

MUCORMYCOTIC VERTEBRAL OSTEOMYELITIS IN A NON IMMUNOCOMPROMISED PATIENT- A RARE CASE REPORT

Mohammad Haroon*¹ and Yashmin Nisha²

¹Govind Ballabh Pant Institute of Postgraduate Medical Education & Research

²Rajiv Gandhi Cancer Institute & Research Centre, New Delhi

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ABSTRACT

Mucormycotic infestations of humans are opportunistic infections and are rare but life threatening conditions. They are caused due to fungi of class Zygomycosis of order Mucorales comprising of Mucor, Rhizopus, Absidia and Mortierella. Most commonly reported sites are pulmonary, rhinocerebral and skin. Musculoskeletal system particularly spine is least frequently involved site and only few cases have been reported in English literature. Most commonly it occurs in immunocompromised states like diabetes, corticosteroids use, organ transplantation, burns, malignant hematologic disorders and neonatal prematurity. We herein report a case of Mucormycotic vertebral osteomyelitis of lumbar region in a patient with no known predisposing condition.

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INTRODUCTION

Mucormycotic fungal infections are rare and are usually seen in immunocompromised individuals. It usually involves skin, lungs and CNS. Musculoskeletal involvement is rare and vertebral mucormycosis is even more uncommon. We here in present a case of non immunocompromised patient with no previous history of surgery or any form of intervention, diagnosed as mucormycotic vertebral osteomyelitis.

Case Report: A 50 year old normotensive, nondiabetic male patient presented to our hospital with history of on and off fever and lower backache since 3 weeks with development of numbness and swelling of bilateral lower limbs in last 1 week. Since 3 days patient was complaining of weakness of bilateral lower limbs, constipation with extremely poor general condition. There was no known previous condition or disease leading to immunocompromise. Routine examinations revealed neutrophilia with raised ESR and C reactive proteins, tumor markers like CEA and CA 19-9 were negative, Renal function test / Liver function test / blood glucose / Serum calcium were within normal range. The patient underwent MRI of lower spine, which demonstrated altered marrow signal intensity of 5th lumbar vertebral body with heterogeneous post contrast enhancement and small epidural soft tissue component. Irregular thickening and clumping of nerve roots suggesting arachnoiditis was also seen. A CT guided vertebral bone biopsy under sedation was done, histopathological analysis of the specimen showed

sequestrum and involucrum with necrotic marrow spaces showing periodic acid-Schiff (PAS) and Grocott-Gomori's methenamine silver stain (GMS) positive broad aseptate fungal hyphae consistent with the diagnosis of mucormycosis.

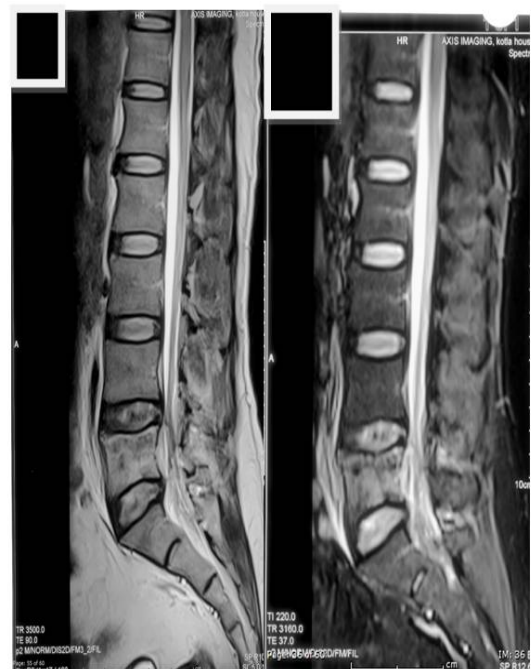


Figure 1 MR T2W and STIR sagittal images showing altered marrow signal intensity of L5 vertebral body with clumping of cauda equina nerve roots and inflammatory changes in paravertebral soft tissue.

*Corresponding author: Mohammad Haroon

Govind Ballabh Pant Institute of Postgraduate Medical Education & Research

Subsequently the patient was managed with intravenous Amphoterecin B. On 3rd day post admission, patient had sudden onset of breathlessness, hypotension, abdominal pain and fresh bleeding per rectum. Despite aggressive supportive medical management with antibiotics, blood and blood products, inotropic support his condition further deteriorated and patient succumbed to his illness.

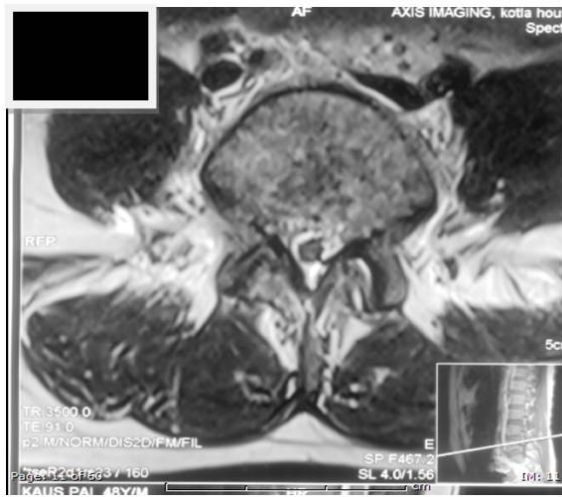


Figure 2a and 2b (a) MRT2W axial image showing heterogeneous marrow with small epidural soft tissue component and clumped nerve roots. (b) CT guided bone biopsy from L5 vertebral body.

