophrenic angle. Cervical spine X-ray revealed a C6–C7 decreased joint space. The spinal magnetic resonance imaging (MRI) showed lysis of the right transverse process of the first thoracic vertebra associated with a lamina and the costo-transverse joint change on the same side. Opposite to this same vertebra, there was a "mass" developing in the soft tissue, measuring about 35 mm in diameter, with a hypointense T1 signal, a hyperintense and heterogeneous T2 signal and an enhancement in the periphery after Gadolinium injection, associated with intracanalar extension (Figs. 1 and 2). The search for Koch bacillus in sputum and urine as well as the cytobacteriological investigations were negative. A CT-guided drainage of the mass brought greenish purulent fluid whose direct examination and culture was sterile. The QuantiFERON assay was positive. Given the insidious evolution, the immunocompromised host, the negativity of different bacteriological samples, the positivity of QuantiFERON test, blunting of the costophrenic angle on the chest radiograph and because of tuberculosis endemicity in our country, diagnosis of septic arthritis of the T1–T2 dorsal facet joint of tuberculous origin was retained. The patient was then treated with anti-tuberculosis quadritherapy associating Isoniazid, Ethambutol, Pyrazinamide and Rifampicin for 2 months relayed by Isoniazid and Rifampicin for 16 months. The outcome was favorable with disappearance of pain after 15 days of treatment, CRP and ESR negativity after two months of treatment and normalization of neurological examination after 6 months of treatment. MRI control after one year of treatment showed a regression of the collection of the soft tissue in the upper thoracic region with persistence of some soft tissue change without intraductal lesion.

The patients consent was taken and the case report was approved by the local ethics committee.

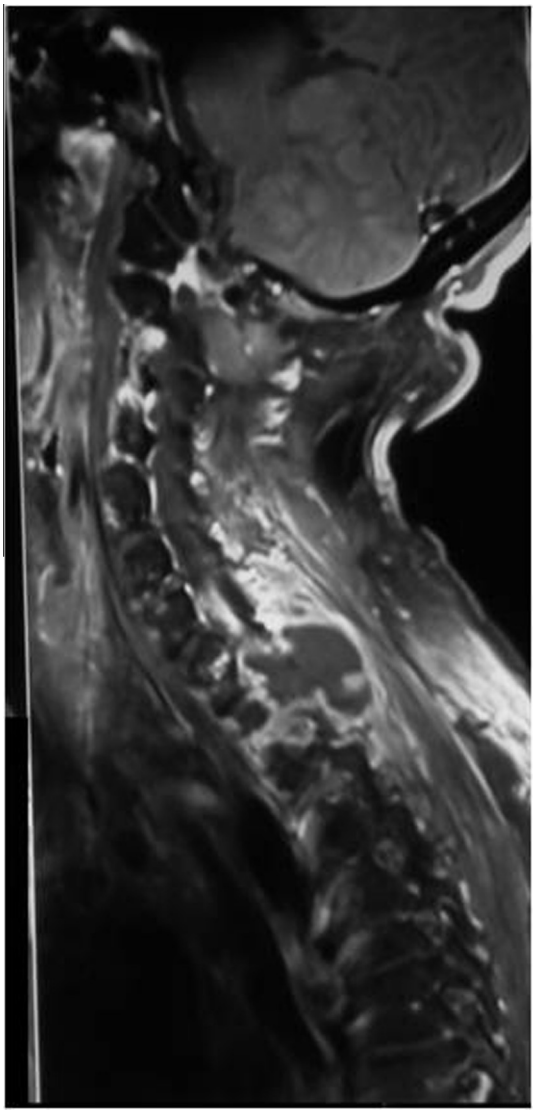

Figure 1 MRI sagittal section T1 weighted with Gadolinium injection: "mass" of 35 mm adjacent to T1–T2 level with peripheric contrast enhancement.

