Spinal Mucormycosis

Kunal Shah, Abhay Nene
Department of Spine, Wockhardt Hospitals, Mumbai Central, Maharashtra, India

Abstract

Spinal mucormycosis is a rare and fatal condition. High degree of suspicion is required for early diagnosis and treatment.

Keywords: Mucormycosis, mortality, spinal

We report a case of a 54-year-old male who presented to us with progressive mechanical low back pain and right lower limb radiation since 3 weeks. There was rest pain and no constitutional symptoms. He was a known case of cryptogenic liver cirrhosis with portal hypertension and pancytopenia (hemoglobin, 8 g/dL; total leukocyte count, 3500/μL [neutrophils - 450/μL]; and platelet count, 90,000/μL). On examination, there was no neurodeficit, and spinal movements were painful.

Magnetic resonance imaging (MRI) (plain and contrast) was done as shown in Figures 1 and 2. Diagnosis of infective spondylodiscitis was made with the following possibilities: (1) tuberculosis (TB), (2) pyogenic vertebral osteomyelitis, (3) fungal infection, for example, aspergillosis, cryptococcal infection, and mucormycosis, and (4) unusual infection, for example, salmonella spondylitis and brucellosis. Radiological features in our case showed hyperintense T2 image and hypointense T1 image on plain MRI. Contrast MRI shows no disc enhancement with hyperintense signals in body. These findings are consistent with similar cases reported in literature.[1,2] Although the disc space is preserved in TB in early stages, it is associated with gross vertebral body destruction and large abscess collection with disc space destruction in later stages. Clinically, TB has more indolent course.[3] Pyogenic spondylodiscitis has aggressive course and characterized by disc space destruction along with adjacent body and no skip lesions.[4] The hallmark of mucormycosis infection is angioinvasion and gross destruction of localized tissues. It has very aggressive course of progression and commonly seen with immunocompromised patients. Spinal involvement shows disc space sparing with localized abscess and vertebral body destruction.[1,2]

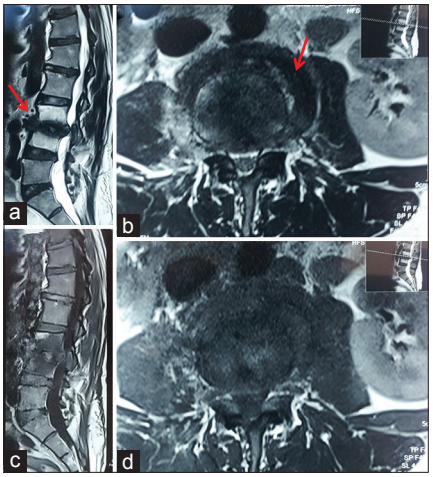

Figure 1: Plain magnetic resonance imaging. (a) T2-weighted sagittal image showing hyperintense signal in L3 and L4 vertebra bodies with paradiscal erosions (arrow shown). (b) T2-weighted axial image with anterior soft tissue collection seen (arrow shown). (c) T1-weighted sagittal image showing hypointense signals from L3 and L4 vertebral bodies. (d) T1-weighted axial image with anterior soft tissue collection

Computed tomography-guided biopsy was done to confirm the diagnosis. Histopathology report suggested mucormycosis. The primary aims of the treatment are early diagnosis, reversing of the risk factors, debridement of lesion, and instituting appropriate antifungals. Amphotericin B is the drug

Address for correspondence: Dr. Kunal Shah, 'We Are Spine' centre.Aarav polyclinic, 101-Excel Arcade, Opposite Telephone exchange, Ghatkopar West, Mumbai - 400 086, Maharastra, India. E-mail: orthokunal@yahoo.com

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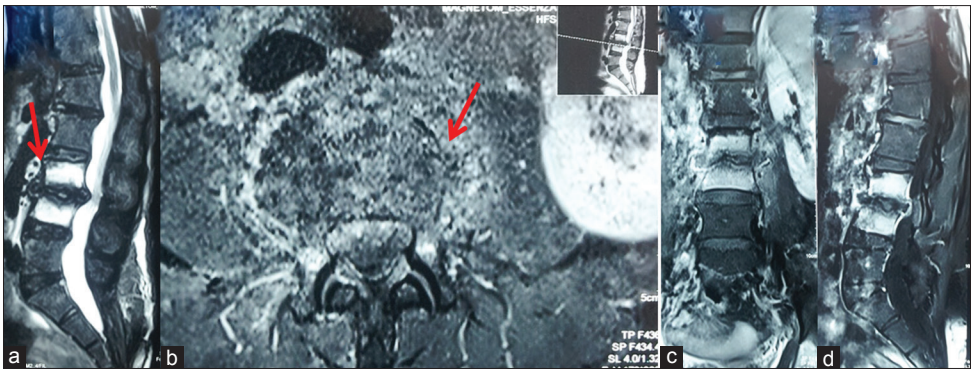

Figure 2: Contrast magnetic resonance imaging. (a) T2-weighted image sagittal image showing L3 and L4 vertebral body enhancement without disc enhancement (arrow shown). (b) T2-weighted axial image through disc space showing no enhancement of disc space and peripheral soft tissue enhancement (arrow shown). (c) Coronal image showing hyperintense L3 and L4 vertebral bodies and no enhancement of psoas muscle. (d) T1-weighted sagittal image showing enhancement of L3 and L4 vertebral bodies

of choice; however, it is nephrotoxic. Surgical debridement is recommended to decrease infection load;[5] however, it is not always possible because of poor medical fitness of the patient. Chen *et al*. showed successful outcome after repeated spinal debridement of lesion.[1] In our case, because of medical reasons (cryptogenic liver cirrhosis with portal hypertension and pancytopenia), we could not perform surgery and liposomal amphotericin B 5 mg/kg/day was started in consultation with infectious disease specialist; however, the patient did not respond well clinically, the symptoms were persistent, and white blood cells count did not improve. He developed acute respiratory distress secondary to septicemia due to mucormycosis infection and succumbed to death at 2 weeks.

Spinal affection in mucormycosis is described scarcely in literature. Clinical presentation can range from pain and disability to neurological involvement. Neurological involvement can be due to filamentous infiltration of spinal vasculature leading to infarction. De Pasqual *et al*.[6] reported a case of pulmonary mucormycosis spreading to dorsal spine causing acute paraplegia. Laminectomy was performed and antifungal treatment was started. Scheduled lobectomy could not be performed due to altered clinical condition. The patient did not respond to medical management and eventually died. Machida *et al*.[7] reported a case of myelodysplastic syndrome with subacute myelopathy not responding to local irradiation. The patient died of pneumonia. Postmortem examination suggested spinal infarction due to fungal infiltration of anterior spinal artery. Hadgaonkar *et al*.[2] reported a case of isolated spinal mucormycosis presented with pain and disability, and due to medical comorbidities, surgical management was not performed and the patient did not respond to antifungals, eventually succumbed to death.

The possibility of unusual and atypical infection should always be kept in mind, especially in immunocompromised patients. This is particularly important in developing countries where TB is highly endemic, and empirical chemotherapy is started.[8] We recommend biopsy in every case of infective spondylodiscitis for starting correct therapy and prognosticating the fate of disease. Spinal mucormycosis is extremely rare and fatal with high rate of mortality; therefore, imaging findings should be borne in mind to prevent delay in treatment and predict prognosis.[1,2]

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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