DOI: https://doi.org/10.53350/pjmhs2023173776

ORIGINAL ARTICLE

ENT Manifestations of Tuberculosis: An Important Aspect of ENT Practice

UMAIR HAFEEZ[1], MUHAMMAD NADEEM[2], AYESHA SHAFI[3], AYSHA NAUMAN[4], ZAFAR IQBAL[5], MUHAMMAD ASHRAF[6]
[1]Registrar, Department of ENT, University Hospital Waterford, Ireland
[2]Associate Professor ENT, M. Islam Medical & Dental College Gujranwala
[3,4]Assistant Professor ENT, M. Islam Medical & Dental College Gujranwala
[5]Professor of ENT, Azra Naheed Medical College, Lahore
[6]Assistant Professor ENT, Azra Naheed Medical College, Lahore
Correspondence to: Umair Hafeez, Email: Ummairhafeezsheikh@gmail.com

ABSTRACT

Background: Extra pulmonary tuberculosis is the type of TB that affects organs other than the lungs. Cervical lymphadenopathy, acute otitis media, laryngitis, pharyngitis, and nasal TB are the most common ENT presentations.

Objective: The aim of the study was to explore the ENT manifestations of tuberculosis.

Methodology: The current study was conducted at the Department of ENT, M. Islam Teaching Hospital Gujranwala from 1st February 2022 to 31st July 2022. A total of 197 individuals who visited the department's outpatient clinic were checked for possible ENT symptoms of tuberculosis. To determine the degree of involvement of the ear, nose, and throat, a thorough ENT history was taken from each patient. A radiological evaluation of the cervical spine, soft tissue neck, and Schuler's view X-ray for mastoid cysts were performed, direct laryngoscopy, diagnostic nasal endoscopy, and otoendoscopy were carried out. A fine needle aspiration cytology (FNAC) and ultrasound neck examination were conducted. USG and CT were used for diagnosing the deep neck space abscess. The collected data was input into spreadsheets and subjected to analysis using Microsoft Excel 2010 and chi-square analysis was employed. P values that were statistically significant were those that were less than 0.05.

Results: Out of 197 tuberculosis patients only 124(63%) individuals diagnosed with ENT manifestations of TB**.** Out of which male were 71(57.25%) and female were 53 (42.74%). Majority of them of them were in the 36–60 age range 70(56.45%). In the Ear, nose and throat region, TB of lymphadenopathy has been identified to be the most prevalent lesion 102(82.25%). The most typical manifestations were shown to be fever 54 (43.54%). alcohol consumption and smoking were the risk factors. 66 percent of the patients did not have any risk factors. There was no correlation seen between smoking or alcohol and any particular TB lesions. Pulmonary tuberculosis was the most prevalent co-morbidity20.9%) while 79(63.7%) of the participants showing no co-existing disease**.**

Conclusion: The percentage of extra pulmonary TB in the current study was 63%. The most typical presentation in the head and neck area remains TB lymphadenitis

Keywords: ENT; Manifestations: Tuberculosis

INTRODUCTION

Mycobacterium tuberculosis is the causative agent of tuberculosis (TB), a chronic, granulomatous, infectious, and communicable disease.[1] Although it primarily affects the lungs, tuberculosis can also impact various other organs in the body. "Extra pulmonary tuberculosis" is the name for tuberculosis that affects organs other than the lungs. Despite the fact that the related bacterium was identified over a century ago and that very effective drugs are now available for both prevention and treatment, tuberculosis continues to be a global public health concern. Estimates calculate the global number of cases of infectious TB at 15 and 20 million. An estimated 8.6 million persons worldwide contracted TB in 2012, and 1.3 million of those cases resulted in death.[2] 7.25 million new cases of the disease are reported each year, which maintains the source of infection.[3] Fifteen percent of incident TB cases reported worldwide are extra pulmonary tuberculosis (EPTB). Patients with extra pulmonary signs vary in percentage in the WHO Western Pacific area its rate is 8 percent while in South East Asia it is 17%.[4] All of the body's organ systems are affected by the various extra pulmonary symptoms of tuberculosis. The ages, ethnicity or genders, and location of origin are found to have significant variances in susceptibility to various locations of EPTB.[5] Cervical lymphadenopathy, acute otitis media, laryngitis, pharyngitis, and nasal TB are the most common ear, nose, and throat presentations of tuberculosis's extra pulmonary symptoms.[6] The goal of the current study was to evaluate the various ear, nose, and throat symptoms of TB in patients undergoing treatment at a tertiary care hospital's outpatient department.

