

# Tubercular Spinal Paravertebral Abscesses Presenting as Multiple Dermal Sinuses in HIV Reactive Patients.

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## ABSTRACT

Extra Pulmonary tuberculosis (EPTB) accounts for more than 50% of the cases of Tuberculosis in HIV-reactive patients and the clinical presentation is often atypical. EPTB sometimes poses diagnostic dilemmas as conventional diagnostic methods have a poor diagnostic yield and definite diagnosis may be delayed. Here we report a case of Spinal TB who uncommonly presented with multiple non healing sinuses in the Thoracolumbar region. Diagnosis was clinched by clinical presentation, +ve Interferon Gamma Release Assay (IGRA) accompanied by suggestive Magnetic resonance imaging findings.

**Keywords:** Dermal Sinus, Tuberculosis, Paravertebral Abscess.

## INTRODUCTION

TB is most common Opportunistic infection in HIV- Reactive Patients and can involve any organ in the body.<sup>[1]</sup> Extra-pulmonary TB (EPTB) is an important clinical problem especially in HIV-reactive and immunosuppressed. In HIV, reactive patients EPTB accounts for more than 50% of all cases of TB especially involving lymph node, plural, pericardial, abdominal and virtually every site can be involved. HIV infected persons are at an increased risk of primary or reactivation Tuberculosis and second episode of tuberculosis from exogenous re-infection. The diagnosis of EPTB involving deeply located inaccessible areas accompanied by reluctance to perform invasive procedures especially in HIV-reactive patients in Indian settings is very difficult.<sup>[2]</sup>

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## CASE REPORT

A 25-year old male who was HIV-positive for six years, presented with a three and a half month history of lower back ache which increased in intensity over the prior three weeks History of low-grade fever with malaise for last three months

without loss of appetite and history of multiple non healing sinuses in the back for last two months. He described the pain as moderate to severe, aggravated by movement He had no recent contact with anyone known to have tuberculosis and he had no history of intravenous drug use. He denied having any bladder or bowel dysfunction and there were no pulmonary, lower extremity motor or sensory symptoms. He has been on antiretroviral therapy (ARV) for the past six years but has been compliant. His ARV regime consisted of Tenofovir, lamivudine and efavirenz [TLE]. His physical examination revealed pallor, mild cachexia without generalized lymphadenopathy or oral candidiasis. Abd / CVS / Chest examination was normal. There were no focal deficits involving his motor and sensory systems. His hemoglobin level was 8.00 g/dL and his white blood cell count  $8.4 \times 10^9 / L$ . His ESR was 50 mm/hr. His CD4 cell count was 57 cells/ $\mu L$ , but no viral load assessment was attained. His chest radiograph was normal and two sputum samples was -Ve for acid fast bacilli. Tuberculin skin testing was done and showed no reaction.

He had multiple dermal sinuses on the back on the thoracolumbar regions, which were non tender. Pus from the sinuses were negative for AFB, Bactec culture for AFB was negative. Biopsy of the skin of sinus margin showed granulomatous dermatitis, was negative for AFB. TB gold interferon gamma release assay was done. It turned to be positive.

Cervical and Thoracic spine X-ray were normal X-ray lumbar spine showed disc space narrowing between L<sub>2</sub>-L<sub>3</sub> and L<sub>4</sub>-L<sub>5</sub> along with erosion of the anterior part of L<sub>5</sub> vertebral. This MRI done at admission showed multilevel vertebral destruction with marrow oedema along with anterior epidural, pre-vertebral and bilateral paravertebral collection. Bilateral collections along psoas muscles are seen reaching upto skin surface posteriorly with resultant sinus formation [Figure 1]. After three month MRI revealed there is resolution of marrow oedema within some vertebrae [Figure 2].

On the basis of his clinical presentation and suggestive MRI and strongly positive IGRA a diagnosis of spinal tuberculosis was made. He was started on a four drug anti-tuberculosis regime (rifampin, isoniazid, ethambutol and pyrazinamide) for two months with the plan to subsequently continue rifampin and isoniazid for ten to twelve months. After three months his all sinuses healed [Figure 3] & back pain decreased in intensity. He is symptomatically better and afebrile. He is still on ATT and HAART.

