Infective lumbar discitis in a sickler - An occult 'typhoid' spine?

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Summary

Pyogenic infection of the intervertebral disc (discitis) is a rare infection and the diagnosis often depends on a high index of suspicion. The cases of infective discitis described in the modern literature are similar to, if not identical with what was described as 'typhoid spine'. Salmoella infection of the musculoskeletal system on the other hand is more common in patients with sickle cell anaemia. This case report highlights the bizarre presentation of infective lumbar discitis in a sickler (HbSS) and calls attention to the need for a thorough evaluation of low back pain in these patients.

Key words: *Sickler, Discitis, Scotch cast lumbar jacket*

Résumé

L'infection Pyogénique du disque intervertebral (discitos) est une infection rare et le diagnostic le plus souvent depend de l'indice très élevé de la soupçon. Les cas du discitis infectieux décrit dans la litérature moderne sont pareils aux, si non identiques avec ce que l'on avait décrit comme la spine typhoide. L'infection Salmonellose du système musculosketal d'autre part et plus fréquente chez des malades atteins de la drépanocitose.

Ce rapport d'un cas souligne la présentation bizarre du lumbar disctis infectif chez un maladif (HbSS), également il attire l'attention sur le besoin d'une évaluation approfondie de la doubleur dans la rein basse chez ces patients.

Introduction

The intervertebral disc which forms approximately one quarter of the entire length of the movable part of the spinal column[1] is not a passive vestigial remnant but an active structure which hass been likened to a rudimentary diathroidal joint possessing a cavity filled with villi and surrounded by a fibrocartilaginous capsule.[2] It (the intervertebral disc) is generally regarded as an avascular tissue, but Ross Smith in 1931[2] demonstrated the presence of nutritive or vascular channels in the intervertebral discs of cadavers. He showed that these channels emanate from the marrow of the vertebral bodies, pierce the cartilaginous plates and run between the fibres of the annulus. This finding has been confirmed by Coventry et al[1] who have demonstrated blood cells in these vascular channels which was found in the lumina of the discs. Furthermore, they (Coventry et al) have shown that these vascular channels were only found in the intervertebral discs harvested from cadavers of patients that were in the first three decades of life.

The presence of blood vessels in the intervertebral discs therefore makes it imperative that bacteria can spread via haematogenous route and be lodged in the discs giving rise to infection and subsequent destruction of the disc by exotoxins released by the offending bacteria.[3] This type of pyogenic infective discitis is tagged primary whereas the secondary variety can occur following discectomies.[4]

This case report of infective lumbar discitis in a sickler demonstrates the bizzarre presentation of this disease entity and physicians involved in the management of patientss with sickle cell anaemia may want to evaluate acute low back pain in these patients further with the risk of an infective discitis in view.

Case study

AB was a 20-year old female university undergraduate, a

Fig. 1a *A plain radiograph of the lumbosacral spine (AP view) showing ballooning of the L3/L4 and L4/L5 disc spaces.*

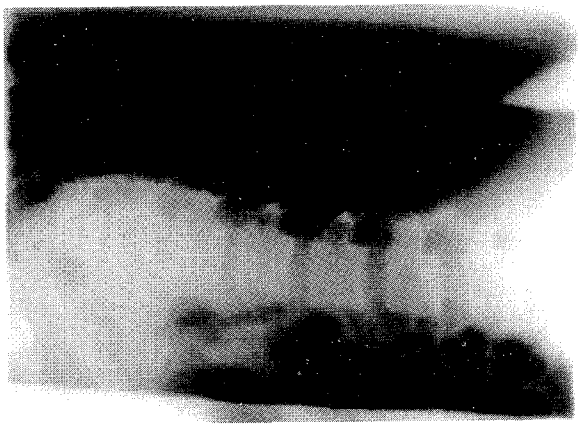

Fig. 1b *A plain radiograph of the lumbosacral spine (Lateral view) showing ballooning of the L3/L4 and L4/L5 disc spaces.*

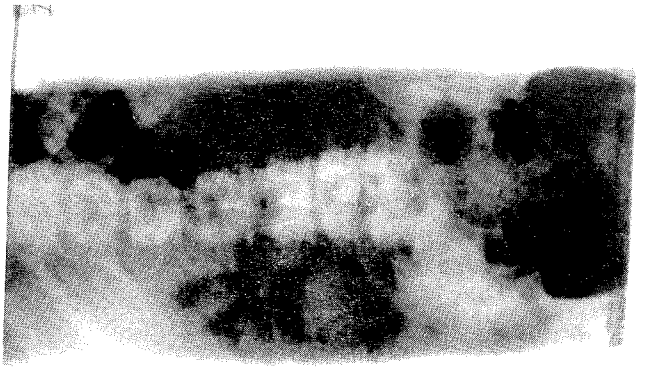

Fig. 2a *A repeat radiograph of the lumbosacral spine (AP view) 2 weeks after discharge shows bony union of the L3/L4 and L4/L5 vertebrae.*