DISCUSSION

Mucormycosis is the most serious and potentially lethal, life threatening opportunistic fungal infection in humans. It is caused by a group of fungi belonging to class Zygomycosis and order mucorales and comprise of Mucor, Rhizopus, Absidia and Mortierella [1]. These are aerobic fungi but can grow in microaerophilic and anaerobic conditions. Mucorales are known for their angioinvasive properties causing vessel thrombosis, thereby poor penetration of antifungal drugs [2]. Most commonly mucormycosis occurs in immunocompromised patients and predisposing conditions like diabetes, corticosteroids use, organ transplantation, burns, end stage renal disease, malignant hematologic disorders, AIDS, intravenous drug abusers, malnourishment, trauma and neonatal prematurity [3-5]. Most common sites of involvement include Rhinocerebral (most common), cutaneous, pulmonary and gastrointestinal system [6]. Vertebral osteomyelitis due to mucormycosis is very rare and only 5 cases have been reported in English literature so far as

per authors knowledge. Buruma *et al.* reported a case of vertebral osteomyelitis due to mucormycosis in a post surgery and radiotherapy case of carcinoma larynx [7].

Von Pohle reported a case of a middle aged diabetic patient who developed mucormycotic vertebral osteomyelitis as a sequale to extension of the pre existing pulmonary lesions. The patient presented with ascending paralysis with rapid clinical deterioration, multiorgan dysfunction and finally death [8].

Chen *et al.* reported a case of non immunocompromised 57 year old female who developed mucormycotic vertebral osteomyelitis and spondylodiscitis after lumbar puncture and radio frequency nucleoplasty. The infection was controlled after several surgical debridements along with local and systemic Amphoterecin B therapy. However neurological improvement could not be achieved in this patient [9].

Shailesh Hadgaonkar *et al.* reported a case of a diabetic, hypertensive 67 year old male with chronic renal disease on haemodialysis who developed lumbar vertebral osteomyelitis with spondylodiscitis caused by mucormycosis. The patient was managed conservatively with Lipid formulation amphotericin B and bi weekly hemodialysis, however there was rapid deterioration of general condition and he landed in septic shock requiring vasopressors. Finally patient died of multi system organ failure [10].

Ankur Mandelia *et al.* reported a case of a neonate with esophageal atresia (EA) who developed acute onset paraplegia resulting from vertebral osteomyelitis and epidural abscess due to mucormycosis [11].

We herein present a case of mucormycotic osteomyelitis of 5th lumbar vertebra in a 50 year old normotensive, nondiabetic male patient with no known predisposing conditions. Only one such case have been reported so far by Chen *et al.* where the patient was not immunocompromised and proposed to contact infection after lumbar puncture. This case is unique as in our case no such attributable factor was present. Till date no such case of vertebral mucormycotic osteomyelitis has been reported in English literature

The purpose of our case report is to familiarize the radiologists with this extremely rare clinical entity. Mucormycotic vertebral osteomyelitis should also be considered as a differential in non immunocompromised patients, so that prompt diagnosis can be made and treatment is not unnecessarily delayed.

References

1. Lehrer RL, Howard DH, Sypherd PS (1980) Mucormycosis. *Ann Intern Med* 93(1):93-108
2. Spellberg B, Ibrahim AS. Recent advances in the treatment of mucormycosis. *Curr Infect Dis Rep.* 2010 Nov; 12(6):423-9.
3. Cocanour CS, Miller-Crotchett P, Reed RL, Johnson PC, Fischer RP (1992) Mucormycosis in trauma patients. *J Trauma* 32(1):12-15.
4. Boelaert JR (1994) Mucormycosis (zygomycosis): is there news for the clinician? *J Infect* 28(Suppl 1):1-6
5. Ingram CW, Sennesh J, Cooper JN, Perfect JR (1989) Disseminated zygomycosis: report of four cases and review. *Rev Infect Dis* 11(5):741-754

6. Goodman NL, Rinaldi MG. Agents of mucormycosis. In: Balows A, Hausler WJ, Herrmann KL, Isenberg HD, Shadomy HJ, eds. Manual of clinical microbiology. 5th ed. Washington, DC: ASM Press, 1991:674-92.
7. Buruma OJ, Craane H, Kunst MW (1979) Vertebral osteomyelitis and epidural abscess due to mucormycosis, a case report. *Clin Neurol Neurosurg* 81(1):39-44
8. Von Pohle WR. Disseminated mucormycosis presenting with lower extremity weakness. *Eur Respir J* 1996; 9:1751-3.
9. Chen F, Lü G, Kang Y, Ma Z, Lu C, Wang B, et al. Mucormycosis spondylodiscitis after lumbar disc puncture. *Eur Spine J* 2006; 15:370-6.
10. Hadgaonkar S, Shah K, Bhojraj S, Nene A, Shyam A *et al.* Isolated Mucormycotic Spondylodiscitis of Lumbar Spine A Rare Case Report. *J Orthop Case Rep.* 2015 Apr-Jun; 5(2):55-7. doi: 10.13107/jocr.2250-0685.275.
11. Mandelia A, Garg R, Agarwala S, Kale SS. Vertebral osteomyelitis and epidural abscess due to mucormycosis in a neonate with esophageal Atresia. *J Clin Neonatol* 2015; 4; 271-4.

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