



MANIFESTATIONS OF EXTRAPULMONARY TUBERCULOSIS IN ENT REGION - A PROSPECTIVE OBSERVATIONAL STUDY IN A TERTIARY CARE CENTRE

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ABSTRACT

Background: Tuberculosis (TB) remains a worldwide public health problem despite the fact that the causative organism was discovered more than 100 years ago. Extra pulmonary tuberculosis in ENT region mainly manifests as tubercular cervical lymphadenopathy, tubercular otitis media (TBOM), tubercular laryngitis, nasal TB, deep neck space abscess, tuberculosis of oral cavity. **Methods:** The present study was conducted to assess different manifestations of tuberculosis affecting the ear, nose and throat, head and neck regions in patients attending the outpatient department of ENT, in a tertiary care hospital in Upper Assam region. Study period was 18 months from April 2022 to September 2023. **Results:** Total 100 patients were reviewed, out of which 59 patients were male and 41 females. The most common extrapulmonary manifestation was tubercular cervical lymphadenopathy (82%) followed by deep neck space abscess (8%), tubercular otitis media (5%) and tubercular laryngitis (5%). 42 patients had coexisting pulmonary tuberculosis. And 4 patients were positive for HIV. **Conclusion:** Extra pulmonary TB in head and neck region is not an uncommon entity, with a wide range of presentation. Tubercular cervical lymphadenopathy is the commonest manifestation. A clinician should have a high degree of suspicion in diagnosing these cases. Anti tubercular therapy (ATT) is an effective treatment protocol in all cases of TB.

KEYWORDS : Tuberculosis, ENT, Cervical Lymphadenopathy.

INTRODUCTION:

Even in the modern era of advanced medical technology, tuberculosis (TB) still claims millions of lives worldwide each year. (1).

Even nations that were previously thought to be safe have reported cases of this illness in recent years. Also, HIV and TB coinfection is on the rise. MDR TB is also a major concern. (2) A 90% decrease in the total number of tuberculosis deaths and an 80% decrease in tuberculosis incidence are the particular targets set for 2030 in the End TB Strategy. (1)

Of the several extrapulmonary symptoms of tuberculosis, a significant number present in the ENT area as cervical lymphadenopathy, otitis media, laryngitis, pharyngitis, and nasal TB. (3)

Cartridge based nucleic acid amplification test (CB NAAT) is a valuable tool. Within two hours, the cartridge-based nucleic acid amplification test (CB NAAT) can be used to diagnose TB and rifampicin resistance. More sensitive than all other tests, CB NAAT is particularly useful in cases of tubercular lymphadenitis.

Given the variety of clinical manifestations associated with extrapulmonary tuberculosis, a clinician must exercise extreme caution while correctly diagnosing these cases. (4)

AIM AND OBJECTIVES:

The aim of our study is to enumerate the various extrapulmonary manifestations of tuberculosis in ENT, Head and Neck region in patients attending department of ENT, in a tertiary care hospital in Upper Assam region.

MATERIALS AND METHODS:

It is a hospital based prospective observational study. A total

of 100 patients were diagnosed with otorhinolaryngological extrapulmonary tuberculosis during the period of review.

The study was conducted in the department of ENT, Assam Medical College, Dibrugarh district, Assam. The study period is 18 months which was conducted from April 2022 to September 2023.

The study group consisted of all patients with extrapulmonary tuberculosis symptoms and signs attending outpatient clinic in the department of ENT, Assam Medical College and willing to participate in the study. All age group patients were included. Those with loss to follow-up and solely pulmonary tuberculosis were not included.

Every case received a comprehensive workup that comprised of a comprehensive detailed history, clinical assessment including general physical and elaborate ear, nose and throat, head and neck examination.

A complete hemogram, sugar profile, renal function, kidney function, HIV testing done in all patients.

Every patient had a chest X-ray to rule out co-occurring pulmonary tuberculosis.

In pertinent cases, radiological examinations of the cervical spine, mastoids, and soft tissue neck were performed. Computed tomography scans and ultrasonography of the affected site was performed as necessary.

