



BMH Med. J. 2019;6(4):131-134. **Case Report**

Non-Tuberculous Mycobacterial Spondylodiscitis In A Post Discectomy Immunocompetent Patient - A Case Report And Review Of Literature

Suresh S Pillai, Harisankar M

Division Of Spine Surgery - Dept. Of Orthopedics, Baby Memorial Hospital Calicut, Kerala, India

Address for Correspondence: Dr. Suresh S Pillai, MBBS, D. Ortho, MS (Ortho), DNB (Ortho), MNAMS, Spine Fellow (Chang-Gung University, Taiwan), AO Spine Fellow (Nottingham, UK), MCh (Ortho), Consultant Spine Surgeon, Baby Memorial Hospital, Kozhikode, Kerala, India. PIN: 673004. E- mail: sureshorth@googlemail.com

Abstract

Infection with atypical mycobacteria are predominantly seen in immunocompromised patients. In the absence of evidence of person to person transmission it was proposed that humans were infected from environmental sources via aerosols and contaminated water. Middle aged male with intractable pain around lower thoracic area of the body and both lower limbs. On evaluation, he was found to have extensive spondylodiscitis involving whole of lumbar spine and most of thoracic spine. The patient underwent a transpedicular biopsy of L1 and surrounding soft tissues. Drain fluid culture was done which revealed growth of atypical mycobacterium sensitive to Kanamycin. He was given antitubercular therapy and Kanamycin injection. Patient improved clinically and is walking without support now.

There is no similar case of atypical mycobacterial infection resulting in spondylodiscitis of the entire lumbar spine and lower half of the thoracic spine reported in the literature to the best of our knowledge.

Keywords: Non-Tuberculous Mycobacterial Spondylodiscitis, Immunocompetent Patient

Introduction

Non-tuberculous mycobacteria include those mycobacteria other than mycobacterium tuberculosis complex. Infection with atypical mycobacteria are predominantly seen in immunocompromised patients. In the absence of evidence of person to person transmission, it was proposed that humans were infected from environmental sources via aerosols [1]. 25-50% of patients with AIDS in United States are infected with non-tuberculous bacteria [2]. Wound infection due to atypical mycobacteria from probably contaminated water is rare [3]. Some of these atypical organisms withstand high temperatures up to 45 degrees centigrade [4]. The contamination includes water sources for chilled surgical solutions [5], sterilization equipment, and particularly hot water in hospitals. M. avium complex organism have been isolated from drinking water distribution systems in the United States

and the rest of the world [6]. Resistance to commonly used antimicrobial drugs have been reported in *M. avium* complex as well as other non-tuberculous mycobacteria [7].

Case Report

Middle age person without any comorbidities presented to us with intractable pain around lower thoracic area of the body and both lower limbs. He was brought on a trolley being unable to sit up and walk. His sleep was totally disturbed due to intractable pain at night.

The patient had underwent microdiscectomy L4-L5 & L5-S1 at another center one year back. MRI picture before the index surgery is shown in **Figure 1**. He developed pain five days after the index surgery, which was not relieved with analgesics. So, he underwent exploration again and a second re-exploration one week later at a different center. The culture and biopsy from both the centers yielded nothing. He was given Linezolid, Vancomycin, & Cephalosporins from those centers, but he had no relief.

