An atypical spondylodiscitis: case report

Uma espondilodiscite atípica: relato de caso

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ABSTRACT

Spondylodiscitis is a rare pathology, however its incidence has been rising in recent years. Its signs and symptoms are nonspecific therefore the diagnosis may be delayed from 2 to 6 months. The main symptom is back or neck pain but some patients may experience no pain. The authors report the case of an 82 year old man with a presentation of initial cough, followed by monoarthritis, then polyarthritis and finally paraparesis, accompanied by fever and elevation of infection markers. The insidious evolution delayed the diagnosis of spondylodiscitis as well as its treatment. The identified pathogen was Streptococcus pneumoniae, a very rare cause of spondylodiscitis. After 6 weeks of antibiotics the patient was discharged. Spondylodiscitis diagnosis requires a high level of suspicion due to its wide range of clinical presentations and must be ruled out when we are faced with a fever of unknown origin or an inappropriate response to treatment.

Keywords: Discitis; Streptococcus pneumoniae; Arthritis, infectious; Case reports

RESUMO

A espondilodiscite é uma patologia rara, porém sua incidência tem vindo a aumentar nos últimos anos. Os seus sinais e sintomas não são específicos e, como tal, o diagnóstico pode ser atrasado de 2 a 6 meses. O principal sintoma é a dor nas costas ou no pescoço, mas alguns doentes podem não apresentar dor. Os autores relatam o caso de um homem de 82 anos, com uma apresentação inicial de tosse, seguida de monoartrite, depois poliartrite, e finalmente paraparésia, acompanhado de elevação dos parâmetros de infecção. A evolução insidiosa atrasou o diagnóstico de espondilodiscite, assim como o seu tratamento. O patogénio identificado foi *Streptococcus pneumoniae*, uma causa bastante rara de espondilodiscite. Após 6 semanas de antibioterapia o doente teve alta. A espondilodiscite é um diagnóstico que requer um alto nível de suspeição dada a ampla variedade de apresentações clínicas e deve ser excluída quando estamos perante um caso de febre de origem indeterminada ou uma resposta inadequada ao tratamento.

Descritores: Discite; Streptococcus pneumoniae; Artrite infecciosa; Relatos de caso

INTRODUCTION

Spondylodiscitis is a rare pathology though its incidence has been rising in recent years due to the enlarged susceptible population as well as improved diagnostic tools acuity and accessibility.[1-3]

Predisposing factors include age, diabetes, obesity, cardiovascular disease HIV, drug abuse, malnutrition, malignancy, chronic liver disease, chronic renal failure and septicemia.[4]

Spondylodiscitis is more frequent in males and appears to have two incidence peaks: age under 20 years old and between 50 and 70 years old.[1,2,5]

The infection may occur by direct external inoculation, local extension from contiguous tissues or hematogenous spread.[6] Pyogenic hematogenous spondylodiscitis affects more frequently the lumbar spine (58%), followed by thoracic (30%) and cervical (11%) vertebrae. [1,7]

The signs and symptoms of spondylodiscitis are nonspecific and therefore the diagnosis can be delayed from 2 to 6 months since the beginning of first symptoms, which affects negatively the outcome.[1-3,8] The main symptom is back or neck pain but up to 15 % of patients can be pain free. Fever is less common (48%).[1,2]

The diagnosis is set based on clinical, laboratorial and radiological findings and blood or tissue cultures can identify the causative agent and enable targeted antibiotic therapy.[2,3]

Specific IV antibiotics should be started after the recognition of the pathogen and identification of its resistances, with the exception of extremely ill patients in whom the treatment is urgent or if cultures are negative.[2-4] Immobilization is important to preserve the spine structure and stability. [3,4,7] Surgery can be indicated when there are progressive neurological deficits, spinal instability, non-controllable pain or conservative treatment failure.[3]

CASE REPORT

An 82 year old man with a history of hypertension, heart failure and atrial fibrillation, presented to the emergency

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department referring pain in the right ankle. He was diagnosed with arthritis and discharged with a prescription of a non-steroid anti-inflammatory drug. A week later he did not present any improvement and the intense pain had affected knees, ankles, wrists and both hand joints. He also started a fever.

When questioned, the patient referred productive cough 2 days before the symptoms of arthritis.

On examination the patient had a temperature of 37, 8ºC, arthritis signs on both knees, wrists and ankles and a heart murmur. He had no spinal tenderness or limited spine movements. The neurological examination was normal excepted for a mild paraparesis that could be considered normal in the age group and attributed to the joint pain which exacerbated with movements.

