

CASE REPORT

TUBERCULOUS INFECTION IN NECK- STILL A HEALTH PROBLEM

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ABSTRACT: INTRODUCTION: The proportion of extra-pulmonary presentation of tuberculosis is on the rise in comparison to pulmonary tuberculosis. Neck is the commonest extra-pulmonary site of tuberculosis in our country. Absence of typical features of tuberculosis makes its detection difficult in the neck. Association of tuberculosis and HIV has been documented. Delayed diagnosis may be prognostically and epidemiologically disastrous. **MATERIALS AND METHODS:** A two years' prospective study from 2011-2013, was done in the Dept. of ENT of Bankura Sammilani Medical College and Hospital using conventional investigative procedures to review the different presentations of tuberculosis in the neck, to assess its incidence and to identify its association with HIV, if any. **RESULTS:** A total of 314 patients with suspected tubercular lesions in the neck were screened and 72 (Male=43, Female=29) of them were confirmed positive for tuberculosis. Cervical lymphadenitis was found to be the commonest tubercular affection in the neck followed by tubercular laryngitis and deep neck abscess. Coexistent pulmonary tuberculosis was common only with laryngeal tuberculosis. HIV screening was negative for all the patients in this series. **CONCLUSION:** Absence of the typical clinical features of tuberculosis, absence of the history of tubercular affections elsewhere in the body and varied clinical presentation make identification of tuberculosis difficult in the neck. Fine needle aspiration cytology (FNAC) is a sensitive, specific and cost effective tool for detection of neck tuberculosis. Histopathology is confirmatory. A battery of tests is often required to arrive at a diagnosis. Awareness and a high index of suspicion are required for the diagnosis of tubercular lesions in the neck.

KEYWORDS: Tuberculosis, Lymphadenopathy, Laryngitis, Abscess, Retropharyngeal, Scrofuloderma, FNAC, PCR, AFB.

INTRODUCTION: Tuberculosis is a chronic granulomatous infection caused by Mycobacterium tuberculosis. Seventy five percent of the tuberculosis in developing countries is in economically productive age between 15-50 years¹. Incidence of pulmonary tuberculosis is declining but the proportion of extra pulmonary tuberculosis is on the rise.²

Lymphadenitis is the commonest extra-pulmonary involvement of tuberculosis and cervical lymph node is the commonest site. In India and other developing countries tubercular lymphadenitis continues to be the most common form of extra pulmonary tuberculosis and accounts for 35% of cases.³ Tuberculosis can also affect other structures of the neck to produce a variety of clinical features.

The diagnosis of extra-pulmonary tuberculosis remains difficult due to its varied clinical features at presentation. No single diagnostic tool may be sufficient to clinch the diagnosis. Delay in the diagnosis is associated with unfavorable prognostic and epidemiological consequences. The increased association of pulmonary tuberculosis with HIV is being discussed in literature.

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The study was conducted to review the different presentations of tuberculosis in the neck, to assess its incidence and to identify its association with HIV, if any.

A total of 72 cases of tuberculosis affecting the neck were discussed in this article with their diagnostic dilemma and diagnostic work-up.

MATERIALS AND METHODS: 236 cases (Male=187, Female=49) of cervical lymphadenopathy, 60 suspected laryngeal tuberculosis (Male=48, Female=12), 9 cases neck abscess with features of necrotizing fasciitis (Male=6, Female=3) and 7 cases of retropharyngeal abscess (Male=7, Female=0), who presented to ENT Dept. in Bankura Sammilani Medical College and Hospital were studied over a period of two years from 2011 to 2013. 2 cases of scrofuloderma (Male=1, Female=1) were also included in the study. A thorough clinical examination and battery of investigations were undertaken. FNAC constituted the main diagnostic tool with positive yield almost 90%. TB PCR was done in 8 cases (2 cervical lymphadenitis, 3 laryngitis, 2 retropharyngeal abscess and 1 neck abscess) with sensitivity 60%. Fibre-optic laryngoscopy was done to assess the extent of the disease and laryngeal airway.

CT scan and USG of the affected area were performed when required. Chest X-ray, examination of sputum for AFB, Mantoux test and HIV screening were also done in all patients. Pus from abscesses or discharging sinuses was stained with ZN stain. Direct laryngoscopy and hypopharyngoscopy with biopsy were performed in patients with abnormal endoscopic findings. Although medical treatment with ATT formed the mainstay of therapy, surgical management was reserved for selected refractory cases in the form of excision of the lymph nodes or the sinus tract. Abscesses, whenever detected, were either aspirated with wide-bore needle or drained surgically.