METHODOLOGY

The current study was conducted at the Department of ENT, M. Islam Teaching Hospital Gujranwala from 1st February 2022 to 31st July 2022. The study employed a randomized sample strategy for selecting the participants. A total of 197 individuals who visited the department's outpatient clinic were checked for possible ENT symptoms of tuberculosis. In which only 124 had been diagnosed with extra pulmonary tuberculosis (TB) in the ear, nose, and throat area, or with head and neck lesions, were included in the study. These patients belonged to age groups 11 years and older. The research excluded patients who were less than 11 years old, had an HIV diagnosis, or were using an immunosuppressive medication. To determine the degree of involvement of the ear, nose, and throat, a thorough ENT history was taken from each patient. The following symptoms were considered severe and important: recurrent neck swellings, hemoptysis, weight loss, voice changes, chronic cough, and fever. Additionally, relevant family and previous TB history was obtained. A thorough, systemic, and general ENT examination was performed. Each person had their chest examined in posteroanterior (PA) view on an X-ray. A radiological evaluation of the cervical spine, soft tissue neck, and Schuler's view X-ray for mastoid cysts were performed. When necessary, endoscopic procedures such as direct laryngoscopy, diagnostic nasal endoscopy, and otoendoscopy were carried out. For everyone suspected neck swelling, a fine needle aspiration cytology (FNAC) and ultrasound neck examination were conducted. Laryngeal secretions, ear discharge, pus from discharging sinuses, culture, sensitivity, and AFB staining of the sputum were also investigated. If a direct laryngoscopic and lymph node biopsy was necessary for suspected laryngeal lesions, it was performed. All information was gathered, calculated and analyzed. The FNAC procedure was used for identification of TB lymphadenitits. The technique utilized to diagnose the laryngeal patients with TB was indirect laryngoscopy. USG and CT were used for diagnosing the deep neck space abscess.

Data analysis: The collected data was input into spreadsheets and subjected to analysis using Microsoft Excel 2010. To investigate the relationship between risk variables including smoking and the occurrence of lesions, chi-square analysis was employed. P values that were statistically significant were those that were less than 0.05. The information was displayed in tables & pie charts as percentages.

RESULTS

Out of 197 tuberculosis patients only 124(63%) individuals diagnosed with ENT manifestations of TB. Out of which male were 71(57.25%) and female were 53 (42.74%). Majority of them of them were in the 36–60 age range 70(56.45%).Distribution of demographic data are shown in table 1.In the Ear, nose and throat region, TB of lymphadenopathy has been identified to be the most prevalent lesion 102(82.25%) in cases of extra-pulmonary TB followed by TB of the larynx 9(7.25%), Inner ear TB 5(4.03%), retropharyngeal abscess, nasal Tuberculosis and sub-mandibular gland Tuberculosis as described in table 2. The most typical manifestations were shown to be fever 54 (43.54%) and neck swelling 44 (35.4%) as described in table 3.In accordance with the revised national TB control programme (RNTCP), the participants were put on category I anti-TB medication instantly and were scheduled to continue taking on it for 6 months. They were monitored on a monthly basis until the treatment was completed. By the time the therapy was over, the swelling had decreased in 56 cases. 66 percent of the patients did not have any risk factors. The percentage of the population that has risk factors including drinking alcohol and smoking is depicted in Figure 1. 66 percent of the patients did not have any risk factors. There was no correlation seen between smoking or alcohol and any particular TB lesions. It was shown that there was no significant association (p=0.34) between smoking and cervical lymphadenopathy. AIDS caused by HIV was also found in the individuals, although pulmonary tuberculosis was the most prevalent co-morbidity20.9%) while 79(63.7%) of the participants showing no co-existing disease (table 4). The age group of 36 to 60 years old, or the middle age group, was found to have the maximum number of cases, with a statistically significant association between the incidences of tubercular lymphadenopathy. However, there is no apparent and significant association between TB lesions and any other observed parameters.