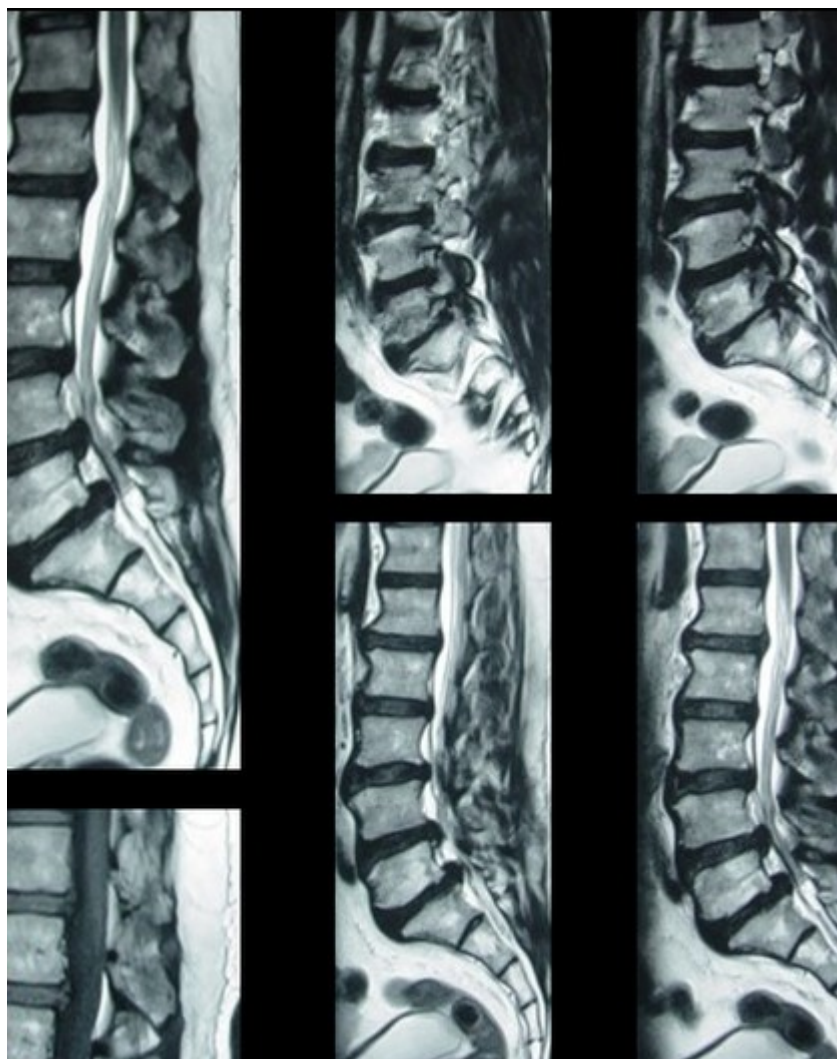


Figure 1: MRI picture before the index surgery

On examination, the patient had hyperesthesia over the lower half of the body and both lower limbs. He had weakness of Extensor Hallucis Longus & Extensor Digitorum Longus bilaterally. His bowel & bladder functions were normal. His ESR was elevated (110 mm/first hour).

