

Study of Extra Pulmonary Tuberculosis with Special Reference to Cytological Diagnosis of Tuberculous Lymphadenitis at MIMER Medical College – Our Experience

SmitaPathak^a, R.S. Joshi^b, S.R.Joshi^c, Vaibhav Patil^d

^aProfessor , Dept of Pathology, MIMER Medical College , Talegaon Dabhade, Pune, Maharashtra, India

^bProfessor , Dept of Medicine, MIMER Medical College , Talegaon Dabhade, Pune, Maharashtra, India

^cProfessor & HOD , Dept of Pathology, MIMER Medical College , Talegaon Dabhade, Pune, Maharashtra, India

^dMD 3rd year resident , Dept of Pathology, MIMER Medical College , Talegaon Dabhade, Pune, Maharashtra, India

Corresponding Author: Dr. Smita Pathak

Abstract

BACKGROUND

Tuberculosis is the most important communicable disease in the world. About 80 % of world's cases of tuberculosis are found in developing countries. Pulmonary Tuberculosis is the most common presentation but Extra pulmonary TB is also an important clinical problem. Tuberculous lymphadenitis is the most common form of Extra pulmonary Tuberculosis. FNAC is a simple, less expensive, out patient diagnostic procedure used for the diagnosis of tuberculous lymphadenitis.

AIMS AND OBJECTIVES :

1. To study the spectrum of lesions of Extra pulmonary Tuberculosis in Department of Pathology.
2. To know the diagnostic utility of FNAC in tuberculous lymphadenitis.

MATERIALS AND METHODS :

The present study involved the patients coming to Department of Pathology for FNAC .

The study material also included surgical specimens received in Department of Pathology.

RESULTS:

In lesions of Extra pulmonary tuberculosis, tuberculosis of lymph nodes was found to be the most common followed by Genito-urinary Tuberculosis, & Musculoskeletal Tuberculosis.

CONCLUSION :

Lymph node is the most common site for Extra pulmonary Tuberculosis. FNAC is a simple, cost effective & has high diagnostic utility in diagnosing tuberculous lymphadenitis.

KEYWORDS: Extra pulmonary Tuberculosis, Tuberculous lymphadenitis

INTRODUCTION :

Tuberculosis is as old as mankind. The remains of ancient skeleton have been found which reveal the characteristic changes of tuberculous pathology indicating man was affected with disease in Neolithic period some 4000 years BC. Tuberculosis is the most important communicable disease in the world. About 80 % cases of tuberculosis are found in developing countries where the disease continues to exact a heavy toll in the form of mortality & heavy morbidity.¹

In July 2011, the revised estimated prevalence and incidence rate of all forms of Tuberculosis in India were 256 & 185 cases per lakh population respectively.² Pulmonary Tuberculosis is the most common presentation. Extra pulmonary TB is also an important clinical problem. The term Extra pulmonary Tuberculosis has been used to describe isolated occurrence of tuberculosis at body sites other than lung.³ Extra pulmonary Tuberculosis constituted 15.20% of all cases of Tuberculosis. In HIV positive patients Extra pulmonary Tuberculosis accounts for more than 50 % of all cases of Tuberculosis.⁴ In studies reported from India, Extra pulmonary Tuberculosis constituted 45-56% of all cases of Tuberculosis in patients with AIDS.³

FNAC is a simple, less expensive out patient diagnostic procedure used for the diagnosis of tuberculous lymphadenitis. FNAC has excellent sensitivity and specificity for the diagnosis of tuberculous lymphadenitis and is recommended to be used as the initial diagnostic test in suspected cases.⁵

AIMS AND OBJECTIVES :

1. To study the spectrum of lesions of Extra pulmonary Tuberculosis in Department of Pathology, MIMER Medical College Talegaon Dabhade during last five years (2008-2013).
2. To know the diagnostic utility of FNAC in tuberculous lymphadenitis.