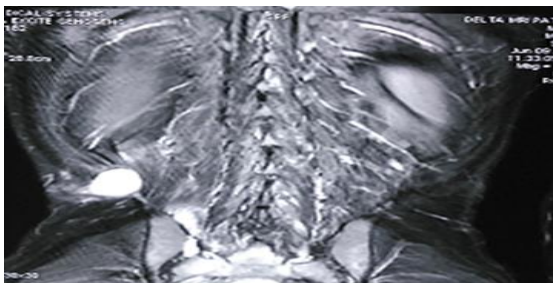


Figure 1: MRI Spine showing Paravertebral abscess reaching upto skin.

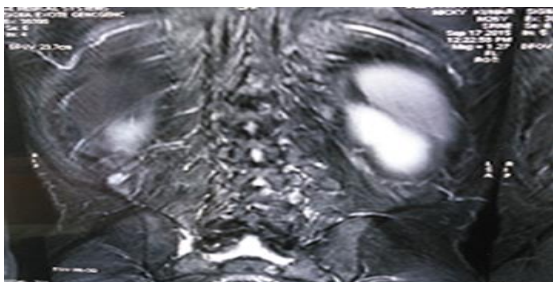


Figure 2: MRI Spine after 3 months showing some resolution of paravertebral abscess.



Figure 3: Healing sinuses after 3 months of Anti-Tubercular Treatment.

## DISCUSSION

Skeletal tuberculosis is a haematogenous infection and affects almost all bones and commonly affects spine and hip joint Spinal tuberculosis (TB spine) is the most common form of skeletal tuberculosis. Majority of patients are under thirty years of age at the time of diagnosis. Constitutional symptoms such as weakness, loss of appetite and weight, evening rise of temperature and night sweats generally occur before the symptoms related to the spine manifest. The presentation of Spinal Tuberculosis depends on stage of the disease affected sites and presence of complications such as neurologic deficits, abscesses, or sinus tracts.<sup>[3]</sup> Lower thoracic and lumbar vertebrae are the most common sites of spinal tuberculosis followed by middle thoracic and cervical vertebrae. Usually, two contiguous vertebrae are involved but several vertebrae may be affected and skip lesions are also seen. The infection begins in the cancellous area of vertebral body commonly in epiphyseal location and less commonly in the central or anterior area of vertebral body. The infection spreads and destroys the epiphyseal cortex, the intervertebral disc and the adjacent vertebrae. It may spread beneath the anterior longitudinal ligament to reach neighboring vertebrae. The vertebral body becomes soft and gets easily compressed to produce either wedging or total collapse. Anterior wedging is commonly seen in the thoracic spine where the normal kyphotic curve accentuates the pressure on the anterior part of vertebrae. The exudates penetrates the ligaments and follows the path of least resistance along fascial planes, blood vessels and nerves, to distant sites from the original bony lesion as cold abscess.<sup>[2]</sup>

The best diagnostic modality for Spinal TB is MRI. MRI is more sensitive than radiography and more specific than CT in the diagnosis of Spinal TB. The anatomical pattern revealed by MRI, particularly the soft tissues and disc involvement, yields greater specificity. MRI can also provide the diagnosis of TB of the spine 4-6 months earlier than conventional methods, offering the benefits of earlier detection and treatment. MRI allows for the rapid determination of the mechanism for neurologic compression and can distinguish between bone and soft tissue lesion (tuberculoma).<sup>[4]</sup>

In our case although the MRI picture was suggestive of spinal TB, only IGRA-EIA was strongly (T-N value 21 pg./ml) positive which helped in clinching the diagnosis of this uncommon presentation and starting ATT. The current evidence suggest that IGRAS perform similarly to TST in identifying individuals with latent Tuberculosis Both IGRA and TST has suboptimal sensitivity for active TB, suggesting a potential role

for both tests especially in severely immune compromised individuals.<sup>[5]</sup>

The world Health Organization recommends the first line of treatment of TB in HIV-reactive patients a quadruple regimen including rifampin. The timing of commencement of HAART therapy in HIV co-infected patients remain a controversial issue, although recent study showed improve outcome if it is started with two months of ATT.<sup>[6]</sup>

## CONCLUSION

High index of clinical suspicion and timely judicious use of appropriate diagnostic methods, confirmation of diagnosis early institution of specific anti tubercular treatment and close clinical observation especially for adverse side effects are the key to successful management of EPTB in HIV-Reactive patients.

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