RESULTS AND OBSERVATIONS: 61 cases (Male=48, Female=13) out of 236 cervical lymphadenitis had lesions of tubercular origin (Fig.1). The commonest presenting feature was unilateral, matted, painless lymphadenopathy (Table I), in male patients, aged between 8-30 years (Table II) with no constitutional symptoms. 96.7% of the affected lymph nodes (58/60) were found in the posterior triangle (Table I). Abscess formation/ caseation were noted clinically on palpation in 9 cases. 2 patients presented with non-healing ulcers on the overlying skin with discharge (Fig. 2). Only 4.91% cases of tubercular lymphadenitis had associated pulmonary tuberculosis (Table III) and only 1 case turned out to be sputum-positive.

Sixty (60) cases were screened for suspected laryngeal tuberculosis and 5 (Male=4, Female=1) of them turned out to be positive. Out of 5 cases, 3 cases (60%) had associated pulmonary tuberculosis (Table III) and all three of them were sputum-positive. The cases of laryngeal tuberculosis presented between 25-50 years of age (Table II). All of them had hoarseness on presentation. 3 of them also complained of dysphagia. Fibre optic laryngoscopy revealed unilateral congestion of vocal cord (1/5), asymmetric supraglottic oedema (2/5) (Fig. 3), ulceration of the vocal cord (1/5) or ulceroproliferative growth of the ventricular fold (1/5). Unilateral vocal cord palsies secondary to pulmonary tuberculosis were not included in this study as they were secondary to affection of the recurrent laryngeal nerve outside the neck.

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Aspirates of FNAC, discharges from sinuses/ ulcers and pus drained from abscesses/ suppurative lymphadenitis were subjected to ZN stain. 9 of the aspirates from the lymph nodes were positive for AFB. Pus from abscesses or suppurated lymph nodes never showed any AFB and on culture, showed no growth of organisms. On the other hand, discharges from sinuses or smears from ulcerated lesions showed presence of AFB in 3 of 4 such cases. Granulation tissue from the wall of the abscesses when subjected to HPE, showed features of specific granuloma.

All the patients in this series were screened negative for HIV affection.

This case series contains 61 tubercular lymphadenitis (Figs. 1&2), 5 laryngitis (Fig. 3), 1 multiple discharging sinuses in the neck (fig. 4), 2 scrofuloderma (Fig.5), 1 case of tubercular neck abscess mimicking necrotizing fascitis (Fig.6) and 2 cases of tubercular retropharyngeal abscess (Fig.7). Out of the 72 cases of neck tuberculosis, 63 cases presented with neck swelling, 3 cases with discharging sinuses/ulcer in neck, 5 cases with hoarseness and 5 cases complained of dysphagia (Table IV). Tubercular deep neck space abscess mimicked necrotizing fascitis and 2 cases presented with retropharyngeal abscess. The diagnoses of different tubercular affections in the neck are summarized in Fig.8 and Table V.

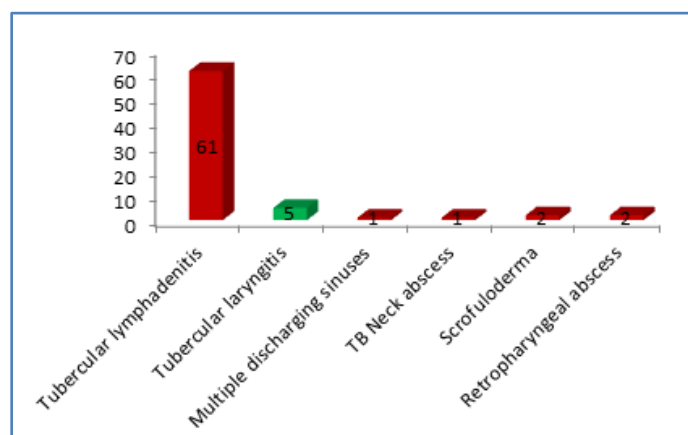


Fig. 1: Distribution of cases (n=72)

| Presenting complaints | Frequency | Total No. | Percentage |
|----------------------------------|---|-----------|------------|
| Neck swelling | Neck nodes 61 Neck abscess 1 Scrofuloderma 1 | 63 | 87.5 |
| Hoarseness | Laryngitis 5 | 5 | 6.94 |
| Skin lesions/ sinuses/ Ulcers | Multiple sinuses 1 Scrofuloderma 2 Ulceration of skin over infected neck nodes 2 | 5 | 6.94 |
| Dysphagia | Retropharyngeal abscess 2 Laryngitis 3 | 5 | 6.94 |

Table I: Presenting complaints (n=72)