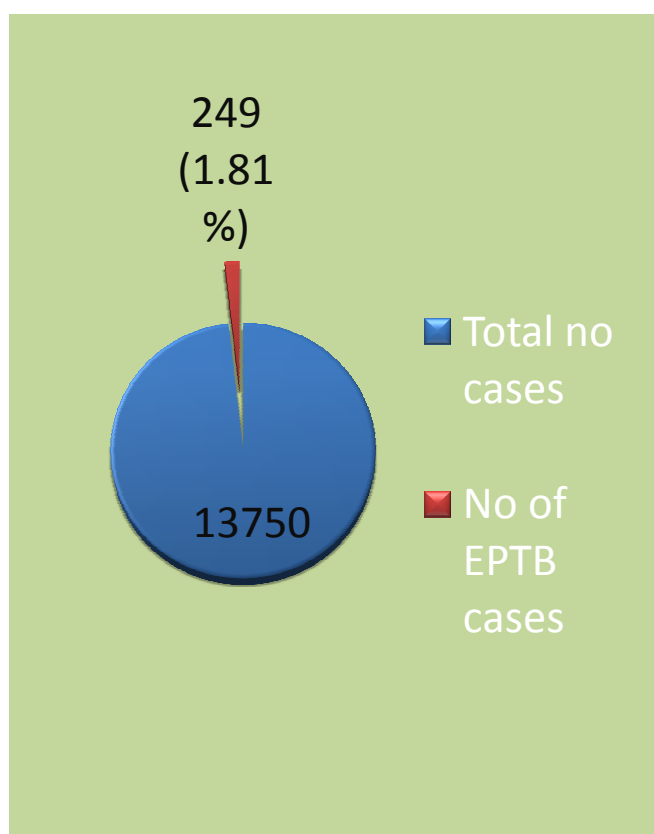
MATERIALS AND METHODS :

The present study involved the patients coming to Department of Pathology, MIMER Medical College Talegaon Dabhade for FNAC. History was taken in detail. Complete clinical examination of the patients was carried out. FNAC of the involved lymph node was done with all aseptic precaution. The smears were prepared and fixed in ether alcohol. The smears were stained by Papanicolaou and Leishman stain. The smears were

also stained by Ziehl Neelson acid fast stain. The smears were studied and cytological diagnosis was made.

The study material also included surgical specimens received in Department of Pathology MIMER Medical College Talegaon Dabhade from patients suspected to have Extra pulmonary tuberculosis. The specimens were subjected to routine tissue processing followed by H & E staining. Ziehl Neelson stain for acid fast bacilli was also done. The sections were studied and histopathological diagnosis was made.

RESULTS:



13750 specimens were received in the Department of Pathology during the period of 2008-2013 (including FNAC). Out of which 249 cases were diagnosed as Extra pulmonary tuberculosis constituting 1.81%.

Fig No1. Prevalence of EPTB at MIMER Medical College Talegaon Dabhade

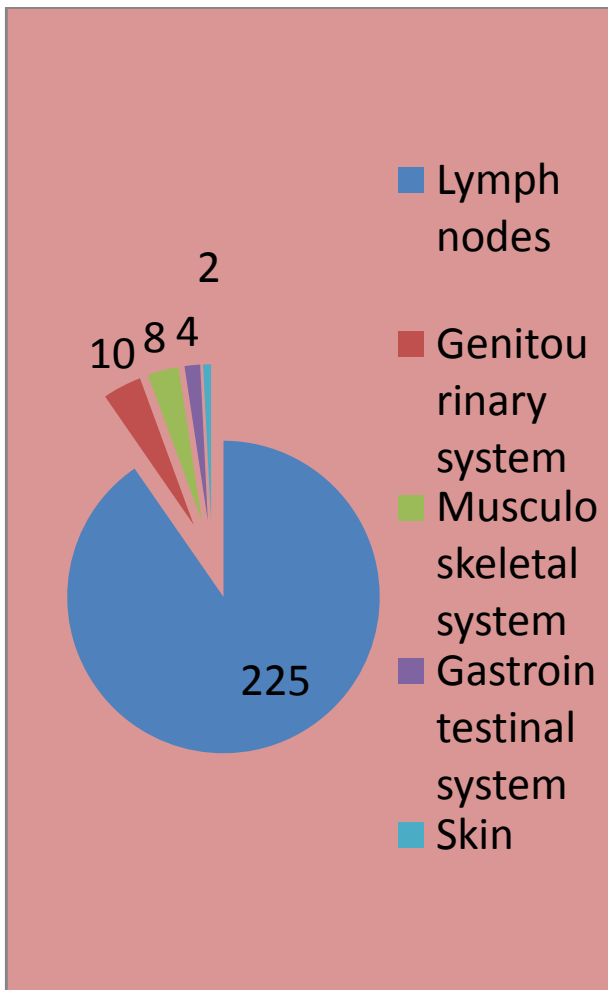


Fig No 2. Distribution of Extra pulmonary Tuberculosis by anatomic sites

Out of 249 cases of Extra pulmonary Tuberculosis, 225 cases were of tuberculous lymphadenitis constituting 90.36% of cases. Remaining cases included Genito urinary tuberculosis (4.01%), Musculoskeletal tuberculosis (3.20%), Gastrointestinal tuberculosis (1.60%) and Cutaneous tuberculosis (0.80%).