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Fig. 2b ***A repeat radiograph of the lumbosacral spine (Lateral view) 2 weeks after discharge shows bony union of the L3/L4 and L4/L5 vertebrae.***

known sickler (HbSS), who presented to the surgical outpatient clinic of the University College Hospital (UCH), Ibadan with a one-week history of right hip pain in 1999. There was no associated fever and there was no remarkable pain on weight bearing but she was more comfortable with the right hip held flexed and she was therefore unable to maintain an erect posture. Clinical evaluation revealed a good range of right hip movements excepts for a slight reduction of abduction. An impression of incipent avascular necrosis of the right femoral head was made. However, the plain radiograph of the hip revealed no bony abnormality. She was commenced on bed rest, analgesics, antibiotics and non-weight bearing crutches. The erythrocyte sedimentation rate (ESR) was 130mm/hour (Westergreen) but there was no leucocytosis. However, after 48 hours of observation, the right hip pain became localized anteriorly and she had associated low back pain which was worse no abducting the right hip. Aspiration of the right hip yielded 2ml of synovial fluid which was negative on gram staining and grew no organism on subsequent culturing. The low back was relieved by traction but after one week on admission, she developed fever which did not respond to anti-malaria (since she was already on antibiotics). She was re-evaluated and found to have marked tenderness over the mid-lumbar region and a plain radiograph of the lumbosacral spine revealed slight ballooning of the L3/L4 as well as the L4/L5 disc spaces (Figures 1a and 1b). A clinical impression of a pyogenic infective lumbar discitis (at two levels) was made. She was commenced on parenteral metronidazole and ceftriaxone for 5 days (to cover for gram negative, gram positive and anaerobic organisms) and thereafter oral pefloxacin and erythromycin for 6 weeks. She made remarkable improvement and was immobilized in a removable scotch cast lumbar jacket after 2 weeks of commencing antibiotics and was discharged after 8 weeks of admission.

A repeat radiograph of the lumbo-sacral spine at the out-patient department 2 weeks after discharge revealed bony union of the vertebrae at L3/L4 and L4/L5 (Figures 2a and 2b). The scotch cast lumbar jacket was exchanged for a lumbar corset at this visit and the corset was worn for a further 6 weeks. She has now been followed up for over 33 months without any recurrence of back pain and she now ambulates with an almost normal gait.

Discussion

In the American and English literatures, most orthopaedic surgeons do not accept the fact that a distinct infection of the intervertebral discs occurs without first involving the vertebra bodies and these literatures often report all such cases (i.e. osteomyelitis of the vertebral body and infective discitis) as osteomyelitis of the vertebrae bodies.[3,5] However, plain radiographs of the early stages of infective discitis is often characterised by diminished transparency of the affected intervertebral discs, and sometimes narrowing of the disc space due to initial thickening but with sparring of the vertebra bodies at this stage.[2,3] Erosion of the adjoining vertebra plates is only present in the later stage (Stage III) of the disease (Figures 2a and 2b) and approximately 50% of cases of infective discitis do not progress beyond this stage.[3]

Pyogenic infective discitis has unusual presentations one of which is spasm of the lumbar or ilio-psoas muscles without any neurologic deficits. Ghormely et al in 1940,[5] reviewed 20 cases at the Mayo clinic and observed that a pre-existing infection is often if not always necessary and they reckon that infective discitis is a metastatic infection.

Salmonella infection is also common in patients with sickle cell anaemia[6] and infective discitis as described in recent literature is almost if not exactly identical with the previously described typhoid spine[7,8] and it is possible that this patient may have had salmonella infection of the two discs on the basis of the clinical presentation and her genotype.

The absence of fever in the early stages of the disease in this patient is not unusual[4] and although *staphyloccus aureus* is the microorganism commonly isolated from biopsies (and blood cultures), we do not have an image intensifier that would have enabled us take a biopsy of these infected discs. Radical debridement (under antibiotic cover) is usually advocated in the management of these patients,[4] however, in the prevailing circumstance in our environment, conservative management was carried out with satisfactory result.

The University College Hospital, Ibadan, has a reputable day care unit that caters for haematological emergencies. Although anaemia is the most common emergency seen in this unit, patients with sickle cell anaemia presenting with back pain may not be fully investigated and this case highlights the need to have a high index of suspicion in sicklers who present with acute low back pain.

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