

Scenario of Tubercular Lymphadenitis in a Tertiary Health Care Centre of Assam

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ABSTRACT

Introduction: Tubercular lymphadenitis is the most common extrapulmonary manifestation of tuberculosis. Clinical suspiciousness can help to arrive at the diagnosis. Fine needle aspiration cytology is usually done to make a definitive diagnosis. The present study was conducted to evaluate the scenario of tuberculosis among the cases of lymphadenopathy presenting within 1 year at a tertiary health care centre in the north east region of India.

Materials and Methods: The present prospective hospital based study was carried out on 586 consecutive cases attending the cytology section of the department of pathology, Assam Medical College, Dibrugarh from January'14 to December'14. After clinical examination consecutive superficial lymph nodes were aspirated and subjected to cytological evaluation. In all the cases alcohol fixed and air dried smears were subjected to cytological evaluation with hematoxylin and eosin, MGG and Ziehl neelsen (ZN) staining. Various clinical aspects and cytomorphological presentations were studied thereafter.

Results: Out of 586 cases studied 168 cases came out to be positive for acid fast bacilli on ZN staining, 94 cases were granulomatous lesion, 176 cases were found to be reactive and 148 were metastatic. Higher incidence has been seen in the age group of 11-30 years and among the female

population. Tuberculosis forms the 2nd most common etiology of lymphadenopathy cases preceded by reactive lymphadenitis. Only necrosis without epithelioid cell granuloma was the most common cytological picture.

Conclusion: The study concludes that tuberculosis forms one of the most common infectious diseases in rural areas of Assam.

Key Words: Assam, Tubercular lymphadenitis, Fine needle aspiration cytology, ZN stain, Acid fast bacilli.

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INTRODUCTION

Tuberculosis is a serious chronic pulmonary and systemic disease caused most often caused by Mycobacterium tuberculosis. The source of transmission is man with active tuberculosis. Lymphadenitis is the most frequent presentation of extrapulmonary Tuberculosis, usually occurring in the cervical region (Scrofula). In HIV positive cases have multifocal disease, systemic symptoms and either pulmonary or other organ involvement by active tuberculosis. It remains both diagnostic and therapeutic challenge in some cases. As it mimics other pathological processes and yields inconsistent findings.

The classic term Scrofula was derived from the latin word meaning glandular swelling. It was mentioned by Hippocrates (460- 377 BC) in his writings. The European Kings of the middle ages referred to it as the "King of the evil".

According to the WHO, nearly 8.7 million new cases and 1.4

million deaths worldwide every year. In India 2 million develop active disease and about half a million die with this disease. TB lymphadenitis is seen in 35% of extrapulmonary TB which constitutes 15 to 20 % of all cases. In HIV positive patients TB lymphadenitis account for 53 – 62%.

Cervical lymph nodes are the most common sites in 60% to 90% patients with or without involvement of other lymphoid tissue. Mostly seen in the second decade but the disease can affect any age while females are more prone. Racial and ethnic minorities, foreign born black and Asians more likely to suffer than the whites. The present study is undertaken to analyze the scenario of tuberculosis among the cases of lymphadenitis presenting in a tertiary health care centre. The aims and objective of the study is to evaluate the cytomorphology with acid fast stain as a valuable tool for diagnosing Tubercular lymphadenitis.

MATERIALS AND METHODS

Study Design: A hospital –based prospective study.

Place: Assam Medical College, Department of Pathology

Duration: 1 year

Inclusion criteria: Patients with clinical features consistent with tuberculosis, above the age group of one year were considered for the study.

Exclusion criteria: Reactive and metastatic lymphadenitis and children below 1 year of age were excluded from the study.

This study was carried out in the cytology section of the pathology department of Assam medical college Dibrugarh during the period from January to December, 2014.

