Salmonella Typhi dorsolumbar spondylodiscitis mimicking tuberculosis – An interesting case report

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INTRODUCTION

Salmonella Typhi causing pyogenic spondylodiscitis was first described by James Paget in 1876.1,2 Salmonella rarely causes spinal infection, except in patients who are either immunocompromised or have sickle cell anemia.3,4 A few cases are seen in healthy individuals without preexisting gastrointestinal infection.5,6

Here, we present a 58-year-old immunologically normal female without a significant gastrointestinal history with infective pyogenic spondylodiscitis attributed to S. Typhi, treated with surgical decompression and appropriate antibiotic therapy.

CASE DESCRIPTION

A 58-year-old diabetic female came presented with low back pain of 2 years duration that had exacerbated over the past 4 weeks to the point where she was unable to stand and walk. Her visual analog score was 8 with Oswestry Disability Index of 76. Notably, she had previously empirically received antituberculosis treatment (ATT). On presentation, she was febrile to 100° and had...
tenderness in the lumbar region with paraspinal spasm. Her neurological examination was intact.

Her total leukocyte count was 12,400/cmm with ESR of 72 mm/h and CRP of 69 mg/L with normal urine report.

X-rays [Figure 1] of thoracic/lumbar spine showed mild loss of definition of the L1, L2, and L3 endplates plus a mild lumbar scoliosis.

The MR [Figures 2-4] revealed a large anterior epidural collection extending from D12 to L3-4; there was peripheral enhancement of the lesion compressing the conus medullaris that also demonstrated intrinsic mild edema. The marrow signal abnormality involving the L1 and L2 vertebra showed homogeneous enhancement. The prevertebral soft-tissue collections at the L2-L3 level were accompanied by disc destruction, and abscess/phlegmon clearly extending into both neural foramina. All findings were suggestive of spinal tuberculosis.

**Treatment/surgery**

Her anti-tubercular treatment was stopped for a week after which she underwent a D12 to L2 laminectomy, with unilateral D11-D12 facetectomy, debridement/drainage of an anterior epidural abscess with D11-L3 pedicle screw instrumented fusion [Figure 5]. The 45 mL pus collected, was sent for Gram and ZN staining, aerobic, anaerobic, and fungal culture with mycobacterium growth indicator tube culture. GeneXpert and biopsy disc material were sent for histopathological analysis.

The cultures, after 7 days, were positive for *S.* Typhi as were the cultures, Widal titer 2560, and drug susceptibility testing suggestive of sensitivity to fluoroquinolone.

She was started intravenous levofloxacin 500 mg single dose daily for 3 weeks. She was discharged after 10 days later on oral levofloxacin 750 mg that was continued till 2 months postoperatively.

At 3-month follow-up, her MRI [Figures 6 and 7] revealed complete resolution of anterior epidural and paravertebral soft-tissue collections, and her laboratory parameters were within normal limits, as shown in Table 1.

At 2 years, she was asymptomatic. Moreover, plain X-rays confirmed adequate stabilization [Figure 8].

**DISCUSSION**

*Salmonella* osteomyelitis is rare,[1,4] with an incidence of 0.45% of all cases of osteomyelitis.

The MRI of our patient suggested pyogenic spondylitis. Furthermore, MRI allows the diagnosis of a tuberculous lesion, with a sensitivity of 100% and specificity of 88%, and tuberculosis being essentially a medical disease, empirical ATT can be considered in India where it is endemic.[5]

Histopathology may not be completely reliable as there have been reports of *Salmonella* osteomyelitis presenting as a granulomatous condition with a similar histopathological
picture as in tuberculosis, brucellosis, or fungal osteomyelitis.\cite{6} However, the key to absolute diagnosis is the recovery of the organism, which can usually come from bone or pus specimens and blood cultures.\cite{1,6}

Once \textit{Salmonella} infection is identified, it usually responds to treatment with antibiotics such as chloramphenicol, ciprofloxacin, levofloxacin, ceftriaxone, or ampicillin.\cite{1,6} The duration of antibiotic treatment is varying from 6 weeks, 8 weeks, to 9 weeks.\cite{6} However, evidence of multidrug-resistant enteric pathogens is rising.\cite{4}
Indications of surgical interventions include osseous instability, neurologic deficit, or to establish the diagnosis in doubtful case.[3]

CONCLUSION

Salmonella spondylodiscitis should be considered among the differential diagnoses for patients with features of infective spondylodiscitis. Culture-specific antibiotics are the cornerstone of treatment, along with appropriate and timely surgery.

Declaration of patient consent

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

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Conflicts of interest

There are no conflicts of interest.

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