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ORIGINAL ARTICLE

Ear Nose and Throat Manifestations of Tuberculosis: A Cross-Sectional Study at Tertiary Care Hospital

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ABSTRACT

Background: TB is a chronic, granulomatous, infectious, and communicable illness that is caused by the Mycobacterium tuberculosis. Tuberculosis can affect many other organs in the body, but it mostly affects the lungs.
Objective: The aim of the study was to determine the Ear Nose and Throat manifestation in patients of tuberculosis
Methodology: This study was carried out at the Department of ENT, Bolan Medical College / Complex Hospital, Quetta from December 2022 to May 2023 after taking approval from the research committee of the institute. A randomized sampling approach was used in the study to choose the participants. Out of 160 patients, only 100 individuals who had been diagnosed with head and neck lesions or extrapulmonary tuberculosis (TB) in the ENT region were included in the research. There was a comprehensive, systemic, and general ENT evaluation. An X-ray of each person's chest was taken in posteroanterior (PA) view. Endoscopic techniques such otoendoscopy, diagnostic nasal endoscopy, and direct laryngoscopy were performed as needed. An ultrasonography neck examination and fine needle aspiration cytology (FNAC) were performed on all individuals who had suspected neck swelling. SPSS version 23 was used for data analysis.
Results: A total of 160 patients were enrolled in the current study. Only 100 (62.5%) of the 160 TB patients were found to have ENT symptoms. 60 (60%) of them were male, and 40 (40%) were female. In the area of the ENT, TB of lymphadenopathy has been shown to be the most common lesion 80 (80%) in extra-pulmonary TB patients. The most common symptoms were neck swelling 32 (32%), and fever 48 (48%). Even though pulmonary TB was the most common co-morbidity, 18 (18%) whereas 60 (60%) did not have any co-existing conditions.
Conclusion: Our study concluded that the extra pulmonary TB is a prevalent (63%) condition. TB lymphadenitis continues to be the most common manifestation in the head and neck region.
Keywords: Ear; Nose; Throat; Manifestations; Tuberculosis

INTRODUCTION

TB is a chronic, granulomatous, infectious, and communicable illness that is caused by the Mycobacterium tuberculosis[1]. Tuberculosis can affect many other organs in the body, but it mostly affects the lungs. The term "extra pulmonary tuberculosis" refers to tuberculosis that damages other organs. Even though the associated bacteria was discovered more than a century ago and there are now highly effective medications for both prevention and treatment, TB remains a major public health issue worldwide. Between 15 and 20 million cases of infectious TB are thought to exist worldwide. In 2012, there were an estimated 8.6 million TB cases globally, with 1.3 million of those cases leading to death[2]. Each year, 7.25 million new instances of the sickness are recorded, maintaining the source of infection[3]. Extrapulmonary TB (EPTB) accounts for 15% of incident TB cases reported globally. Extrapulmonary symptom prevalence varies by geography, with a frequency of 17% in South East Asia and 8% in the World Health Organization Western Pacific area[4]. The many extra-pulmonary symptoms of TB impact every organ system in the body. There are notable differences in susceptibility to different areas of EPTB based on age, race or gender, and place of origin[5]. In the ear, nose, and throat, the most prevalent extrapulmonary symptoms of tuberculosis are cervical lymphadenopathy, acute otitis media, laryngitis, pharyngitis, and nasal TB[6]. Our study was done with the aim to determine the various ENT symptoms of TB in patients visiting the tertiary care hospital.

MATERIALS AND METHODS

Our study was cross-sectional study conducted at the ENT Department, Bolan Medical College / Complex Hospital, Quetta from December 2022 to May 2023 after taking approval from the research committee of the institute. A randomized sampling approach was used in the study to choose the participants. Totally 160 patients who came to the outpatient clinic were examined for potential TB ENT manifestation. Only 100 individuals who had been diagnosed with head and neck lesions or extrapulmonary tuberculosis (TB) in the ENT region were included in the research. The age range of these individuals was 11 years and higher. Patients under the age of eleven or those on immunosuppressive drugs were not included in the study. Each patient had a comprehensive ENT history to ascertain the extent of involvement of the throat, nose, and ears. Frequent neck swellings, weight loss, hemoptysis, fever, persistent cough, and voice changes were all deemed serious and significant symptoms. Relevant family history and prior TB history were also acquired. There was a comprehensive, systemic, and general ENT evaluation. An X-ray of each person's chest was taken in posteroanterior (PA) view. Endoscopic techniques such otoendoscopy, diagnostic nasal endoscopy, and direct laryngoscopy were performed as needed. An ultrasonography neck examination and fine needle aspiration cytology (FNAC) were performed on all individuals who had suspected neck edema. Additionally examined were laryngeal secretions, ear discharge, pus from discharging sinuses, sensitivity, culture, and AFB staining of the sputum. For suspected laryngeal lesions, a direct laryngoscopic and lymph node biopsy was carried out if required. Each component of information was collected, computed, and examined. Spreadsheets were used to enter the gathered data, and SPSS version 23 was used for analysis. Chi-square analysis was used to examine the relationship between risk factors, such as smoking, and the development of lesions.

