CASE REPORT

Missing red flags in back pain—tuberculosis of the spine: an important differential for back pain in non-endemic countries

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SUMMARY

Chronic back pain is an extremely common complaint. All primary care physicians will be on the lookout for the 'red flags' that suggest serious pathology. The diagnosis of spinal infection with tuberculosis (TB) is uncommon and often not considered, especially in areas where the rate is very low such as the south west of England. We describe a patient presenting to the emergency department with severe pain, immobility and with a sensory deficit level. Unfortunately, given the favourable results for early medical treatment for spinal TB, this patient presented late and had a very poor outcome.

INVESTIGATIONS

Chest x-ray showed no lung field shadows but there was subtle angulation and loss of height at T6. An urgent MRI (figures 2 and 3) demonstrated a large destructive lesion encompassing the vertebral bodies of T6 and T7 and compressing the spinal cord. A CT guided biopsy of the lesion revealed an acid-fast bacillus by day 2. She was screened as HIV negative.

TREATMENT

With a conclusive diagnosis of spinal TB, 1 year programme of ethambutol, pyridoxine and rifampicin was started.

BACKGROUND

Frequently patients with spinal tuberculosis (TB) present several times to doctors before referral for investigation of spinal TB is made.¹ In the county of Devon this will more often be the case as it has one of the lowest rates of TB in the UK.² Delayed diagnosis is the characteristic of the disease³ as is misdiagnosis, and can result in complications including severe kyphosis and debilitating neurological compromise.⁴

This particular case demonstrates how use of a simple tool, such as the 'red flags' of chronic back pain,⁵ can help physicians pick up rare diagnoses earlier (figure 1).

CASE PRESENTATION

A 44-year-old female care home worker of Philippine origin, with a 3-month history of worsening thoracolumbar back pain, presented to the emergency department with fever and urinary disturbance. During the past months she had been virtually immobile owing to constant severe pain, prescribed maximal analgesia including neuropathic medication, and had become very concerned when she could not pass urine and noticed she could no longer sense temperature below the level of her umbilicus. On examination she had fever 38.4°C and was immobile because of pain. She had no spinal tenderness except minimal paraspinal spasm. The only consistent abnormal neurological finding was a sensory loss of temperature discrimination below the spinal level of the thoracic spinal nerve 10 (T10). She had a postmicturition urinary volume of 450 ml. There was good preservation of her motor function. TB was suspected when it was revealed that she had worked as a nurse in the Philippines prior to working in the UK.

OUTCOME AND FOLLOW-UP

The initial plan was for bed rest and medical management but unfortunately the spinal cord signs progressed and despite surgical decompression and fusion the patient developed paraplegia.

DISCUSSION

Back pain is very common, with estimated point prevalence of 20–30% in the general population.⁶ Back pain accounts for around 3% of emergency department visits.⁷

The vast majority of episodes of back pain are self-limiting and require no intervention.⁶ Infrequently back pain represents serious pathology including infection, malignancy or systemic inflammatory disease.^{8–9} One such rare aetiology is spinal TB, which is often not considered in non-endemic areas,¹ and especially not in areas like Devon, where this patient was presented.²

The incidence of TB is increasing worldwide¹⁰ including developed countries.¹¹ Skeletal disease constitutes the second most common extrapulmonary manifestation of the disease, and half of these cases involve the spine⁴ otherwise known as 'Pott's disease' (named after the surgeon Percival Pott in 1776¹²). It is important to note that thoracic pain is a common presentation of spinal TB as it most commonly affects the thoracic spine, followed by the lumbar spine.⁴

In the UK, TB is commonly encountered in ethnic groups originating from areas of high endemicity,^{1–13} in particular South Asia (55%) and sub-Saharan Africa (30%).¹¹ It is thought that the increased risk of developing TB for immigrants becomes that of the host population after 5 years¹⁴; however, evidence suggests that up to one-third of these new cases have been resident for more than 10 years.¹

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RED FLAGS IN CHRONIC BACK PAIN^{1*}

*with the relevant 'flags' highlighted for this case.

- Thoracic pain
- Fever and unexplained weight loss
- Bladder or bowel dysfunction
- History of carcinoma
- Ill health or presence of other medical illness
- Progressive neurological deficit
- Disturbed gait, saddle anaesthesia
- Age of onset <20 years or >55 years

Figure 1 Red flags in chronic back pain.¹

TB in general is curable. The current mainstay of the treatment is chemotherapy (ie, isoniazid, rifampicin and pyrazinamide for at least 6 months). Indications for surgery (debridement, laminectomy and fusion) include failure of medical treatment, paraspinal abscesses, spinal instability, neurological deficit, as demonstrated in this case, and kyphosis of >30°.¹⁵

Learning points

- Consider the 'red flags' for every patient with chronic back pain.
- The incidence of tuberculosis (TB) is rising in the UK even in the areas such as Devon.
- Spinal TB is characteristically diagnosed late but that does not mean it has to be.
- Early detection of spinal TB could prevent permanent disability and deformity.

Figure 2 MRI of the sagittal view demonstrating the destructive lesion at T6 and T7.

Figure 3 MRI of the transverse view demonstrating destruction and swelling around the vertebral body.

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