3. Discussion

Septic arthritis of the DFJ is a rare affection and little is known by rheumatologists. Only 50 cases have been published to date. Several predisposing factors have been reported in the literature such as age, diabetes, immunosuppression, rheumatoid arthritis, skin infections, neoplasia, parenteral treatments, intra-articular corticosteroid injections [5]. Our patient was elderly with a chronic kidney disease and a history of neoplasia. The average time to diagnosis varies from 3 weeks to several months [6]; it was approaching 3 months in our case. This delay would increase the patients' morbidity. The lumbar spine is the site of choice and the L4–L5 segment is the most commonly affected [7]. Dorsal localization is rare and has been only reported in three cases [8–10]. The clinical presentation is similar to that of infectious spondylodiscitis with spinal febrile syndrome but the symptoms are often lateralized to the side of the affected facet joint [6]. It associates a radiculopathy in 40% [11]. Severe neurological deficit is rare and only occurs in 10% of cases [11]. Our patient had C8 cervicobrachial neuralgia with neurological deficit which was the reason for consultation. There are often positive inflammatory markers. Blood cultures are positive in more than 50% of cases [6]. To identify the causal organism, it is often necessary to use a radio-guided articular drainage. In our case all bacteriological samples were negative. *Staphylococcus aureus* is responsible for nearly 70% of septic arthritis of the DFJ [6,10]. However, tuberculous etiology is extremely rare and has only been reported in one

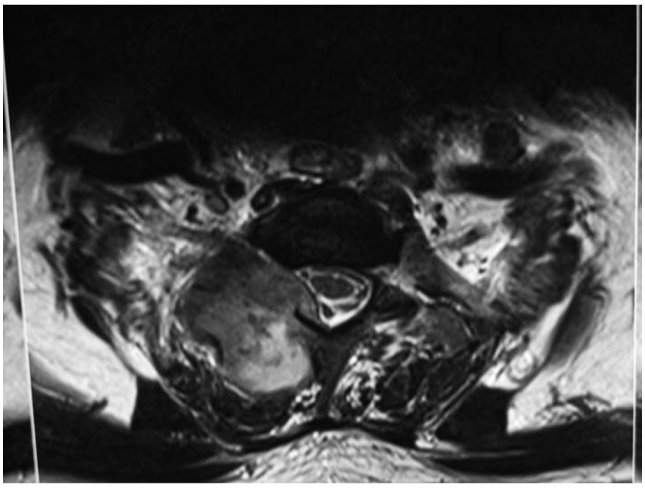

Figure 2 MRI axial section T2: inflammatory changes of bone structure with lyses of the right transverse apophysis, inflammatory changes of the right lamina of T1, "mass" developing in the soft tissue with contrast enhancement and with extension in neural foramina.

case [12]. Dissemination is often done by hematogenous way and the damage of the posterior arch of the vertebra during tuberculosis is rather secondary to venous spread (via the posterolateral venous plexus) [13]. Complications reported in the literature can be either local such as epiduritis or paraspinal abscess as in our patient, or remotely such as meningitis, endocarditis or osteo-articular infection [5,10]. Plain radiographs may be normal at the beginning [10]. MRI is the examination of choice to appreciate the extent of septic lesion with a very good sensitivity and specificity [9], it reveals abnormalities from the first 48 h. It also allows assessing the extent of the intra-ductal invasion and the adjacent soft tissue invasion. In the absence of well codified guidance, the treatment is patterned after that of infectious spondylodiscitis and strict rest is recommended. Polychemotherapy involving at least three anti-tuberculosis drugs in maximal dose in a continuous and sustained manner is recommended to avoid resistance of *M. tuberculosis*. The duration of treatment ranged from 6 to 18 months [14], it was 18 months in our case. Surgical indications are reserved for neurological complications [15]. In the first reported case of tuberculous arthritis of the dorsal facet joint, medical therapy alone was not effective in controlling infection, and surgical indication was imposed by the persistence of pain and worsening of radiographic lesions [12]. In our case, the medical treatment alone was sufficient with the disappearance of neurological signs and regression of radiological lesions. The prognosis of DFJ arthritis is good. Patients often heal without functional disability and the mortality rate is estimated at 2% [11].

In conclusion, our observation illustrates a rare case of septic arthritis of the DFJ of tuberculous origin. To our knowledge, this is the second reported case. The tuberculous origin should be considered in front of trolling and unexplained back pain, especially in endemic countries. In this case, neurological complications should be carefully sought, especially when there is a chest location.

Conflict of interests

The authors declare that they have no conflict of interests.

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