

Case Report

Recurrent tubercular lymphadenitis in an HIV-positive hospital sanitation worker: a clinicosocial case report

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ABSTRACT

Tuberculosis (TB) remains one of the leading opportunistic infections among people living with HIV, particularly in low- and middle-income countries. Extrapulmonary tuberculosis (EPTB), especially tubercular lymphadenitis, is more common among immunocompromised individuals and may present with recurrent disease, diagnostic difficulties, and prolonged treatment requirements. We report the case of a 26-year-old HIV-positive male hospital sanitation worker who developed recurrent bilateral infraclavicular tubercular lymphadenitis with cold abscess formation despite regular antiretroviral therapy (ART) and anti-tubercular treatment (ATT). The patient belonged to a socioeconomically vulnerable background with undernutrition, overcrowded housing, and probable occupational exposure to infectious material. Investigations including FNAC, ultrasonography, and CBNAAT confirmed drug-sensitive tubercular lymphadenitis. The patient demonstrated good adherence to both ART and ATT but experienced recurrent episodes requiring prolonged management under the National Tuberculosis Elimination Programme (NTEP). This case highlights the complex interaction between HIV infection, occupational vulnerability, undernutrition, and adverse social determinants contributing to recurrent extrapulmonary tuberculosis. Strengthening occupational safety measures, nutritional support, and integrated HIV-TB care is essential for vulnerable healthcare-associated workers.

Keywords: HIV, Extrapulmonary tuberculosis, Tubercular lymphadenitis, Sanitation worker, Occupational exposure, Clinicosocial case report

INTRODUCTION

Tuberculosis remains a major public health problem globally and continues to be the leading opportunistic infection among people living with HIV.¹ India contributes significantly to the global burden of both tuberculosis and HIV-associated TB.² Extrapulmonary tuberculosis (EPTB) occurs more frequently among immunocompromised individuals, with tubercular lymphadenitis being one of the most common forms.³

Recurrent tubercular lymphadenitis in HIV-positive individuals may occur because of immune dysregulation, reinfection, paradoxical inflammatory responses, or persistent infection.⁴ Such presentations are frequently associated with significant diagnostic and therapeutic challenges.

Healthcare sanitation workers constitute an occupationally vulnerable group because of frequent exposure to infectious body fluids, inadequate awareness regarding universal precautions, inconsistent use of personal protective equipment (PPE), and socioeconomic insecurity.⁵

Social determinants such as undernutrition, overcrowding, poor ventilation, and poverty further contribute to increased susceptibility to tuberculosis and adverse treatment outcomes.⁶

We present a clinicosocial case report of recurrent tubercular lymphadenitis in an HIV-positive sanitation worker highlighting the interaction between biological, occupational, nutritional, and socioeconomic determinants influencing disease progression.

CASE REPORT

A 26-year-old married male hospital sanitation worker presented to the tuberculosis centre for routine follow-up with bilateral infraclavicular swellings of approximately one-year duration associated with reduced appetite and weight loss.

The patient was apparently asymptomatic two years earlier. He reported a history suggestive of possible occupational exposure to blood and body fluids while handling a trauma patient without gloves in the presence of a pre-existing wound over his hand. Subsequently, during medical evaluation, he was diagnosed as HIV positive and initiated on antiretroviral therapy (TLD regimen) after appropriate counselling.

Approximately eight months after initiation of ART, the patient developed a painless swelling over the left infraclavicular region which gradually increased in size. There was no associated fever, redness, or acute inflammatory symptoms. Fine needle aspiration cytology (FNAC) and ultrasonography were suggestive of tubercular lymphadenitis. CBNAAT detected *Mycobacterium tuberculosis* without rifampicin resistance.

The patient was initiated on anti-tubercular treatment under the National Tuberculosis Elimination Programme (NTEP). Adherence to treatment was reported to be good. During follow-up, recurrence of infraclavicular swelling occurred on the contralateral side, again suggestive of tubercular lymphadenitis. Subsequently, he developed a cold abscess over the lower back for which incision and drainage was performed, followed by scar formation.

During the treatment period, the patient experienced one transient episode of hematemesis and underwent evaluation at a tertiary care hospital. Upper gastrointestinal endoscopy was reported as normal. He also complained of nausea, vomiting, headache, vertigo, and orange discoloration of urine during ATT.

The patient remained compliant with ART and cotrimoxazole preventive therapy. His CD4 count was approximately 359 cells/mm³. No major opportunistic infections other than tuberculosis were documented.

Clinicosocial assessment

The patient belonged to a nuclear family of lower-middle socioeconomic status (modified BG Prasad class III). He was the sole earning member with a monthly family income of approximately ₹14,000.