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| Diagnosis | No. of cases |
|--|--------------|
| Tubercular cervical lymphadenitis with/without ulceration of overlying skin) | 61 |
| Tubercular laryngitis | 5 |
| Multiple discharging sinuses in neck | 1 |
| Scrofuloderma | 2 |
| Tubercular neck abscess mimicking necrotizing fasciitis | 1 |
| Tubercular Retropharyngeal abscess | 2 |

Table II: Diagnosis (n=72)

| Association with pulmonary tuberculosis | Frequency |
|---|-----------|
| Tubercular lymphadenitis | 3/61 |
| Tubercular laryngitis | 3/5 |

Table III: Association with pulmonary tuberculosis

| Lymph node (LN) distribution | Frequency | Percentage |
|-------------------------------|-----------|------------|
| Single LN, Jugulodigastric | 2/61 | 3.28 |
| Posterior triangle, matted LN | 45/61 | 73.77 |
| Posterior triangle, single LN | 14/61 | 22.95 |

Table IV: Lymph node distribution

| Age distribution | Years |
|--------------------------|-------|
| Tubercular lymphadenitis | 8-30 |
| Tubercular laryngitis | 25-50 |

Table V: Age distribution



Fig. 2: Koch's cervical lymph node



Fig. 3: Tuberculous discharging sinuses

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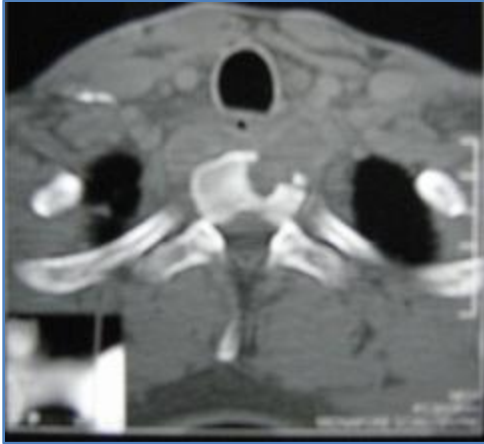


Fig. 4: Tubercular retropharyngeal abscess with pott's spine

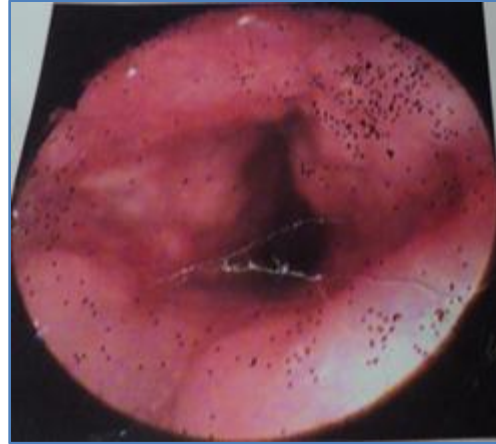


Fig. 5: Tubercular laryngitis: Supraglottic oedema

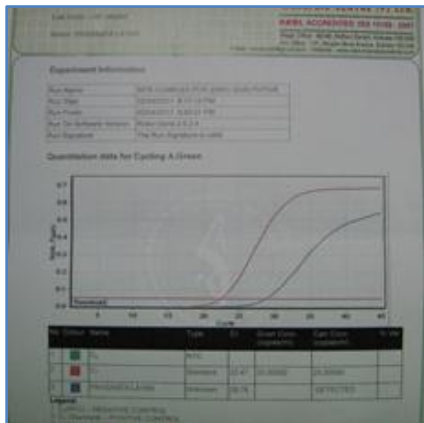


Fig. 6: TB PCR



Fig. 7: Tubercular abscess mimicking necrotizing fasciitis



Fig. 8: Tubercular lymphadenitis with ulceration



Fig. 9: Scrofuloderma

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DISCUSSION: Tuberculosis is a chronic granulomatous infection common in developing countries. Tuberculosis in the head and neck presents with a variety of clinical features and poses a diagnostic challenge. It indeed may sometimes go unrecognized. Delay in the treatment is potentially lethal and also an epidemiological threat.

In our study we have found that tubercular lymphadenitis is more common in male patients (M=35, F=26) in contrast to K. Akbar Khan et al.⁴ where they observed that tubercular lymphadenitis was more common in female.

