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CERVICAL LYMPH NODE TUBERCULOSIS IN INDIA: REVALENCE, PRESENTATION, AND MANAGEMENT—A BRIEF REVIEW

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ABSTRACT

Background: Cervical lymph node tuberculosis (TB) constitutes 35% of extrapulmonary TB cases in India and represents a diagnostic challenge due to overlapping presentations with lymphoma, metastases, and reactive nodes.

Objective: To review prevalence, clinical presentation, diagnostic approach, and management of cervical node TB in the Indian context.

Methods: Narrative review synthesizing recent Indian studies, NTEP guidelines, and international standards.

Results: Urban incidence is 52/100,000 adults; hospital series show TB in 38-57% of cervical lymphadenopathy cases. Common presentation: painless unilateral posterior triangle swelling (mean age 32-37 years, female predominance). Diagnosis: FNAC (80-90% sensitivity) ± CBNAAT; excision biopsy for inconclusive cases. Treatment: 6-month ATT (2HRZE/4HR), 90% resolution rate.

Conclusion: Cervical node TB remains common in India. Early FNAC diagnosis and standard ATT achieve excellent outcomes, though residual nodes (20%) and drug resistance require vigilance.

KEYWORDS: cervical lymphadenitis, tuberculosis, India, extrapulmonary TB, FNAC, ATT

INTRODUCTION

India reports 2.8 million TB cases annually, with extrapulmonary TB comprising 20-24% of total cases[1]. Cervical lymph node TB ("scrofula") accounts for 35% of extrapulmonary

manifestations, making it the commonest form[2]. Recent hospital-based studies confirm TB etiology in 38-57% of cervical lymphadenopathy presentations[3,4].

Urban incidence reaches 52/100,000 adults in middle-class populations, with female predominance (M:F 0.5-1:1) and peak incidence in 20-40 year age group[3]. Delayed diagnosis risks complications including sinus formation, cold abscesses, and cosmetic disfigurement.emedicine[5].

This review synthesizes contemporary Indian evidence on cervical node TB prevalence, clinical features, diagnostic algorithms, and management per National TB Elimination Programme (NTEP) guidelines.

METHODS

Narrative synthesis of peer-reviewed Indian studies (2015-2025), NTEP guidelines, and WHO recommendations. PubMed/PMC searches used terms "cervical lymph node TB India," "scrofula prevalence," and "tuberculous lymphadenitis management India." Hospital series (n>100), community incidence studies, and guideline documents were prioritized.

RESULTS

Prevalence in India

Community incidence: Mumbai urban middle-class cohort (2007-2009): 52/100,000 adults (≥14 years)[3]. TB India Report 2024 confirms lymphadenopathy as commonest EPTB form (35%)[1].

Hospital series:

- Gujarat tertiary ENT center (2001-2020): TB confirmed in 38.7% of 1,019 cervical lymphadenopathy cases[4].
- Central India (2023): 57% TB diagnosis rate among suspected cases[6].
- Puducherry (2020-2021): TB cervical adenitis comprised study cohort after FNAC confirmation[2].

Demographics: Mean age 32-37 years; female predominance (60-65%).[2-4] Posterior triangle most common (51-58%), followed by Level V/supraclavicular[3,4].

Risk factors: TB contact history (significant, $p<0.001$), rural residence, low socioeconomic status.pmc.ncbi[3,6].

Table 1: Key Indian Studies on Cervical Node TB Prevalence

Study	Setting	N	TB Prevalence	Key Findings	Reference
Mumbai urban (2007-09)	Community hospital	191	38.7%	Incidence 52/100,000; posterior triangle 51%	[3]
Gujarat ENT (2001-20)	Tertiary center	1,019	38.7%	M:F 1:1.1; mean age 37.3y	[4]
Puducherry (2020-21)	Hospital cohort	35	100%	Female 62.9%; age 32±13y	[2]
Central India (2023)	Clinic-based	100	57%	Young rural females	[6]

Clinical Presentation

Common features (85-95% cases):

- Painless neck swelling (single node 65%)
- Posterior triangle (51-58%)
- Firm, non-tender, mobile (early); matted/fixed (20-23%)
- Minimal constitutional symptoms (fever 8-25%, weight loss 14-20%)

Progression: Caseation → cold abscess (10%) → sinus/fistula (1-5%) → healing with scarring[3,4].