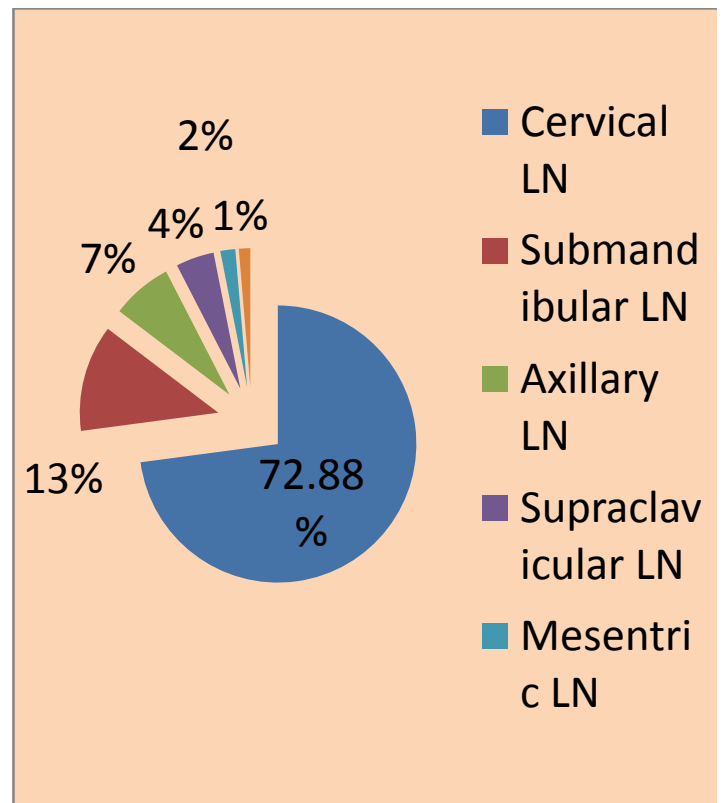


Fig No 3. Lymph node involvement in Extra pulmonary Tuberculosis

Out of 225 cases of tuberculous lymphadenitis, cervical lymph nodes were involved in 164 cases constituting 72.88% of cases. Remaining lymph nodes in descending order of frequency included submandibular (13%), Axillary (7%), supraclavicular (4%), Mesentric (2%) and Inguinal (1%) respectively.

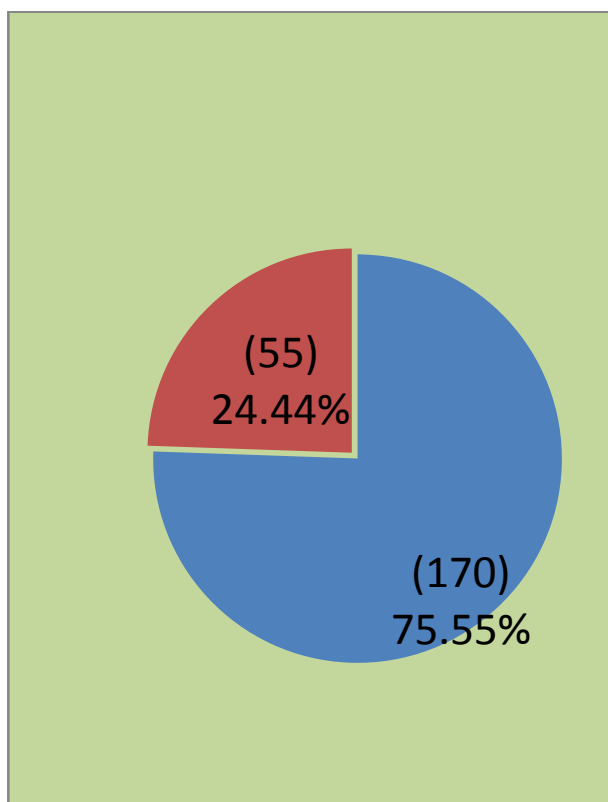


Fig No 4. Method used for diagnosis of tuberculous lymphadenitis

Out of 225 cases of tuberculous lymphadenitis 170 (75.55%) cases were diagnosed on FNAC where as 55 (24.44%) cases were diagnosed on histopathology.

