

Case Report

A case of postoperative tubercular spondylitis following microdiscectomy for lumbar disc herniation

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Received : 11 May 2021

Accepted : 21 May 2021

Published : 07 June 2021

DOI

10.25259/SNI_469_2021

Quick Response Code:



ABSTRACT

Background: Postoperative infections are one of the most common complications of spine surgery. However, following a lumbar microdiscectomy, a postoperative infection involving *Mycobacterium tuberculosis* (MTB) is extremely rare.

Case Description: One and half months after a L4-5 microdiscectomy, a 47-year-old immunocompromised male with hepatitis B infection presented with low back and bilateral gluteal pain. The MRI revealed a large intraspinal/paraspinal fluid collection spanning from L4 to S1 along with an anterior epidural collection at L5. The patient underwent a L4 lumbar laminectomy for abscess drainage and wound debridement. After obtaining a positive culture for MTB, four antitubercular drug therapies (ATTs) were started, that is, isoniazid (H), rifampicin (R), ethambutol (E), a. One month later, the patient had minimal pain and no residual neurological deficit.

Conclusion: MTB infection, although rare, should be considered among the differential diagnoses of postoperative infections following lumbar spine surgery in immunocompromised patients living in areas where tuberculosis is endemic.

Keywords: Antitubercular drugs, Microdiscectomy, Spine, Tuberculosis

INTRODUCTION

Most postoperative spine infections are bacterial, and majority are attributed to *Staphylococcus aureus*.^[5,6] Although rare, postoperative infections with *Mycobacterium tuberculosis* (MTB) may occur in areas of the world where tuberculosis is endemic, particularly in immunocompromised patients.^[4,8] To establish the diagnosis of a MTB infection, a tissue sample both for real-time polymerase chain reaction (RT-PCR) and histopathologic study should be obtained during surgery.

CASE REPORT

A 47-year-old hepatitis B positive male underwent L4-L5 microdiscectomy 45 days ago. He newly presented with low back and bilateral gluteal pain (i.e., VAS score 8 and 5

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respectively) and swelling under the surgical scar. The lumbar ultrasound showed a deep dorsal paraspinal collection extending from L3 to L5 in the subcutaneous and intramuscular region. The MRI additionally revealed diffused vertebral body edema with a large intraspinal/paraspinal and anterior epidural fluid collection from L4 to S1 [Figure 1]. First, 5 cc of whitish pus was aspirated under ultrasound guidance and it was sent for RT-PCR MTB, culture/sensitivity(C/S), Gram staining, and ZN staining for acid-fast bacilli (AFB). The results of all samples came back negative. However, as the ESR (erythrocyte sedimentation count) and C-reactive protein (CRP) levels were elevated, the patient was presumptively treated for bacterial spondylitis with cefepime and amikacin. Surgically, the entire abscess was drained and the wound was debrided. Samples were sent for histopathological and RT-PCR evaluations. The patient's clinical symptoms fully resolved postoperatively.

The histopathological report showed epithelioid cell granulomas with central caseation surrounded by Langhans type giant cells [Figure 2]. ZN stain for AFB was also positive [Figure 3]. The RT-PCR for MTB was again negative. Antitubercular drug therapy (ATT) of four drugs (HRZE) was started. One month later, both CRP and ESR decreased [Table 1].

Table 1: ESR and CRP level before and after ATT.

Parameters	Patient's value (before ATT)	Patient's value (1 month after ATT)	Normal range
oESR	40 mm/1 st h	12 mm/1 st h	00–10 mm/1 st h
CRP	16.4 mg/L	4 mg/L	0.00–5.00 mg/L



Figure 1: MRI of sagittal lumbosacral spine in STIR image showing diffused L5 vertebral body edema with large collection in interspinal and paraspinal region from L4 to S1 level.

The plan was to continue the four drugs for 2 months followed by a three drugs (HRE) regimen for another 10 months.

DISCUSSION

It is important to include MTB infection among the differential diagnoses for postoperative spinal infections in areas where tuberculosis is endemic and patients are immunocompromised. We identified six similar cases in the literature so far.^[8] Postoperative MTB infections of the spine arise from (i) hematogenous spread of active pulmonary tuberculosis and/or (ii) from local reactivation of an inactive tubercular focus.^[2,3] Many studies revealed that the RT-PCR test is useful for diagnosing MTB having a sensitivity and specificity of 62–72% and 97–99%, respectively.^[1,6,7,9] However, in our case, the RT-PCR was negative which

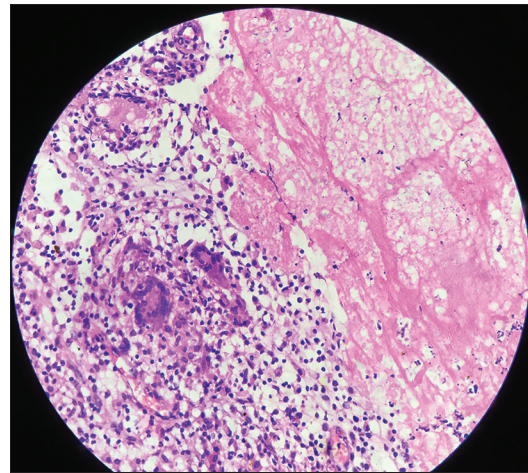


Figure 2: H&E section showing Langhans-type multinucleated giant cells, epithelioid cells, and caseous necrosis (x400).

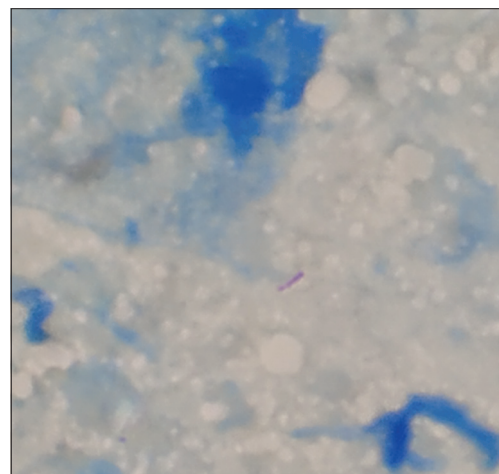


Figure 3: ZN stain showing acid-fast bacilli (x1000).

we attributed to the paucity of tuberculi bacilli in the sample. Antitubercular drugs play an important role in the treatment of tubercular spondylitis and here after 1 month of ATT, the patient showed clinical improvement. The plan was to continue for another 11 months, monitoring blood parameters to document continued improvement on a monthly basis (i.e., hemoglobin, ESR, CRP, and liver enzymes).

CONCLUSION

In areas where tuberculosis is endemic, immunocompromised patients undergoing lumbar discectomy may develop postoperative MTB infections.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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How to cite this article: Takhelmayum U, Daimai N, Laishram K, Juneja N, Yogananda ML, Longjam D. A case of postoperative tubercular spondylitis following microdiscectomy for lumbar disc herniation. *Surg Neurol Int* 2021;12:265.