Table 1: Distribution of demographic data n=124

Age in years	N (%)
11 to 35	38(30.64%)
36 to 60	70(56.45%)
Above 61	16(12.90%)
Sex	
Male	71(57.25%)
Female	53 (42.74%)

Table 2: The frequency of distinct head and neck tuberculosis lesions among participants n= 124

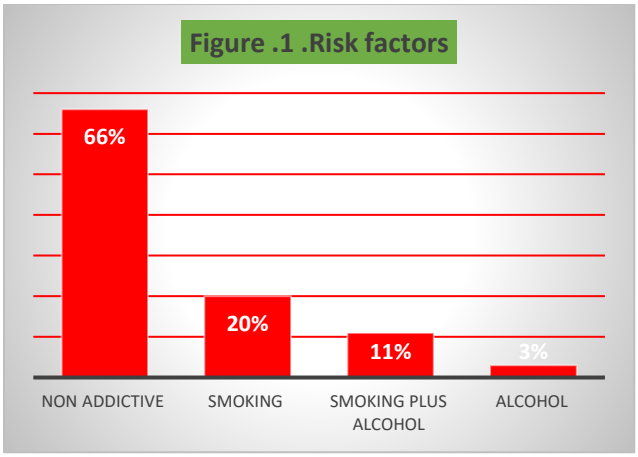
Type of lesion	N (%)
Cervical TB lymphadenopathy	102(82.25%)
TB of the larynx	9(7.25%)
Inner ear TB	5(4.03%)
TB retrophar yngeal abscess	4(3.22%)
Nose TB	2(1.6%)
TB of Sub-mandibular gland	2(1.6%)
Total	124(100%)

Table 3:Typical clinical manifestations of participants with lesions

Symptoms	N (%)
Pyrexia	54(43.54%)
Neck swelling	44(35.4%)
Exporated cough	10(8.06%)
Neck pain	8(6.45%)
Change in voice	7(5.64%)
Total	124(100%)

Table 4: Coexisting medical conditions in individuals N=124.

Coexisting medical diseases	N (%)
No	79(63.7%)
Pulmonary TB	26(20.9%)
AIDS	14(11.2%)
Pott's disease	9(7.2%)
Other extra pulmonary Tuberculosis	6(4.83%)
Total	124(100%)



DISCUSSION

Extra pulmonary TB is thought to account for 15 to 20 percent of cases of tuberculosis that affects people worldwide.[7] During the course of our study, 197 individuals with Tuberculosis were assessed, of which 124 (63%) were extra pulmonary cases. In the ENT area, 102 cases (82.25%) of extra pulmonary tuberculosis were related to cervical TB lymphadenitis in our study. The findings of our study are similar to the study conducted by Bayazit Ya et al.[8] The prevalence of inner ear infection was 5(4.03%) in the current study which support the results of previous studies.[9] In our research, we discovered that the patient with tubercular acute otitis media showed infranuclear facial palsy, recurrent ear drainage, and non-responsiveness to prescribed medications. In our research, we found that the individual with tubercular acute otitis media showed infranuclear facial palsy, recurrent ear drainage, and non-responsiveness to prescribed medications.

