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# Early Onset Post Discectomy Spinal Tuberculosis: An Uncommon Complication

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***Authors' contributions***

*This work was carried out in collaboration between all authors. Author RS designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. Author ABG managed the analyses of the study. Authors PV and VS managed the literature searches. All authors read and approved the final manuscript.*

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***Case Study***

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## ABSTRACT

Early onset post discectomy tuberculosis spondylo-discitis at same operative level is an uncommon finding. We describe an unusual case of cervical spinal tuberculosis (spondylo-discitis) at the operated site (level C4-05) and review relevant literature. Even with present day available treatment options, the promises remain poor.

*Keywords: Spinal tuberculosis; post-discectomy complications.*

## 1. INTRODUCTION

Post-operative discitis is an uncommon but devastating complication after surgical spinal procedure. The incidence of post procedural discitis ranges from 0.26 to 4% [1,2]. Most common organisms responsible are *Staphylococcus aureus* and Streptococcus species. Three cases of postoperative discitis due to *Mycobacterium tuberculosis* are reported in English literature [3,4,5]. Two causes are possible, haematogenous spread, less frequently, or direct inoculation of virulent organisms during the surgery [6,7,8].

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Malignancy, chemotherapy, immune suppression and Diabetes mellitus have also been implicated as risk factors for post-procedural infections. [9,10,11]. The Operative procedure through previously irradiated tissue or previously operated tissue has also shown an increased risk for surgical site infection [12,13].

## 2. CASE REPORT

A 52 year old male patient reported with a chief complain of pain in cervical region radiating to both upper limbs associated with tingling and numbness since 2 weeks. Patient had no obvious history of recent trauma or weight lifting. There was no history of fever, cough, significant weight loss or reduced appetite. Patient presented with similar complaints 2 months back for which Magnetic Resonance Imaging (MRI) of cervical spine was done which revealed significant spinal canal stenosis at C4-05 level, with narrowing at C6-C7 level and was operated for laminectomy and discectomy with iliac crest bone grafting at C4-05 (Cloward procedure). Preoperatively, patient's haematological investigations were normal. The erythrocyte sedimentation rate was normal, quantitative C-Reactive Protein was negative, post operatively neurological status improved. Tissue from operative site was sent for culture and sensitivity which revealed no organism in gram or ZN staining. Histopathology revealed acute inflammation. Post operatively, wound was healthy and recovery was uneventful and patient was discharged after one week.

Patient again developed pain in cervical region radiating to both upper limb. A repeat MRI cervical spine revealed cervical spondylosis, partial wedging at C4,C5,C6 with erosion and destruction, infective spondylo-discitis like Koch's with abscess formation [3.3 x 1.6 x 0.6 cm]. Haematological investigations were normal, Erythrocyte sedimentation rate was 68 mm at the end of 1 hour, Quantitative C-Reactive Protein was positive (0.6 mg/dL). Surgical debridement was performed, collection from operative site was sent for culture and sensitivity which revealed no organism. Tissue was sent for Polymerase Chain reaction (PCR) came positive for Mycobacterium tuberculosis. Histopathology revealed chronic granulomatous inflammation with inflamed granulation tissue. On retrospective evaluation, patient had no past history of tuberculosis or tuberculous contact. The chest radiogram was with in normal limits. Patient was started on four drugs AKT post-operatively. After two week patient has symptomatic and neurological improvement.

## 3. DISCUSSION

The incidence of post-operative discitis is 0.7 to 0.8% after antibiotic prophylaxis [1,2]. Discitis results due to haematogenous spread in pediatric age group and by direct inoculation in adults.° In Tuberculosis it possibly spreads from involved urinary tract. Malnutrition, Diabetes, smoking, Immunocompromised states, obesity, Alcohol abuse and Instrumentation [3,14,15] may precipitate postoperativediscitis.

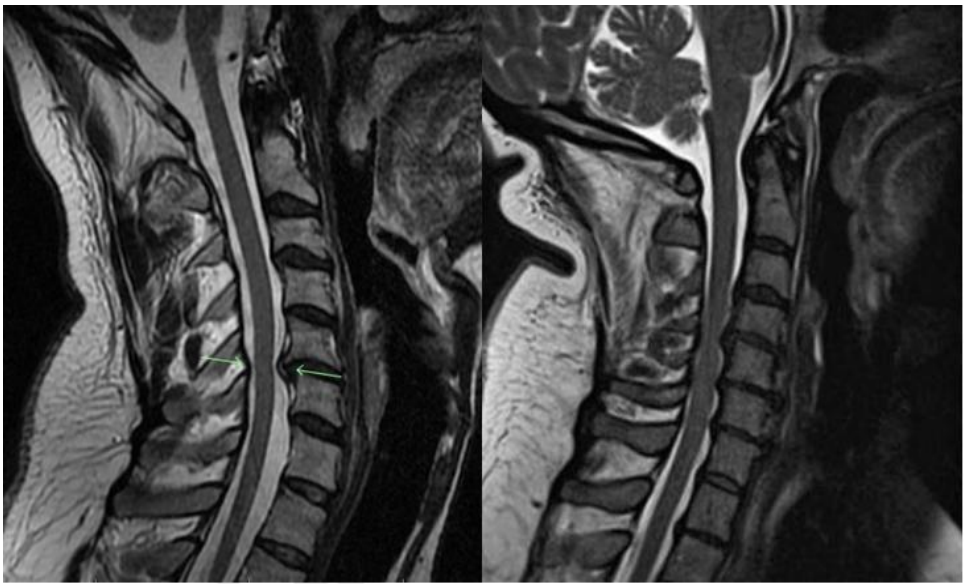

**Fig. 1. Preoperative and post operative MRI**

Staphylococcus aureus is the leading cause (60%) in most of the case and Gram-negative organisms are the next for post-operative discitis [14,15]. Other rare organism includes, Mycobacterium tuberculosis (MTB), Candidaalbicans, Mycobacterium cheloniand Propionibacterium acne [2,3]. Early post-operative infection usually presents as wound dehiscence and discharge within 3 months of surgery, while late post-operative infection may present as late as 7 years of surgery with milder symptoms. MRI with contrast enhancement is modality of choice with specificity (93%) and sensitivity (96%) for detection of vertebral infection [2, 3]. In recent years, the administration of broad-spectrum antibiotics and increased number of immunocompromiseci patients has led to an increase in infection rate with unusual organisms [15]. In present case report post-operative discitis due to Mycobacterium tuberculosis was developed after two month of primary operative procedure of cervical spine. Similarly Jeon DW et al reported a case of post L4-5 discectomy, MTB spondylo-discitis with bizarre course. [4] Patient was managed with curettage and inter-body fusion using autologous iliac bone grafting and anti-tuberculous therapy (ATT). Patient showed successful fusion and clinical improvement. The management for post-operative discitis is conservative approach with ATT and bracing. Those patients who fail to respond to above treatment, with continued pain, infection, spinal deformity require an operative intervention consisting of anterior debridement and inter-body fusion with autologous bone graft and posterior stabilization as done in present case report.

## 4. CONCLUSIONS

The spinal tuberculosis should be included in differential diagnosis of post-operative spondylo-discitis as an uncommon etiology. The high degree of suspicion of spinal tuberculosis is required for, early diagnosis and institution of treatment to get better results which will decreases the disease and complication related morbidity. The management includes an aggressive medical treatment and appropriate surgical intervention as per need. The successful outcome and full recovery can be possible if recognized early and treated appropriately.

## CONSENT AND ETHICAL APPROVAL

As per university standard guideline participant consent and ethical approval has been collected and preserved by the authors.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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