For every suspected neck swelling, fine needle aspiration cytology (FNAC) was carried out. Inconclusive findings in FNAC were further sent for FNAC for CBNAAT. If reports still inconclusive, we go for incision biopsy of the neck node.

Additionally, sputum, pus from draining sinuses, abscess,

laryngeal secretions, and ear discharge were all subjected to cultures, sensitivity tests, and AFB stains. Cytological characteristics such as the presence of Acid-fast bacilli (AFB) or caseation necrosis were regarded as favourable results for the diagnosis of tuberculosis in FNAC.

On confirming the diagnosis, all the patients were treated with antitubercular drugs. The patients were followed up and evaluated for response to anti-tubercular treatment at regular intervals.

RESULTS:

During the review period, 100 patients were diagnosed with otorhinolaryngological extrapulmonary tuberculosis which include tubercular cervical lymphadenopathy, otitis media, laryngitis, deep neck space abscess.

Out of 100 patients, 59 were female and 41 were male. 42 patients had coexisting pulmonary tuberculosis and 3 patients were positive for HIV.

Tubercular Cervical Lymphadenopathy:

In our study, it is the most common manifestation of extrapulmonary TB in ENT region accounting for 82 out of total cases. There were 35 males and 47 females. 31 patients had coexisting pulmonary TB. HIV was positive in 2 patients.

And the most common age group affected was 4th decade. The commonest presentation was painless neck swelling (85%) followed by tenderness over swelling ulceration over the swelling, discharging sinus. Bilateral neck node involvement was noted in 24 cases. Posterior triangle lymph node was the most common neck node involved.

All the patients were sent for fine needle aspiration cytology (FNAC), and if inconclusive then FNAC for CBNAAT was sent. 65 cases had their diagnosis confirmed by these investigations itself. Conclusive diagnosis could not be arrived in 17 cases. For these 17 patients' excision biopsy done and confirmed. In accordance with the Revised National Tuberculosis Control Programme (RNTCP), the patients were placed on category I anti tuberculous treatment (ATT). They were continued on a monthly follow-up until the therapy was finished, and then as needed thereafter.

Tuberculous Otitis Media:

There were 5 cases of tubercular otitis media (TBOM). 3 cases were male and 2 were female. The most common age group involved was 11-20.

2 patients had coexisting pulmonary tuberculosis.

Major symptoms are refractory otorrhoea and hearing loss. All patients had tympanic membrane perforation. However multiple perforations were present in only one case. One patient with otitis media had mastoid abscess. Polyp with granulation tissues was noted in 2 patients. Biopsies were taken from these tissues and sent for histopathological examination (HPE) which revealed the diagnosis of TB.

Pure tone audiometry revealed conductive hearing loss in 1 patient while mixed hearing loss in remaining ones.

The patients then received category I anti tuberculous treatment. Patients were monitored on a monthly basis until the end of the ATT and then as needed thereafter.

Tuberculous Laryngitis:

Tubercular laryngitis was diagnosed in 5 patients. One female patient and four male patients were present. 2 patients were in the age group of 31-40, 41-50 respectively, and one patient is in the age group of 51-60. Main symptom was hoarseness of voice. In 3 cases hoarseness developed 1-3 months after

complaints of cough with expectoration. In 2 cases both complaints were reported to have developed together. All cases had coexisting pulmonary TB with Sputum for AFB positive. A direct laryngoscopy was performed in order to rule out cancer. In each case, there was a noticeable laryngeal mucosal congestion. One patient had mouse nibbled appearance of vocal folds.

Category I ATT was initiated in accordance with RNTCP guidelines and followed up monthly.

Deep Neck Space Abscess:

8 patients with deep neck space abscess had tubercular in etiology. There were two female and six male patients. 4 patients had coexisting pulmonary tuberculosis.

The main presenting complaint was long standing neck swelling. There was no history of any pain. Several antibiotics were tried but failed. USG neck, CECT neck was done in all the 8 patients. One abscess got ruptured by itself and wall biopsy sent. Aspirated pus was sent for AFB and CB NAAT and all 8 reports were diagnostic of tuberculosis.