Laboratory testing showed white cell count of $10.2X10^3/\mu l$ ($4.0\text{-}10.0\ X10^3/\mu l$, haemoglobin 12,9g/dl (13,0-17,7g/dl), platelet count $116X10^3/\mu l$ ($150\text{-}500X10^3/\mu l$), erythrocyte sedimentation rate (ESR) 94mm/h (<10mm/h), C reactive protein (CRP) 295,7mg/l (<5,0mg/l), urea 33,2mmol/l (2,8-7,2mmol/l), creatinine 1,62mg/dl (0,67-1,18 mg/dl)

The chest x ray was normal and there was no evidence of endocarditis on both trans-thoracic and trans-esophageal cardiac ultrasound. Blood cultures revealed Streptococcus pneumoniae.

This case was interpreted as a reactive arthritis following tracheobronquitis and the patient was medicated with ceftriaxone 1g twice daily according to the causal agent sensitivities.

After the initial clinical and analytical improvement the patient status got worse with frequent febrile peaks, persistent and increasing pain on the affected joints and new elevation of CRP.

The paraparesis got worse given that the patient became unable to walk, so that it could no longer be associated with joint pain, and a dorsolumbar computed tomography (CT) was requested.

Not being diagnostic the CT supported the spondylodiscitis suspicion, and the diagnosis was confirmed through magnetic resonance imaging (MRI) (Figure 1). New blood cultures were negative as well as urine culture, viral markers, brucella serology and Kock bacillus.

Antibiotic treatment was adjusted to ceftriaxone in meningeal doses and meropenem, the affected column was immobilized and physiotherapy was initiated.

After 6 weeks of IV antibiotics the patient presented a favorable evolution with decreased CRP (11,9mg/l) and ESR (62mm/h), and the control MRI showed signs of improvement (Figure 2).

The patient was discharged to a continuing care unit where he continued receiving physiotherapy and after 4 months he was able to take short walks by himself.

DISCUSSION

Spondylodiscitis is a menacing disease which can lead to severe neurological deficits and even death. An early diagnosis and start of treatment are the key to improve outcomes, however due to its nonspecific signs and symptoms it very often goes unnoticed and its identification is delayed.

In this case it was especially difficult to identify the disease as the most frequent symptom – back pain – was absent. On the other hand the neurological deficit present – paraparesis - that could have pointed in the right direction was initially so mild that could be attributed to arthritis and age. The late diagnosis, which only occurred after the worsening of neurological deficits, could have determined a poor outcome.

Therefore it is accurate to state that that in most cases the diagnosis of spondylodiscitis requires a high level of suspicion and must be ruled out every time there is a fever of unknown

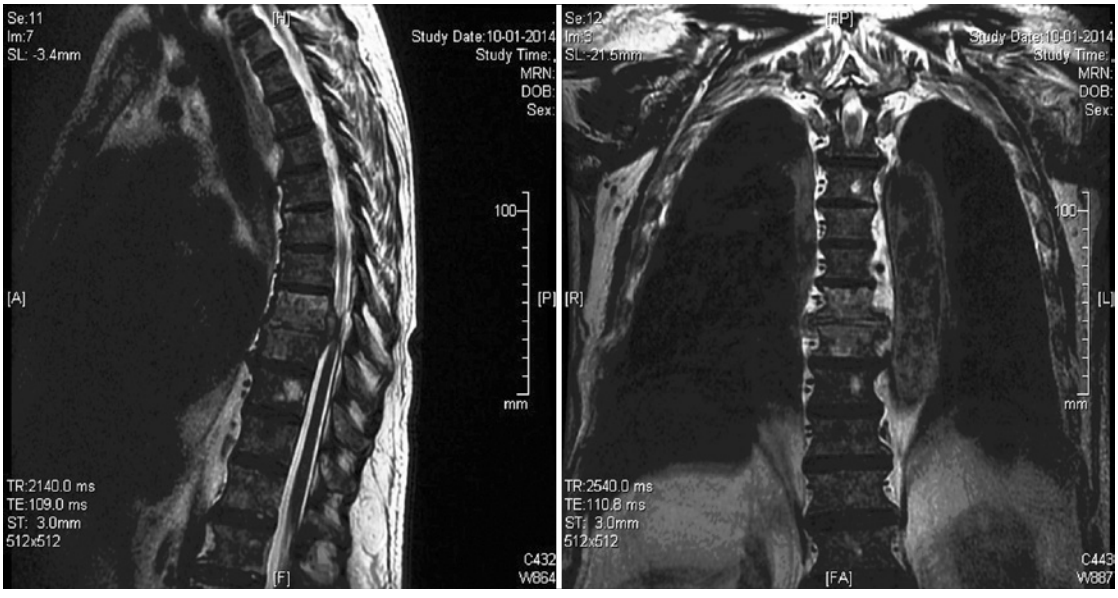

Figure 1. MRI presenting structural changes in the subchondral adjacent regions of D8-D9, with osteolytic and peri-vertebral inflammatory component, causing obliteration of the adjacent spinal subarachnoid space and molding the ventral medulla.