The OPD and IPD patients attending the cytology section as advised by the clinicians in clinically suspected cases of TB (eg. With complaints like rise of temperature ,weight loss , positive contact history of tuberculosis ,enlarged solitary /multiple lymph nodes etc.) were considered for the study. A detailed clinical history of the patient was taken. The demographic data and medical history were taken from each patient including age, gender, socioeconomic status, presence of other risk factors,

contact history of tuberculosis etc. After a detailed clinical examination of the node they were aspirated using most preferably 25 G disposable needle. The area was disinfected prior to aspiration. The aspirated material was spread evenly on clean and grease free slide. In all the cases air dried and alcohol fixed smears were made and stained with MGG (air dried), H and E (alcohol fixed) and Z&N (air dried) stain. Additional unstained slides were kept.

RESULTS

During this period a total of 586 no of cases were studied. Amongst them Tubercular and granulomatous comprised the largest group.

Maximum incidence was seen in the age group of 21-30 yrs. The youngest patient was a 1yr 5 months male child and the eldest were a male and female patient of 84yrs. Females were more prone to tubercular lymphadenitis in our study.

Of the 262 cases studied 168 showed positivity for AFB. The rest 94 cases were negative for AFB.

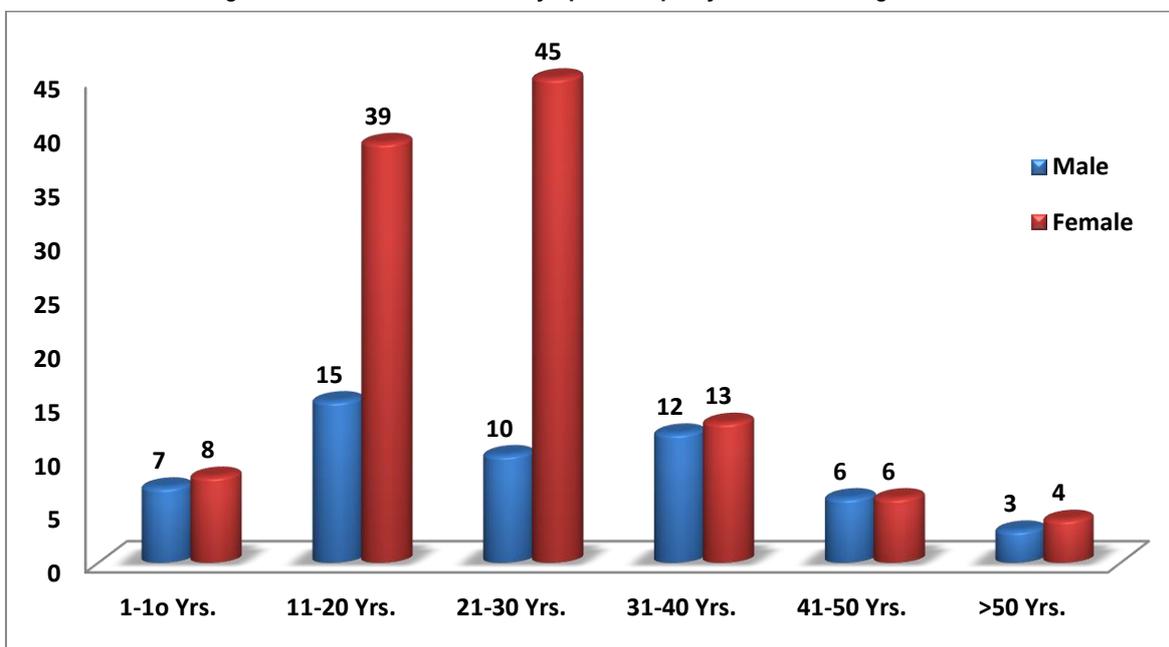
Table 1: Incidence of different types of adenopathy in Males and Females

Diagnosis	Male	Female	Total
Tubercular	53	115	168
Granulomatous	40	54	94
Reactive	76	100	176
Metastasis	90	58	148