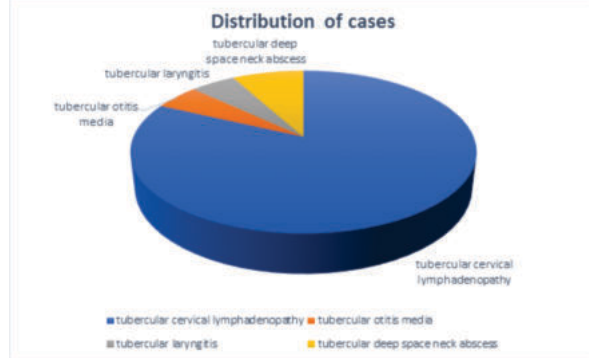
All patients received category 1 ATT. Patients were then routinely followed up uneventfully till the end of treatment.

Table 1: Age Wise Distribution Of Tubercular Manifestations

	0-10	11-20	21-30	31-40	41-50	51-60	>60	Total
Cervical lymphadenopathy	12	19	16	25	4	5	1	82
TB otitis media	1	2	1	1	0	0	0	5
Laryngeal TB	0	0	0	2	2	1	0	5
Tubercular deep neck space abscess	0	0	0	2	3	2	1	8

Table 2: Gender Wise Distribution Of Tubercular Manifestations

	Male	Female	Total
Cervical lymphadenopathy	35	47	82
TB otitis media	3	2	5
Laryngeal TB	4	1	5
Tubercular deep neck space abscess	4	4	8



Incidence Of Pulmonary TB Coexisting With Extrapulmonary Tuberculosis In Head And Neck Region.

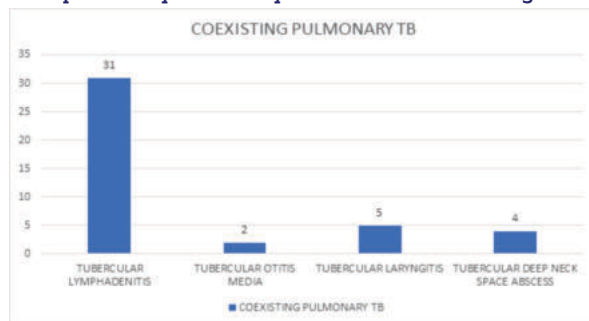


Table 3: Presentation Of Cervical Lymphadenopathy

Presentation:	No of cases (n)	Percentage
Painless neck swelling	70	85%
Painful neck swelling	5	6%
Ulcer	3	4%
Discharging sinus	4	5%

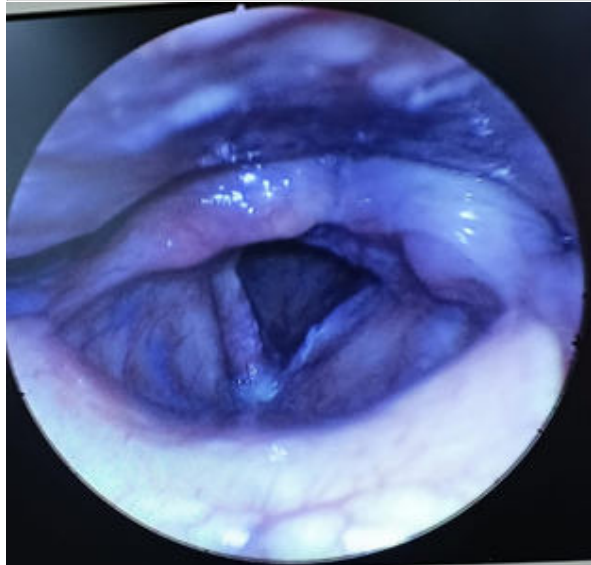


Fig Showing Mouse Nibbled Appearance Of Left Vocal Cord In A Patient Of Tubercular Laryngitis.



Fig Showing Tubercular Cervical Lymphadenopathy In Posterior Triangle Group Of Neck Nodes In A 39 Years Old Female.