Environmental assessment revealed residence in a poorly ventilated kutcha house with overcrowded living conditions. Nutritional assessment based on 24-hour dietary recall demonstrated significant calorie and protein deficit.

Knowledge, attitude, and practice (KAP) assessment revealed initially inadequate awareness regarding universal precautions and PPE use. However, the patient demonstrated positive treatment-seeking behaviour, regular follow-up visits, and good adherence to both ATT and ART after counselling.

Examination findings

The patient was conscious, coherent, and moderately built but poorly nourished with mild pallor. Weight was 55 kg, height 170 cm, and body mass index (BMI) was 19 kg/m². Bilateral infraclavicular swellings with healed sinus scars were present, more prominent on the right side. The swellings were firm in consistency with restricted mobility and without tenderness or local rise of temperature.

A healed scar suggestive of previously drained cold abscess was noted over the lower back. Respiratory, cardiovascular, abdominal, and central nervous system examinations were unremarkable.

Table 1: Investigations.

Investigation	Findings
FNAC and ultrasonography	Suggestive of tubercular lymphadenitis
CBNAAT	MTB detected; rifampicin resistance not detected
Chest radiograph	Normal
ESR	Elevated
ELISA for HIV	Positive
CD4 count	Approximately 359 cells/mm ³



Figure 1: Healed scar over lower back suggestive of previously drained cold abscess.

Differential diagnosis

Differential diagnosis included: tubercular lymphadenitis, reactive lymphadenopathy, lymphoma, atypical mycobacterial infection, and metastatic lymphadenopathy.

Clinicosocial diagnosis

A 26-year-old HIV-positive hospital sanitation worker belonging to lower socioeconomic status presenting with

recurrent drug-sensitive extrapulmonary tuberculosis in the form of bilateral tubercular lymphadenitis associated with healed cold abscess, nutritional compromise, occupational exposure risk, poor housing conditions, and inadequate ventilation.

Table 2: Timeline of events.

Timeline	Clinical event
2 years prior	Apparently asymptomatic
Subsequently	Probable occupational exposure to blood/body fluids
Following evaluation	Diagnosed HIV positive and initiated on ART
Approximately 8 months after ART	Developed left infraclavicular swelling
Later	FNAC/USG suggestive of TB lymphadenitis
Same period	CBNAAT positive for MTB without rifampicin resistance
Following diagnosis	Initiated ATT under NTEP
During follow-up	Contralateral infraclavicular swelling developed
Subsequently	Developed cold abscess over lower back
Later	Incision and drainage performed
Present	On continued HIV-TB care and follow-up



Figure 2: Healed infraclavicular sinus scar secondary to tubercular lymphadenitis.

DISCUSSION

Tubercular lymphadenitis is among the most common forms of EPTB observed in HIV-positive individuals.³ HIV-associated immune dysfunction predisposes affected individuals to atypical manifestations, disseminated disease, and recurrent tuberculosis.⁴

This case demonstrates interaction between biological susceptibility and adverse social determinants contributing to recurrent disease. The patient had multiple recognized risk factors including HIV infection, undernutrition, overcrowded living conditions, occupational exposure risk, and limited awareness regarding infection prevention practices.

Table 3: Comparison with previously published literature.

Study	Similar findings	Distinctive feature in present case
Sharma and Mohan ³	HIV-associated extrapulmonary TB common	Occupational vulnerability emphasized
Fontanilla et al ⁷	TB lymphadenitis with recurrence possible	Recurrent bilateral infraclavicular disease
Lawn et al ⁴	HIV immune dysregulation contributes to recurrent TB	Associated undernutrition and poor living conditions
Wilburn and Eijkemans ⁵	Healthcare workers vulnerable to infectious exposure	Sanitation worker with inadequate PPE awareness

Undernutrition and tuberculosis have a bidirectional relationship. Malnutrition impairs cell-mediated immunity and increases susceptibility to active TB, while tuberculosis itself worsens nutritional status through chronic inflammation and reduced appetite.⁶

Healthcare sanitation workers frequently remain neglected in occupational health programmes despite regular exposure to infectious materials. Inadequate PPE use and poor awareness regarding universal precautions increase occupational vulnerability.⁵

The recurrent nature of lymphadenitis despite reported adherence may reflect persistent immune dysregulation, paradoxical inflammatory responses, or reinfection. Integrated HIV-TB services play an essential role in ensuring continuity of care, adherence counselling, nutritional support, and family screening.

CONCLUSION

This clinicosocial case highlights recurrent EPTB in an HIV-positive sanitation worker influenced by occupational vulnerability, undernutrition, and adverse socioeconomic determinants. Integrated HIV-TB services, nutritional rehabilitation, occupational safety measures, and improved living conditions are essential to reduce morbidity among vulnerable healthcare-associated workers.

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