Table 2: Incidence of Tubercular Lymphadenopathy in relation to age and sex

Age Group	Male	Female	Total	%
1-10 Yrs.	7	8	15	8.9
11-20 Yrs.	15	39	54	32.1
21-30 Yrs.	10	45	55	32.7
31-40 Yrs.	12	13	25	14.9
41-50 Yrs.	6	6	12	7.2
>50 Yrs.	3	4	7	4.2

Fig 1: Incidence of Tubercular Lymphadenopathy in relation to age and sex



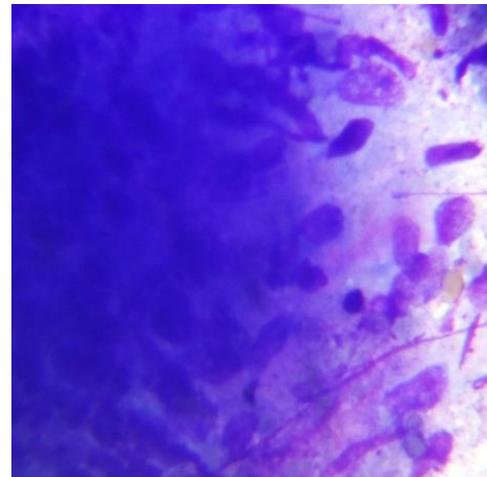
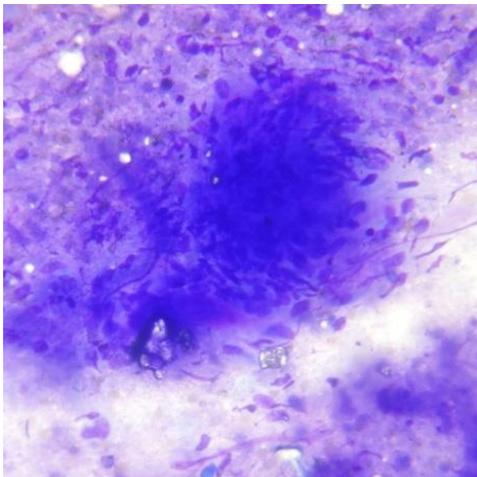
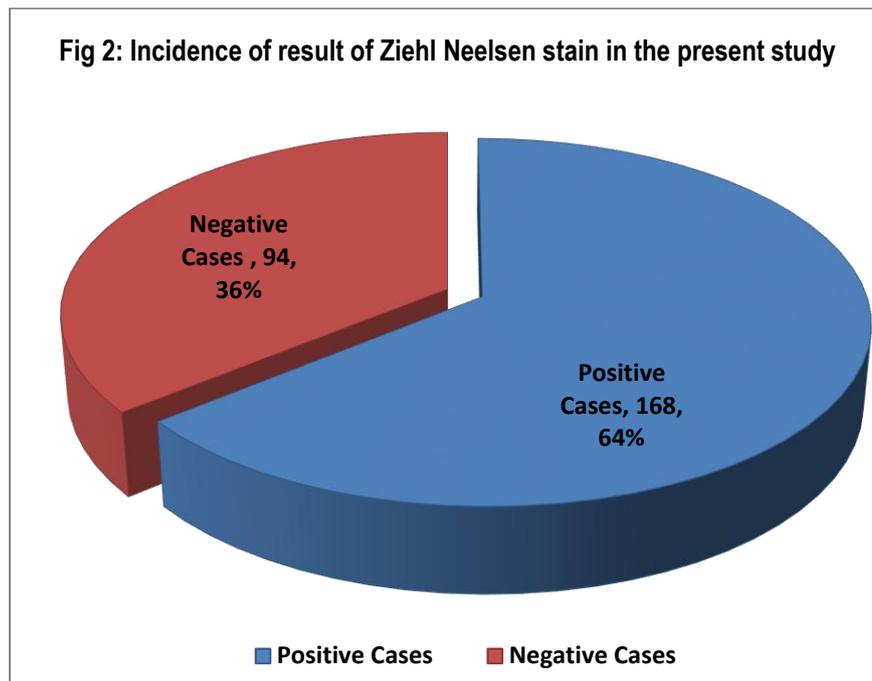


