

## Case Report

# Vertebral Osteomyelitis in a young immunocompetent adult: A case report

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## Abstract

Vertebral osteomyelitis is a rare entity and primarily found in adult over 50 years with male predominance. We report a case of 19-year immunocompetent girl with the history of fever and lower back pain and spinal tenderness found to have vertebral osteomyelitis and started on antibiotics and rapid improvement was noted. It's essential to suspect the possibility of vertebral osteomyelitis in young age group who are presenting with the pathognomonic signs and symptoms.

## Key words

Vertebral osteomyelitis, immunocompetent, young adult.

## Introduction

The lower back pain is an uncommon presentation for young adults, the majority includes mechanical musculoskeletal type and a minor percentage will be pathological (1). Vertebral osteomyelitis accounts only 3-5% of all osteomyelitis and often present with non-specific clinical presentation and thus delayed diagnosis is not uncommon (2). This case is to demonstrate that a vertebral osteomyelitis can affect the lumbar vertebrae and can present with chronic lower back pain in an otherwise healthy young adult.

## Case report

A 19-year-old girl was admitted following intermittent fever with chills and associated significant lower back pain for one-and-a-half-month duration. There were no obvious foci of infection and examination was unremarkable except lower spinal tenderness and positive SLRT. Initial

basic investigations revealed high inflammatory markers, ESR of 120 with CRP of 66 and neutrophil leukocytosis in FBC. Chest x-ray, urine analysis, liver function and renal function were normal. Blood culture was positive for staphylococcus aureus (MRSA) which was sensitive to clindamycin and vancomycin. Her x-ray lumbosacral spine revealed a focal lesion in L4 vertebrae. MRI spine revealed Infective spondylitis & Discitis with para spinal infection and small abscess mainly extending to left psoas muscle. (Figure 1) Clinical diagnosis of vertebral osteomyelitis was made and commenced on sensitive antibiotics. Initial two weeks of intravenous antibiotics followed by oral antibiotics for a period of four weeks was given and remarkable recovery was noted. Retroviral screening and immunoglobulin levels were tested to exclude the immunosuppressive state.

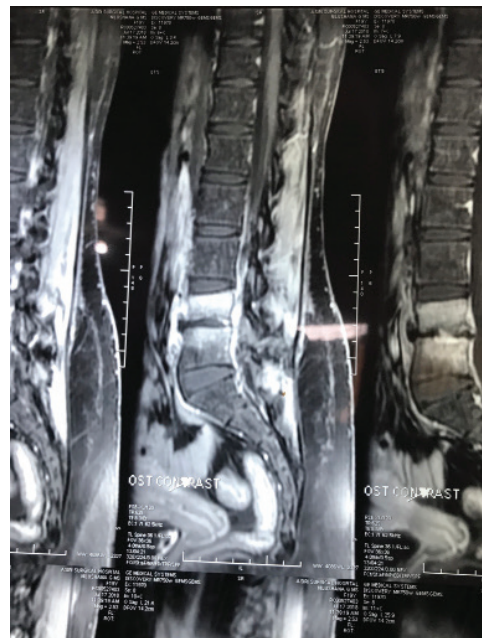



Figure 1 Infective spondylitis & Discitis in L4 vertebrae

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## Discussion

Vertebral osteomyelitis often occurs as a result of haematogenous seeding from distant focus (3). Even though the most common affected age group is more than 50 years of age with an immunocompromised status, still it can affect young immunocompetent adults. As like in many cases primary site of infection cannot be identified in this case as well. More than 90% of infections are due to staphylococcus aureus (4). Lower back pain with spinal tenderness are the pathognomonic combination of symptoms which are noted in this case but there were no focal neurological features. Symptoms vary with location of infection, e.g. cervical involvement may present with dysphagia; thoracic involvement may manifest autonomic dysregulation. The diagnostic modalities involve imaging and CT guided biopsy of affected area (5).

Due to lack of facilities it was decided to treat without the biopsy confirmation. MRI is the most sensitive technique and the findings would be decreased signal intensity in vertebral bodies and disc and loss of end plate definition and contrast enhancement in vertebral body and disc but the definitive diagnosis can only be made following positive culture obtained from CT-guided biopsy. Usually parenteral treatment is given. Oral therapy after 2 weeks of intravenous antibiotic can be considered in patients with uncomplicated infection / no significant comorbidity and favorable clinical response to initial parenteral therapy.

## Conclusion

It is evident that in young patients with back pain and elevated inflammatory markers, irrespective of

their immune status, vertebral osteomyelitis should be considered as a differential diagnosis. Treatment can be started if the radiological and blood culture evidence are suggestive of the diagnosis of vertebral osteomyelitis even though the biopsy is the gold standard investigation.

## Reference

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