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RESULTS

A total of 160 patients were enrolled in the current study. Only 100 (62.5%) of the 160 TB patients were found to have ENT symptoms. 60 (60%) of them were male, and 40 (40%) were female. (Figure 1) The majority of the participants (60%) were between the ages of 36 and 60. (Fig. 2) In the area of the ENT, TB of lymphadenopathy has been shown to be the most common lesion 80 (80%) in extra-pulmonary TB patients. This is followed by TB of the larynx 6 (6%), inner ear TB 5 (5%) (Fig. 3). The most common symptoms were neck swelling 32 (32%), and fever 48 (48%). (Fig. 4). There were 60 patients (60%) who had no risk factors. Smoking and alcohol consumption are risk factors for a certain percentage of the population. Alcohol and smoking did not

appear to be associated with any specific TB lesions. It was demonstrated that smoking and cervical lymphadenopathy did not significantly correlate (p=0.91). (Table 1) Even though pulmonary TB was the most common co-morbidity, 18 (18%) whereas 60 (60%) did not have any co-existing conditions. (Figure 5)

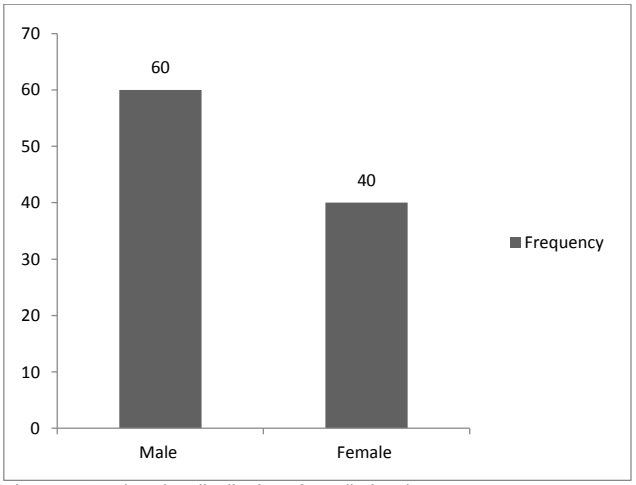

Figure 1: Gender wise distribution of enrolled patients

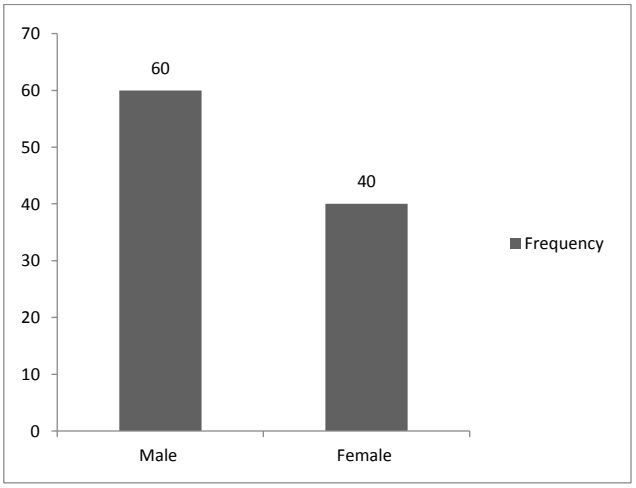

Figure 2: Age wise distribution of enrolled patients

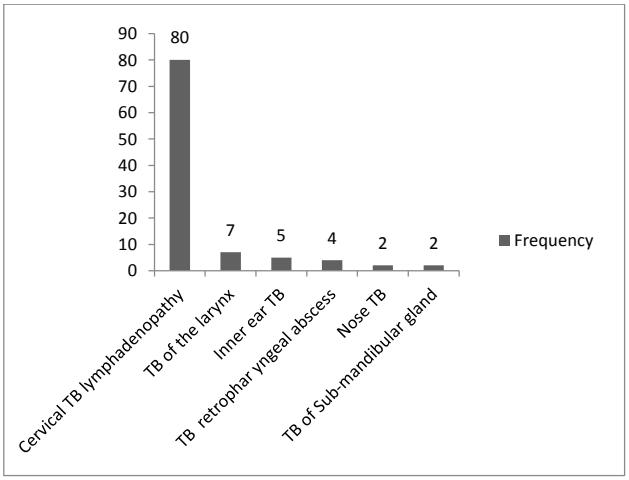

Figure 3: Frequency of distinct head and neck tuberculosis lesions in the enrolled patients