In India and other developing countries tubercular lymphadenitis continues to be the most common form of extrapulmonary tuberculosis and accounts for 35% of cases.³ Tuberculous involvement of cervical lymph node was also the commonest site in our study and accounted for 84.7% of the cases of the series. It may present with a single painless swelling or multiple matted swelling and sometimes with sinus formation and mostly located in the posterior triangle of neck. There is a history of tuberculous contact in 21.2% and tubercular infection in 16.1% of cases.⁵ In 10% of cases there is sinus formation.^{5,6}

The commonest presentation was matted, non-tender, posterior triangle lymph nodes (Table II) with no constitutional symptoms. Our study corroborate with the observations of Kanlikama et al.⁵ and Penfold CN, Revington PJ.⁷

Tubercular laryngitis patients commonly presents with hoarseness.⁸ It was a common complication of advanced pulmonary tuberculosis in pre-antibiotic era. With the introduction of antitubercular therapy (ATT) tubercular laryngitis has diminished significantly. Tubercular laryngitis is more common in patients with pulmonary tubercular defaulters, relapse cases and sputum positive cases. 60% of the patients of laryngeal tuberculosis in this series had associated sputum-positive pulmonary tuberculosis. The same results were obtained by Y vette et al.⁹

Tuberculosis has also become common in patients with HIV. According to Antoni et al,¹⁰ laryngeal tuberculosis is more common in immunocompromised patients but in our study there was no coexisting HIV infection among the tuberculous patients.

Patients with cough, hoarseness and fever for more than 2 weeks should be suspected for tubercular laryngitis. Varshney and Hassan,¹¹ in 1993 in a clinicopathological study of 200 laryngeal biopsy presented with hoarseness reported that 65% were inflammatory, out of which 40% tubercular. Agarwal and Bais¹² observed that the greatest incidence of laryngeal tuberculosis is in young adults between 20-30 years of age. In our study, laryngeal tuberculosis presented between 25 and 50 years of age. Laryngeal tuberculosis is common in male patients (M: F=4:1) in our study which is well corroborated with Y vette et al.⁹

Interarytenoid area is thought to be the commonest site (Kakar PK et al.)¹³ but we have found that the ventricular bands can be equally affected as are the vocal cords anywhere along their length. Laryngeal tuberculosis on imaging appears as bilateral diffuse thickening with or without focal mass. Destruction of laryngeal cartilage is rarely seen.¹⁴

Deep neck space abscess was the second most common presentation according to Kamath Pandurang et al.¹⁵ But in our study larynx was the second common site in the neck to be affected by tuberculosis. Our observation matched with Choudhury et al.¹⁶ We had only three cases of deep neck space abscess. Such abscesses pose diagnostic difficulties, especially in the absence of any history or evidence of tuberculosis elsewhere in the body.

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Reaccumulation of pus, failure to respond to standard antibiotic regime, bone erosion, sterile culture report may suggest a tubercular aetiology with additional clue if there is lymphocytosis, raised ESR or a positive Mantoux test. AFBs are rarely present in the pus drained from neck space abscesses. Histopathological examination of granulation tissue from the abscess wall was more helpful in the diagnosis of specific granuloma. PCR for detection of MTB complex (DNA) is a costly investigation and sensitivity is about 60% but may be considered in selective cases (Fig. 6).

Fine needle aspiration cytology (FNAC)¹⁷ is the first line investigation for neck swelling and is sensitive, specific and cost effective.¹⁸ In our study FNAC could diagnose 90% of patients with tubercular lymphadenitis. In rest of the cases report came out to be reactive lymphadenitis. In those cases a course of antibiotic was prescribed for a period of two weeks. Surgical excision was planned for non-responders. Histopathological report was suggestive of tuberculosis. So for this reason we agree that histopathological examination is more reliable as observed by Maharajan et al.¹⁹

Ultrasonography gives satisfactory information about the size, number and morphology of the lymph node. It can also detect matting and suppuration. CT scan can delineate the exact location and extent of lesion. In early stages lymph nodes appear well defined, enlarged with homogenous contrast enhancement. Later these become matted with central low attenuation (Vaid S et al.).²⁰ High index of suspicion and imaging characteristic are essential for the diagnosis of tubercular lesions in head and neck region.

CONCLUSION: Extra-pulmonary Tuberculosis is still very common. Tubercular lesions in the neck present with diverse clinical features. The absence of typical symptoms of tuberculosis makes their diagnosis difficult. Cervical lymph nodes are the commonest site for extrapulmonary tuberculosis. FNAC is a good, cheap and reliable diagnostic tool for the diagnosis of tubercular lymphadenitis. Any atypical finding in fibre optic laryngoscopy in a patient with cough for more than two weeks warrants investigations for exclusion of tuberculosis. Tubercular laryngitis has most often been found to have associated pulmonary tuberculosis.

Scrofuloderma comes with typical clinical appearance. Discharging sinuses and indolent ulcers readily showed presence of acid-fast bacilli on smears. Tuberculosis should always be excluded in deep neck abscesses and a battery of investigations is usually required to clinch the diagnosis. No association with HIV could be established in this series. Awareness and a high index of suspicion are keys to the successful management of the tubercular affections of the neck.

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