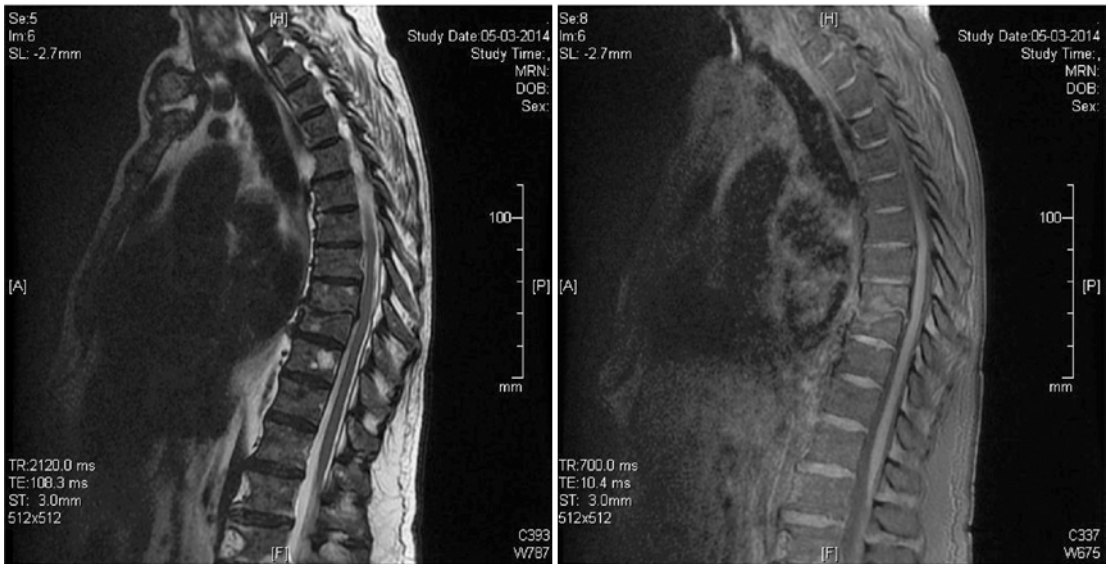

Figure 2. Control MRI with positive evolution, with a less expressive inflammatory process. Reduced dimensions of the anterior epidural component, still contacting the with the medulla, however with no clear compression.

origin with raised inflammatory markers or an inadequate response to antibiotic treatment.[8]

There are no standardized guidelines for antibiotic treatment and its duration[3,5] however most authors hold to the idea that antibiotics should be started after agent identification, except in critically ill patients.[4]

After identifying the spondylodiscitis the antibiotic therapy was enhanced accordingly to the initial blood cultures and ceftriaxone was adjusted to meningeal dose. Simultaneously an association with meropenem was taken as precaution as the late diagnosis and previous antibiotic therapy with sub optimal doses could have driven to a superinfection, a nosocomial infection and false negative cultures.

In view of the initial positive blood cultures it was decided not to perform a CT guided biopsy since this technique disadvantage is the usually low quality of tissue and it is successful in only about half of patients, so it should be carried out only in the cases that blood cultures are negative.[2,4,9]

Besides antibiotics there are 3 other treatment foundation: to immobilize the affected column and preserve the spine stability it is recommended; appropriate pain therapy and physiotherapy; and surgery if debridement and decompression of the spinal canal is needed.[3,4,7]

In the presented case, after neurosurgical evaluation, it was decided not to perform surgery and merely proceed to immobilization and motor rehabilitation.

Another unusual event was the identified pathogen. Streptococcus pneumoniae is a very rare cause of spondylodiscitis.[2,6,10] The airway is the main gateway and as the patient referred initial cough, followed by monoarthritis, then polyarthritis and finally paraparesis this was the likely route of infection.

In conclusion spondylodiscitis is a rare disease that requires a high suspicion index and that is still a diagnostic challenge in spite of the enhanced investigation tools, due to its wide range of clinical presentations.

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