

A strange case of cervical pain

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Received 29 September 2011; revised 21 October 2011; accepted 15 November 2011

ABSTRACT

A 56-year-old man was admitted to hospital with fever, progressive fatigue, bilateral shoulder pain, paresthesias and stiffness after awakening. Differential diagnosis were several diseases such as rheumatoid arthritis, fibromyalgia and infectious spondylitis. Routine laboratory assays showed mild anemia and increased markers of inflammation. The worsening of clinical conditions led to performing a Computerized Tomography and a Cervical Magnetic Resonance Imaging which demonstrated an epidural liquid area in both left and anterior section of the spinal canal. Due to the high suspicious of tuberculosis we started a therapy with isoniazid, rifampicin, pyrazinamide and ciprofloxacin, even if the results of culture was negative for any kind of bacteria. This case-report underlines the difficulties of a correct diagnosis in a common symptom as back pain is.

Keywords: Inflammatory Back Pain; Spinal Tuberculosis; Fibromyalgia

1. INTRODUCTION

Inflammatory back pain (IBP) is a frequent cause that leads to medical attention and is defined by clinical features as morning stiffness with more than 30 minutes' duration, improvement with exercise but not with rest, persistence for at least 3 months, age less than 50 years, etc. [1,2]. Although it is a typical presentation of the seronegative spondylarthropathies, its differential diagnosis included several diseases such as rheumatoid arthritis, fibromyalgia and infectious spondylitis.

Tuberculosis is one of the most common infectious diseases in the world and its incidence is increasing in the western countries since the early 1900s [3]. Extrapulmonary forms account for 10% - 40% of all cases of tuberculosis [4] and approximately 50% of cases of skeletal tuberculosis occur in the spine [5]. When it occurs the onset of the symptoms is insidious and some of the clinical findings may be fulfill IBP criteria. Moreover

any delay in the diagnosis increases the probability of functional sequelae [4,6].

2. CASE REPORT

A 56-year-old man was admitted to our department because of dull cervical pain which had worsened over the previous month. Pain was radiated to the bilateral shoulder regions and upper extremities, associated with paresthesias and stiffness for 3 - 4 hours after waking that improved with movement. He also reported intermittent fever. Routinary chest-X-ray showed calcified nodules in the median right lung field and in the perihilar region on the same side. No significant medical history except chronic cervical pain since years and hypertension treated by amlodipin. A cervical-x-ray revealed narrowing of the disc space between 5th cervical and 1st thoracic vertebral bodies.

The patient had been evaluated for cervical pain one month before and based on physical examination was suspected rheumatic polymyalgia. For this reason he started prednisolone 125 mg/day per os and follow-up. He did not attend the check-up fixed after 10 days.

On physical examination was noted cervical stiffness associated with slight hyposthenia of the left arm and right leg. Babinski's sign was absent bilaterally. Blood pressure was 150/80 mmHg and pulse rate was regular, 60 bpm. Routine laboratory assays reported in **Table 1** showed mild anemia and increased markers of inflammation as erythrocyte sedimentation rate (ESR), fibrinogen, alpha-1-acid glycoprotein and C-reactive protein (CRP). No monoclonal peak was detected in serum protein electrophoresis and Bence-Jones protein was absent. Two days after admission the patient presented worsening of clinical conditions with comparison of moderate motor deficit characterized by hypostenia of the left arm and right leg. Hypertonus associated with brisk deep tendinous reflexes were presented on the right leg. Babinski's sign was present on the right. Was performed a Computerized Tomography (CT) of the thorax which confirmed the calcified lung nodules on upper part of the inferior lob of the right lung. Further calcified nodules were revealed at the base of the left lung. Some lymph nodes located caudally to the carina of the trachea were

Table 1. Blood test screening upon admission.

		Reference value
WBC (10⁹/l)	6.57	4.30 - 10.00
Neu (%)	76.9	40.0 - 75.0
Lyn (%)	16.0	19.0 - 48.0
Mon (%)	6.2	1.0 - 10.0
Eos (%)	0.6	0 - 6.0
Bas (%)	0.3	0 - 1.5
RBC (10¹²/l)	3.86	4.40 - 6.00
Hb (g/dl)	11.2	14.0 - 18.0
Hct (%)	32.6	41.0 - 51.0
MCV (fl)	84	80 - 96
MCH (pg)	29.0	27.0 - 34.0
MCHC (g/dl)	34.3	32.0 - 36.0
PLT (10⁹/l)	324	140 - 440
C-reactive protein CRP (mg/l)	12.3	<5
ESR mm/h	80	<15
Fibrinogen (mg/dl)	445	200 - 400
Alfa1-glycoprotein (mg/dl)	146	30.0 - 135.0

slightly enlarged. Cervical magnetic resonance imaging (MRI) revealed evidence of spondylodiscytes involving C3, C4, and C5 vertebral bodies and the respective intervertebral disks. An epidural liquid area compatible with abscess occupied the left and anterior section of the spinal canal at the same level determining moderate posterior and right deviation of the spinal cord. A smaller abscess was present at the level of the intervertebral space D9-D10 without any compression on the spinal cord. Nothing was noticed from cerebral MRI. Percutaneous biopsy of the lesions located at the level C3-C4 was performed using CT guidance. The result of the culture was negative for *M. tuberculosis* or other bacteria. Due to the high suspicious of tuberculosis as soon as was obtained the MRI result therapy with isoniazid, rifampin, pyrazinamide and ciprofloxacin was started. MRI performed 10 days after therapy start revealed mild decrease of the abscess dimension. Patients was discharged one month after admission. Therapy was continued for 9 months and patients recovered completely from neurological deficits. No relapse of the infection after 2 years.

3. DISCUSSION

We considering this case report an interesting example of how high degree of suspicious is required in spinal tuberculosis diagnosis [6]. The patient had some troubles in his life and at work; he was depressed and he attributed all symptoms to stress. When he was evaluated for

the first time, symptoms partially fulfilled IBP criteria and polymyalgia was suspected, even if it is a diagnosis of exclusion [7]. Corticosteroids probably accelerated spread of infection and comparison of neurological deficits. Appearance of motor deficits led to perform rapidly further diagnostic exams of imaging that revealed vertebral abscess due to infection. The incidence of neurological deficits at the time of diagnosis in patients with spinal tuberculosis is reported to be 20% to 76% [4]: these data suggest that spinal tuberculosis is often not considered as responsible of IBP until comparison of neurological signs that are related to compression of spinal cord [8]. Fever, that is still considered an important sign of infection, it is reported being absent in almost two-third of cases [4], contributed to delay the correct diagnosis.

Moreover, laboratory data generally show mild anemia and the presence of a raised ESR and high levels of C-reactive protein [9] suggested that an inflammatory cause supported spinal pain. However, similar laboratory results are obtained also in patients with polymyalgia or other rheumatic disease. About imaging, radiography is rarely useful into detection of spinal tuberculosis but chest-X-ray could show lung calcifications related to former infection sustained by *M. Tuberculosis* and that could orientate physician to consider the possibility of a relapse of infection with extra pulmonary localization. Differently, both MRI and CT are usually determinant for diagnosis as happened in this case. In general, MRI is more sensitive in the early stages of the disease and CT allows better visualization of the spinal canal. Lastly, percutaneous biopsy, even if CT-guided, didn't isolate the pathogen. Colmenero *et al.* reported positive culture of the percutaneous bone biopsy in 48% of tuberculosis vertebral osteomyelitis [4].

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