

A Clinicopathological Study of Extrapulmonary Tuberculosis at a Tertiary Hospital, Narayana Medical College and Hospital, Nellore

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Abstract

Introduction: Tuberculosis is the most common health problem caused by Mycobacterium, a non-motile, non spore forming aerobic acid fast bacilli. It is of two types, pulmonary and extrapulmonary. Extrapulmonary tuberculosis is the isolated occurrence of tuberculosis in any part of the body other than lungs like lymph nodes, neck, bones and serous membranes. We have undertaken this study to evaluate the clinicomorphological features of extrapulmonary tuberculosis. *Materials and Methods:* A prospective study was done in the Department of Pathology, Narayana Medical College, Nellore, for 2 years from 2014 to 2016. Extrapulmonary tuberculosis were identified constituting 125 cases (11%) of the total cases. Clinical data was recorded and the biopsy specimens were processed in our department and the data was analysed. *Results:* Cervical lymph node was the most common site involved by extrapulmonary tuberculosis in our study. The most common age group involved was 20-30 years with loss of weight being the most common presenting feature in these cases. Most of the cases were negative for AFB in both sputum and culture. Histopathological examination which is the gold standard for diagnosis proved to be positive in 72% of the cases. *Conclusion:* Our study on extrapulmonary tuberculosis has been done to review the various clinico-morphological aspects of the disease. Cervical lymph nodes were the most common site involved, 60 cases (18.3%) followed next by the osteoarticular system, 19 cases (18.3%).

Keywords: Extrapulmonary; Lymph node; Tuberculosis.

Introduction

Tuberculosis is an ancient disease with protean manifestations. Though it is a relatively indolent disease, death occurs through rapid dissemination [1,2]. It remains a major public health problem and it is estimated that about 1/3rd of the world's population is infected with Mycobacterium tuberculosis [3,4]. The genus Mycobacterium consists of non-motile, non spore forming aerobic acid fast bacilli whose cell wall is lipophilic and resistant to common disinfectants [5]. Mycobacterium

tuberculosis complex consists of Mycobacterium tuberculosis, Mycobacterium bovis and Mycobacterium africanum. Species other than those of the complex are called non mycobacterium.

Tuberculosis infection can be pulmonary or extrapulmonary. Extrapulmonary tuberculosis is defined as the isolated occurrence of tuberculosis in any part of the body other than lungs [7]. Lymph nodes, neck, bones, serous membranes are the most common sites of extrapulmonary tuberculosis [8,9].

Materials and Methods

A prospective study was undertaken in the Department of Pathology, Narayana Medical College, Nellore, for a period of 2 years from 2014 to 2016. All the new cases of tuberculosis were identified out of which extrapulmonary tuberculosis constituted 125 cases accounting for 11% of the total cases.

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Inclusion Criteria

1. Newly confirmed cases of extrapulmonary tuberculosis.
2. Only HIV negative cases.

Exclusion Criteria

1. Pulmonary tuberculosis.
2. HIV positive cases.

The clinical data was collected and the relevant laboratory investigations were done for all the cases. The biopsy specimens were received in our department and were processed. Slides were reviewed and the data was analysed.

Results

All the cases in our study were analysed with regard to age and sex distribution, site of the lesion, clinical signs and symptoms and lastly investigations.

Both males and females were most commonly affected (Figure 1).

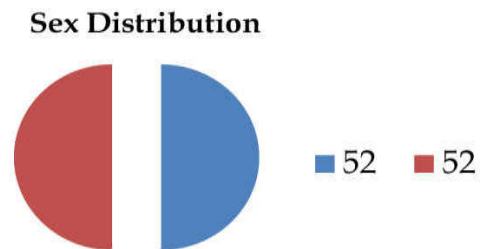


Fig. 1: Sex distribution

Table 1: Age distribution

Age Group	Number of Cases	% of Cases
10-20 years	06	5.8
20-30 years	28	26.9
30-40 years	20	19.3
40-50 years	16	15.3
50-60 years	16	15.3
60-70 years	06	5.8
70-80 years	06	5.8
80-90 years	06	5.8

Table 2: Clinical presentation in extra-pulmonary tuberculosis

Symptom	Number of Cases
Loss of weight	43
Cough	42
Fever	37
Pain	22
Dyspnoea	13
Haemoptysis	08
Dysphagia	01

Table 3: Sites of involvement by extrapulmonary tuberculosis

Site	Number of Cases	% of Cases
Lymph nodes	60	57.6
Osteoarticular	19	18.3
Genitourinary	12	11.5
Gastrointestinal tract	10	9.7
Mediastinum	01	0.9
Breast	01	0.9
Brain	01	0.9

The most common age group affected by extrapulmonary tuberculosis in our study was 20-30 years, 28 cases accounting for 26.9% of the total cases and next common age group involved was 30-40 years, 20 cases accounting for 19.3% of the total

cases (Table 1).