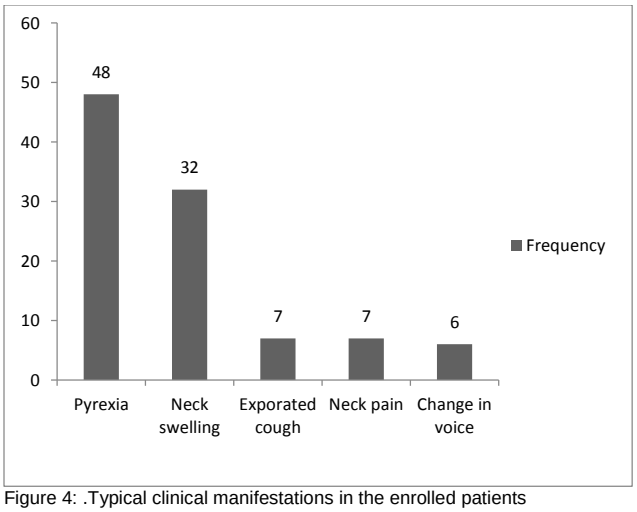

Figure 4: .Typical clinical manifestations in the enrolled patients

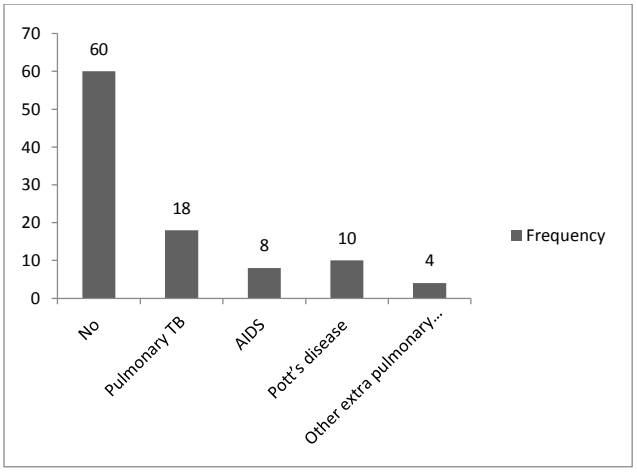

Figure 5: Coexisting medical conditions in the enrolled patients

Table 1: Risk factors associated with the enrolled patients

Parameter	Frequency (%)
Non-addictive	60 (60%)
Smoking	25 (18%)
Smoking plus alcohol	10 (10%)
Alcohol	5 (%)

DISCUSSION

It is estimated that between 15 and 20 percent of tuberculosis cases that occur globally are extrapulmonary[7]. Of the 160 people with tuberculosis who were evaluated during our investigation, 100 (62.5%) were extrapulmonary cases. In our investigation, cervical TB lymphadenitis was linked to 80 (80%) of extrapulmonary TB cases in the ENT region. Our study's results are comparable to those of the Bayazit Ya et al. study[8]. The current study found that the frequency of inner ear infections was 5 (5%), which is consistent with the findings of earlier research[9]. The patient with tubercular acute otitis media in our study had recurrent ear drainage, infranuclear facial palsy, and non-responsiveness to recommended therapy. The FNAC technique was used to identify the TB lymphadenitits. Additionally, the investigations by Nalini et al. and Chakravorty et al.[10–11] validated the diagnosis, which was checked by FNAC in most persons. Sixty percent of the patients in the present study had no risk factors. Most of the patients (69%) had no risk factors, which is in line with the findings of Yang et al[12]. In our study, smoking (18%) and alcohol use (5%) were risk factors. Gupta et al. found that comparable smoking was a risk factor[13]. The most common comorbidity was pulmonary TB (18%),

while the majority of patients (60) had no co-existing diseases. Furthermore, it was demonstrated that pulmonary TB or HIV are not the exclusive causes of these lesions. This finding is supported by research done by Pandurang and associates[14]. The characteristic lesion of oral TB is an irregular, painful, superficial or deep ulcer that tends to expand slowly. Clinically, it may be mistaken for malignancy or a normal damaged ulcer. It is frequently seen in areas that have experienced trauma. Most frequently, the organisms enter the mucosal tissue by a hematogenous channel or surface break carried by the sputum, settle in the submucosa, and subsequently proliferate and ulcerate the mucosa above[15]. When granulomatous inflammation is confirmed by tissue biopsy, it is advised that TB be considered in the differential diagnosis, especially in countries where the incidence of TB is still higher. Furthermore, studies to demonstrate that smoking and alcohol intoxication are risk factors will require larger sample numbers. The lack of data to provide a precise gender-wise analysis is one possible drawback of the current investigation.

CONCLUSION

Our study concluded that the extra pulmonary TB is a prevalent (63%) condition. TB lymphadenitis continues to be the most common manifestation in the head and neck region. When recurrent lymphadenopathy, nasal masses with blood-stained discharge, hoarseness and persistent ear discharge are present, it is advised that TB be considered as a differential diagnosis.

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