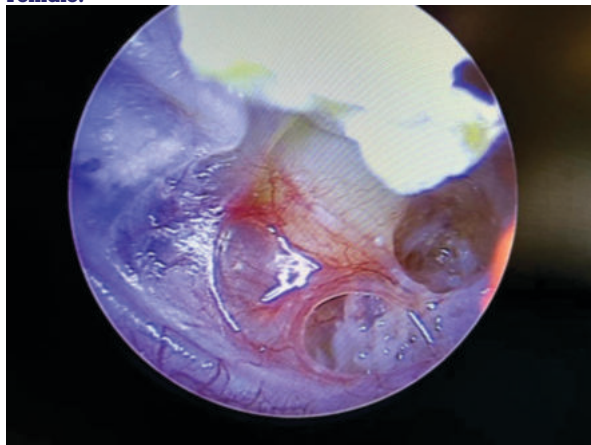


Fig Showing Tubercular Otitis Media With Multiple Perforations In Left Tympanic Membrane Of A 16 Years Old Girl.

DISCUSSION:

Tuberculosis is a global disease and it is estimated that extrapulmonary tuberculosis constitutes 15 to 20 per cent of tuberculosis cases in general practice among HIV-negative adults in India.(5) A higher index of clinical suspicion is essential to diagnose extra pulmonary tuberculosis due to its lack of characteristic symptoms which often leads to misdiagnosis.(6)

We have total 100 patients during the period of review with a female preponderance (59 %) which is similar to various studies where there is female dominance. In a study conducted by Soumyajit Das et al female predominance is seen (60.3% females, 39.7% males). (7) Agarwal et al., also found a higher preponderance of females in his study (42% males vs 58% females). (8)

In our study tubercular cervical lymphadenopathy is the most common manifestation comprising of 82% of total cases which is similar to a study conducted by Singhania Ankit et al where cervical lymphadenopathy constitutes 95.3% of all extrapulmonary TB cases in ENT region. And posterior triangle lymph nodes are the most commonly involved which is similar to a study conducted by Singhania Ankit et al where posterior triangle is the most commonly involved one (88%). (9) And the most common age group involved in tubercular cervical lymphadenopathy in our study is 31-40 years. Singhania Ankit et al also found the most common age group involved is the 4th decade. Reshma P Chavan et al in their study found 21- 30 years as the most common age group involved. (9, 10)

And the 2nd most common manifestation is tubercular otitis media (TBOM) with 5% of total cases. Shilpam Sharma et al in their study found TBOM accounted for 1.5% of all cases. (11)

Many studies have documented a wide variety of ear abnormalities and varying types and severity of hearing loss, despite the fact that the standard description of TBOM has been multiple tympanic membrane perforations in a patient with painless ear discharge and disproportionate sensorineural hearing loss. (12-15)

In our current study also, there were a wide variety of presentations like refractory ear discharge, reduced hearing polyp with granulation tissue, mastoiditis. Typical multiple perforations in tympanic membrane were found in only one patient.

Laryngeal TB was found in 5 patients with hoarseness of voice as the most common presentation. In a study conducted by Apurva Raina et al laryngeal TB comprised of 15% of all cases.

In our study, tubercular deep neck space abscess is the second most common manifestation comprising of 8% of total cases. Apurva Raina et al also found in their study that tubercular deep space neck abscess is the 2nd most common manifestation with 20% of total cases. (16)

CONCLUSION:

Extrapulmonary tuberculosis especially in ENT, Head and Neck region is common in a developing country like India where burden of TB is high. A high index of suspicion is required. Tuberculosis should always be kept in mind as a differential diagnosis in chronic patients who are not responding to routine treatment. CBNAAT is very effective in diagnosing tuberculosis and ATT is very effective treatment protocol.

Contribution Of Authors :

1. All authors have contributed.
2. The article is original with the authors and does not infringe

any copy right or violate any other right of any third party.

3. The article has not been published (whole or in part) elsewhere in any form, except as provided herein.

4. All authors have reviewed the final version of the above manuscript and approved it for publication.

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