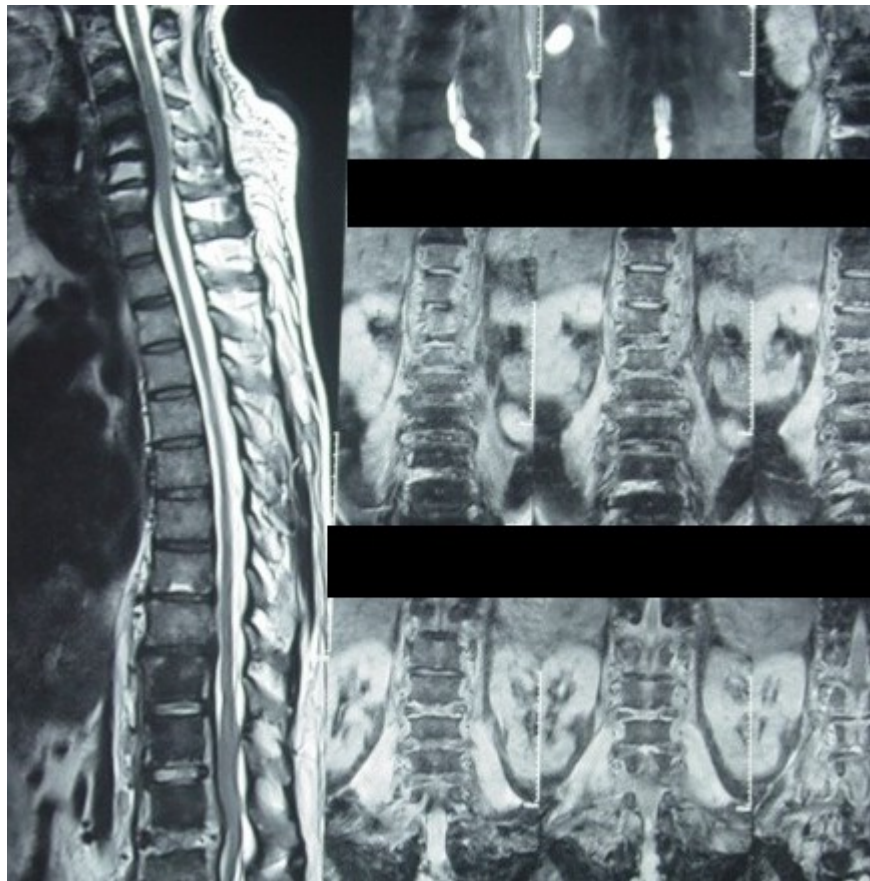


Figure 2: MRI showing extensive spondylodiscitis at presentation to our hospital

MRI showed evidence of spondylodiscitis spanning from D8 down to sacrum involving all the intervening vertebrae (**Figure 2**). There was soft tissue collection in the epidural space.

The patient was evaluated and planned for a biopsy & culture. The patient underwent a transpedicular biopsy from L1, soft tissues from paraspinal area, tissue from the epidural space were taken for culture and biopsy in our hospital. Disc from D12-L1 space and the removed piece of hemi lamina were also sent for biopsy. First post-operative day suction drain fluid from wound was also sent for culture and sensitivity.

Histopathology reports were suggestive of acute on chronic inflammation with plasma cells and lymphocyte infiltration. No evidence of caseation or granuloma was seen. Drain fluid culture detected atypical mycobacteria. Then the patient was started on anti-tuberculous therapy. He was put on INH, rifampicin, ethambutol, and pyrazinamide, but the patient developed hepatitis and gastritis making it impossible to continue these medicines. Gastroenterology consultation was done, following which ATT was completely stopped and then restarted in smaller doses. The patient was not relieved of his symptoms. By two months culture and drug sensitivity reports showed the bacteria to be sensitive to Kanamycin. The patient was put on an additional Kanamycin injection after consultation with the pulmonologist. He gradually improved clinically and radiologically. He started walking again by one year of therapy. At present he is independently ambulant and does his routine activities pain free.

Discussion

This case report is an eye opener to all the surgeons, and a reminder that when the routine culture and histopathology examination are reported repeatedly negative, one should suspect and look for atypical mycobacterial infections. Atypical mycobacterial infection is more common in the

immunocompromised patients [8], but here this patient did not have any evidence of any immunodeficiency. So, the possibility of aerosol or water contamination should be thought of. There is no similar case report in the literature to the best of our knowledge. Here the infection occurred at a previous surgical site and it has spread extensively in the entire lumbar spine and most part of the thoracic spine. Drain fluid culture is a good option in such cases, when histopathology and routine cultures are reported negative.

Conclusion

There is no similar case of atypical mycobacterial infection resulting in spondylodiscitis of the entire lumbar spine and lower half of the thoracic spine reported in the literature to the best of my knowledge. In an immunocompetent patient when routine histopathology and cultures are negative, drain fluid culture is an option for identifying the causative organism.

References

1. Falkinham JO 3rd. Epidemiology of infection by nontuberculous mycobacteria. *Clin Microbiol Rev.* 1996 Apr;9(2):177-215.
2. Zimba FA. Mycobacterium Smegmatis Infection of a Lumbar Spine Instrumented Fusion. *Am J Infect Dis.* 2011. 7(1):24-27.
3. Goodhart GL. Mycobacterium fortuitum osteomyelitis following trauma. *J Orthop Trauma* 1993; 7:142-5.
4. Minkin BI, Mills CL, Bullock DW, Burke FD. Mycobacterium kansasii osteomyelitis of the scaphoid. *J Hand Surg Am.* 1987 Nov;12(6):1092-4.
5. Prosser AJ. Spinal infection with Mycobacterium xenopi. *Tubercle* 1986; 67:229–32.
6. Pruitt TC, Hughes LO, Blasler RD, McCarthy RE, Glasier CM, Roloson GJ. Atypical mycobacterial vertebral osteomyelitis in a steroid-dependent adolescent: a case report. *Spine* 1993; 18:2553-5.
7. Luque AE, Kaminski D, Reichman R, Hardy D. Mycobacterium szulgai osteomyelitis in an AIDS patient. *Scand J Infect Dis* 1998; 30:88-91.
8. Petitjean G, Fluckiger U, Schären S, Laifer G. Vertebral osteomyelitis caused by non-tuberculous mycobacteria. *Clin Microbiol Infect.* 2004 Nov;10(11):951-3.