Lymph node	Genitourinary System	Gastro intestinal System	Musculoskeletsl System	Skin
Cervical -164	Epididy-orchitis -06	Tb ileum - 03	Tb synovitis -02	Lupus Vulg. -01
Submandi-28	TB Endometritis -04	Peritineum- 01	Tb arthritis – 03	TVC - 01
Axillary-16			Psoas abscess-01	
Supraclavi-08				
Other- 09				
Total- 225	Total- 10	Total- 04	Total- 08	Total- 02
Percent 90.36%	Percent 4.01%	Percent 1.6%	Percent 3.21%	Percent 0.8%

Table No 1.- Distribution of Extra pulmonary Tuberculosis cases

DISCUSSION

Primarily considered to be a pulmonary disease Tuberculosis can affect almost any organ. The term Extra pulmonary Tuberculosis has been used to describe isolated

occurrence of tuberculosis at body sites other lung. The most common sites of Extra pulmonary Tuberculosis consist of lymphatic, genitourinary, bone & joints, & CNS involvement followed by peritoneal and other abdominal organ involvement.¹

Lymph node Tuberculosis: Historically ,lymph node tuberculosis has been called the King's evil referring to the divine benediction which was presumed to be the treatment for it.Peripheral lymph nodes are most often affected and cervical lymph node involvement is most common followed by axillary & inguinal lymph nodes^{1,3,4}.In present study also incidence of lymph node involvement was 90.36% of which cervical group of lymph nodes constituted majority of cases (72.88%).

A confident diagnosis of tuberculosis can be rendered on cytology when a combination of epitheloid cell granulomas and caseous necrosis with or without multinucleated giant cells is seen. However ,typical granulomas & caseation are less likely to be found in advanced HIV disease.⁵In present study 60 % cases showed caseation along with epitheloid cell granulomas (Fig No 5)

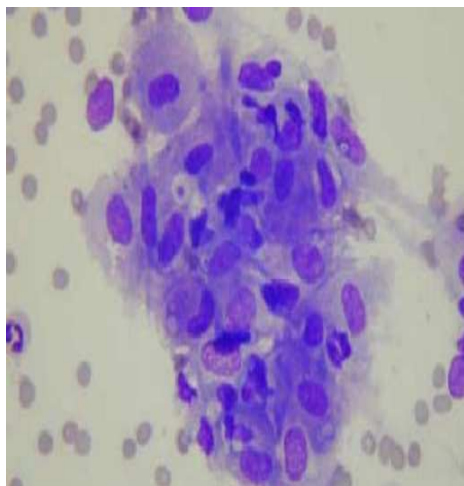


Fig No 5 FNAC smear of lymph node showing epitheloid cell granulomas (H& E X 400)

GenitourinaryTuberculosis:Genito urinary Tuberculosis accounts for approximately 1.2% of reported cases of Extra pulmonary Tuberculosis in India⁴.Males usually present with epididymo-orchitis. Fallopian tube is most commonly involved in females.⁶Female genital tract tuberculosis is important cause of infertility.⁵In present study the incidence was 4.01%.

Musculoskeletal Tuberculosis :Skeletal Tuberculosis accounts for approximately 8-10% of the reported cases of Extra pulmonary Tuberculosis in India¹.Commonly involved sites are spine,tibia& fibula^{1,4}.In present study the incidence was 3.21%.

Gastro intestinal Tuberculosis : Gastro intestinal Tuberculosis accounts for approximately 7.1 % of the reported cases of Extra pulmonary Tuberculosis in India⁴.Abdomen is the 4th most common site of involvement of Extra pulmonary Tuberculosis It includes tuberculosis of gastro intestinal tract, peritoneum, mesentry,

it's nodes, omentum, liver, spleen and pancreas.^{1,3,6}.In present study the incidence was 1.6%.

Cutaneous Tuberculosis : Cutaneous Tuberculosis accounts for approximately 1.5 % of the reported cases of Extra pulmonary Tuberculosis in India⁴.Lupus Vulgaris is the most common form of cutaneous tuberculosis seen in India followed by Tuberculous Verrucosa Cutis^{1,5}. In present study the incidence was 0.8%.

Site	Fraser et al ⁴	Present study
Lymph node	57.30%	90.36%
Genito urinary system	1.20%	4.01%
Musculoskeletal system	8.90%	3.21%
Gastrointestinal system	7.01%	1.60%
Skin	1.50%	0.80%

Table No 2. Comparison with study done by Fraser et al⁴

CONCLUSION:

- Tuberculous lymphadenitis is the most common form of Extra pulmonary Tuberculosis constituting 90.36% of which cervical group of LNs constituted majority of cases (72.88%).
- In 75.55% of cases the diagnosis of TB lymphadenitis was given on FNAC.
- FNAC is a simple, quick & cost effective procedure to diagnose tuberculous lymphadenitis.
- Hence it should be done in all cases presenting as lymphadenopathy.

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