The TB lymphadenitits were identified using the FNAC method. Indirect laryngoscopy was the method used to diagnose the TB patients with laryngitis. The substantial neck space abscess was diagnosed using CT and USG. In the majority of individuals, FNAC examined the diagnosis, which was also supported by the studies conducted by Nalini et al. and Chakravorty et al.[10-11] In the current investigation 66% of the participants did not have any risk factors. Consistent with Yang et al's findings, the majority of patients (69%) lacked any risk factors.[12] in our study risk factors were alcohol consumption (3%) and smoking (20%). similarly smoking was identified by Gupta et al. as a risk factor.[13] The majority of patients 79(63.7%) had no co-existing conditions, with pulmonary tuberculosis 26(20.9%) being the most frequent comorbidity. Furthermore, no discernible and substantial correlation has been found between TB lesions and any other observable parameter. Additionally, it was shown that these lesions do not always result from either HIV or pulmonary tuberculosis. Research conducted by Pandurang and colleagues supports this conclusion.[14] An irregular, painful, superficial or deep ulcer that tends to enlarge slowly is the classic lesion of oral tuberculosis. It can be clinically confused for a simple traumatized ulcer or even cancer. It is commonly observed in traumatized regions. The organisms enter the mucosal tissue most commonly by a surface break or hematogenous channel transported by the sputum, deposit themselves in the sub mucosa, and then multiply and ulcerate the mucosa on top.[15] It is recommended that TB be included in the differential diagnosis when granulomatous inflammation is verified by tissue biopsy, particularly in nations where TB incidence is still greater. Moreover, higher sample sizes will be needed for research to prove that alcohol intoxication and smoking are risk factors. One potential disadvantage of the current study is the insufficient data to allow for a clear gender-wise analysis.

CONCLUSION

The percentage of extra pulmonary TB in the current study was 63%. The most typical presentation in the head and neck area remains TB lymphadenitis. It is recommended that TB be taken into consideration as a differential diagnosis when there is recurrent lymphadenopathy, prolonged ear discharge, hoarseness, nasal masses with blood-stained discharge, etc.

REFERENCES

1. Wang WC, Chen JY, Chen YK, Lin LM. 2009. Tuberculosis of head and neck: a review of 20 cases. Oral Surg Oral Med Pathol Oral Radiol Endo. 107(3): 381-86. PubMed
2. World Health Organization. Global tuberculosis report 2013. Google Scholar
3. Kumar PM, Kumar MS, Sarkar S, Ramasubramanian S, Anu KJ, Aravindh L. 2012; Oral manifestations in patients with pulmonary tuberculosis. Int J Biol Med Res. 3(2): 1565-67. Google Scholar
4. Global tuberculosis report 2017. Geneva: World Health Organization; 2017. ISBN 978-92-4-156551-6. Licence: CC BY-NCSA 3.0 IGO
5. Forssbohm M, Zwahlen M,Loddenkemper R, Rieder HL. 2008 Demographic characteristics of patients with extra pulmonary tuberculosis in Germany. *European Respiratory Journal*.'; 31(1), 99–105.
6. De Sousa RT, Briglia MFS, de Lima LCN, de Carvalho RS, Teixeira ML, Marcia AHR. 2010; Frequency of otorhinolaryngologies´ manifestations in patients with pulmonary tuberculosis. Int Arch Otorhinolaryngol. 14(2): 156-162
7. Sharma SK, Mohan A. (2004) Extra pulmonary tuberculosis. Indian J Med Res. Oct; 120(4): 316-53 2001. PubMed
8. Bayazit YA, Bayazit N, Namiduru 2004. Mycobacterial cervical lymphadenitis. ORL J Otorhinolaryngol Relat Spec.;66(5): 275-280. PubMed|
9. Adhikari P. (2009) Tuberculous otitis media: a review of literature. Internet J Otorhinolaryngol. 9(1): 7
10. Chakravorty S, Sen MK, Tyagi JS. (2005). Diagnosis of extra-pulmonary tuberculosis by smear, culture and PCR using universal sample processing technology. J Clin Microbiol.; 43(9):4357-62.
11. Nalini B, Vinayak S. (2006) Tuberculosis in ear, nose, and throat practice: its presentation and diagnosis. Am J Otolaryngol.; 27(1):39-45
12. Yang Z, Kong Y, Wilson F, Foxman B, Annadell H. (2004) Identification of Risk Factors for Extra pulmonary Tuberculosis. Clin Infect Dis38 (2):199-205
13. Gupta KB, Gupta R. (2003) Association between smoking and tuberculosis. Indian J Tuberc.; 50(1):5-8
14. Erabycu AE, Taymaz Z, Tuksavul F, Afrashi A, Guclu SZ. (2007). what happens when oral tuberculosis is not treated? Monaldi Arch Chest Dis.; 67(2):116-8.
15. Sharma S. 2020 ENT manifestations of tuberculosis: an important aspect of ENT practice. Pan African Med J.; 36:295.