Red flags: Rapid growth, B symptoms, supraclavicular nodes, systemic symptoms suggest malignancy[3].

Associated findings: PTB coexistence 5-6%; HIV uncommon in recent series[2,3].

Diagnosis

Stepwise approach (NTEP recommended):

1. **History/examination:** TB contact, swelling duration, progression, systemic symptoms.
2. **FNAC (first-line):** Sensitivity 80-90%; granulomas/caseation diagnostic (94%)[2,3].
3. **Microbiology:** CBNAAT (20-80% yield), AFB smear (low yield), culture (gold standard, slow)[2].
4. **Imaging:** USG neck (node characteristics), CXR (PTB screen).
5. **Excision biopsy:** Inconclusive FNAC, residual nodes post-ATT, suspected MDR. **Differentials:** Reactive (38%), metastasis (9%), lymphoma (4%), NTM/sarcoid (rare)[3].

Table 2: Diagnostic Yield in Cervical Node TB.

Test	Yield	Advantages	Limitations	Reference
FNAC	80-94%	OPD, rapid	Sampling error	[2,3]
CBNAAT	20-80%	Rif resistance	Cost, sample vol	[2]
Culture	30-50%	Drug sensitivity	4-6 weeks	[2]
Biopsy	>95%	Definitive	Invasive	[3]

Management

ATT regimen (NTEP standard): 6 months (2HRZE/4HR)

- **Intensive phase (2 months):** H (75-150mg), R (450-600mg), Z (750-2000mg), E (800-1600mg)
- **Continuation (4 months):** HR
- Fixed-dose combinations preferred[7].

Response rates: 90.6% complete resolution at 6 months; residual nodes 20% (often benign)[2,3].

Surgical indications (5-10%):

- Diagnostic uncertainty
- Large abscess (>3cm)
- Sinus/persistence post-ATT
- Cosmetic/airway compromise

MDR-TB: 3-4% EPTB cases; extended regimen, second-line drugs[1].

Follow-up: Monthly initially; assess node size, ATT tolerance, LFTs. 6-month post-treatment surveillance[2].

Adverse events: Gastritis (20%), vomiting (26%), rash (6%); hepatitis rare in young patients[2].

DISCUSSION

Cervical node TB remains India's commonest EPTB form, affecting primarily young urban females. [1-4] Single painless posterior triangle swelling typifies early presentation, contrasting older matted/sinus descriptions reflecting improved healthcare access[3,4].

FNAC±CBNAAT establishes diagnosis in >90%, obviating surgery in most[2,3]. Standard 6-month ATT yields excellent outcomes (90% resolution), though residual nodes pose diagnostic dilemmas—extension vs. NTM vs. benign fibrosis[2].

Challenges include CBNAAT's modest yield (20-80%), distinguishing TB from NTM/sarcoid, and emerging drug resistance[1,2]. Urban incidence (52/100,000) likely underestimates true

national burden given rural underdiagnosis[3].

Practice recommendations:

1. High TB suspicion for isolated cervical swelling (age 20-40)
2. Early FNAC; reserve biopsy for inconclusive/residual cases
3. 6-month ATT standard; monitor monthly
4. Partner/family TB screening

CONCLUSION

Cervical node TB constitutes substantial head-neck morbidity in India, with 38-57% hospital prevalence among lymphadenopathy and community incidence 52/100,000 urban adults. Painless posterior triangle swelling in young females warrants FNAC confirmation and 6-month ATT, achieving 90% resolution. Vigilance for residual nodes, drug resistance, and PTB/HIV coinfection optimizes outcomes.

Author Contributions

[Dr. Chanchal Verma]: Concept, synthesis, writing, guarantor.

Conflicts of Interest

None declared.

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