In our study the patients presented with a variety of clinical symptoms like loss of weight, cough, fever, pain, dyspnoea, hemoptysis and dysphagia. The

most common clinical presentation in our study was loss of weight, seen in 43 cases (Table 2).

In our study, the most common site involved was lymph nodes accounting for 57.6% of the total cases followed by osteoarticular region accounting for 18.3% of the total cases (Table 3).

Table 4: Investigations done in our study

Erythrocyte Sedimentation Rate			Chest X-ray		Sputum for AFB			Culture for AFB			
	Number	%	No	%	No	%	No	%			
Elevated	78	62.4	Normal	24	39.2	Positive	29	43.2	Positive	26	40.8
Normal	22	37.6	Abnormal	76	60.8	Negative	71	56.8	Negative	74	59.2

days in all the patients. AFB and culture was done. In majority of the cases, 71 cases (68.26%), sputum for AFB was negative and the culture was negative in majority of the cases, 74 cases (71.2%).

Histopathological examination was done and 72% of the cases (75 cases) were positive.

Discussion

The incidence of extrapulmonary tuberculosis varied from region to region. In our study, it constituted 11% of all the cases. In the study done by Nissaportin et al [10] and Noor Hayati et al [11], similar findings were seen. In the studies done by Dolberg et al and Fernandez et al, the reported figures were higher and this difference may be due to the variations in reporting of the cases to the hospital and other regional factors.

The sex distribution was 1:1 in our study with 52 males and 52 females. In the study done by Noor et al [11], the sex ratio was same as in our study. The sex ratio was 1:3 in the study done by Subhash Chandir et al [14] with a predominance of females.

The most common age group of the cases involved in our study was between 20 - 30 years. Findings were similar in the studies done by Nissaportin et al [10], Noor Hayati et al [11], and Subhash Chandir et al [14] with the mean age being around 32 years.

The most common site involved in extrapulmonary tuberculosis in our study was lymph nodes, constituting 57% of the cases followed next by osteoarticular region, constituting 18% of the total cases. The site of involvement was the same region in most of the other studies done by Nissaportin et al [10], Noor Hayati et al [11], Subhash Chandir et al [14] and Abdul rahman et al [15]. Central nervous system was the most common site involved in the study done by Mokhtar et al [16].

A battery of investigations were done starting from a basic ESR to tissue biopsy which is considered as the gold standard for the diagnosis.

Erythrocyte sedimentation rate was elevated in 78 cases, (75%) of the total cases. Chest X-ray showed normal finding in majority of the cases, 76 cases (73% with abnormalities detected only in 19 (18%) of the cases. Sputum was collected for three consecutive

Clinically, ESR was elevated in 75% and Chest X-ray revealed significant changes only in 19% of the total cases in our study. Sputum for AFB and culture were positive in 7% and 10% respectively among the total cases in our study. These findings were similar to those in the studies done by Nissaportin et al [10].

Tissue biopsy proved to be the gold standard and 72% of the total cases were positive in our study. Extensive areas of necrosis were seen along with granulomas composed of epithelioid cells, Langhan's type of giant cells and mature lymphocytes. 52% of the cases were positive in tissue biopsy in the study done by Nissaportin et al [10].

Summary

Extrapulmonary tuberculosis is an important clinical problem particularly in multidrug resistant TB cases. Early identification of these cases by clinical examination and investigations proves to be useful to assess the global burden of this rampant disease.

Conclusion

Patients presenting with loss of weight should thoroughly investigated for any evidence of tuberculosis infection as this was the most common presentation in our study. Younger age group (20-30 years) were the most common category involved by extrapulmonary tuberculosis in our study and the most common organ involved was lymph nodes.

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