Fig 3: Photomicrograph Of An Epithelioid Granuloma (FNAC)

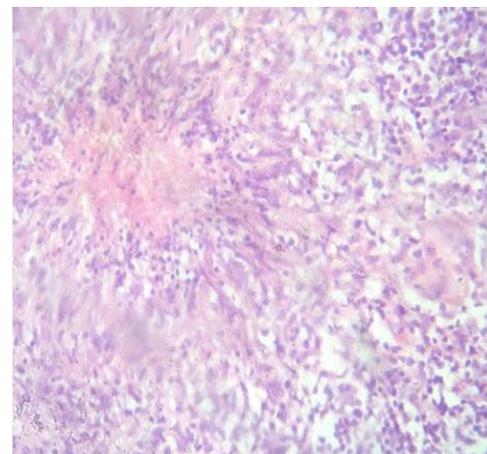
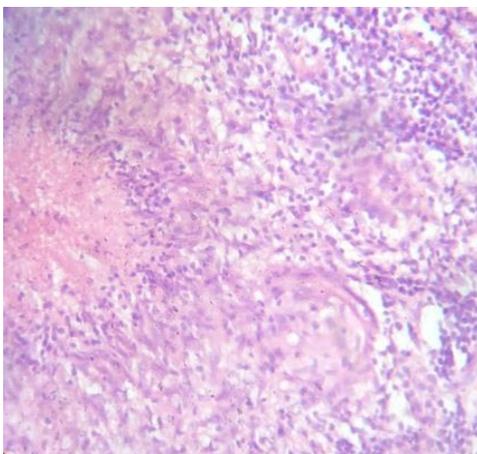


Fig 4: Photomicrograph Of A Tubercular Granuloma (HPE)

DISCUSSION

Tuberculosis is one of the commonly found chronic pulmonary and extrapulmonary disease in developing countries like India.

In our present study, maximum incidence of tubercular lymphadenitis was observed in the age group of 21 to 30 years. Similar observations were reported by Kumar H et al., 2013;¹

Laishram RS et al., 2012;² and Dowerah et al., 2015.³ However a declining trend was seen in the elderly population which was relevant with the findings of Ahmad et al.⁴ Rajashekar et al.⁵ have shown that no age group was exempted from tubercular lymphadenitis which was also true in our study.

A female preponderance has been noticed in our study. Similar findings were shown by Pamra et al.,⁶ Ergete and Bekele,⁷ Nidhi P et al.⁸ and Purohit et al.⁹ While Laishram et al.² and Poudel et al.¹⁰ have described a male preponderance of the cases.

In our present study, Ziehl Neelsen stain for Acid Fast Bacilli (AFB) on Fine Needle Aspiration smear showed AFB positivity to be 64%. Varying ranges of AFB positivity incidences has been described by many authors. Similar studies by Nidhi P et al.,²⁰¹¹⁸ found AFB positivity to be 71% while Kumar H et al.,²⁰¹³,¹ and Thakur B et al.,²⁰¹³,¹¹ found AFB positivity in 35.57% and 26.67% respectively. In our study tubercular lymphadenopathy with 168 no. of cases (28.67%) was the second most common cause of peripheral Lymphadenopathy, reactive lymphadenopathy with 176 (30.03%) cases being the commonest one. Reddy MP et al.¹² also noted similar findings.

Clinically in our study cervical region was the most commonly affected region, involving about 95% of the cases. This was in concordance with Bezabith et al.¹³ who observed cervical involvement in 74.2% of cases. A study conducted by Sharma et al.¹⁴ showed similar results with female predominance and most common involvement of cervical region (88.2%).

Again the most common cytological picture evident in our study was that of necrosis without epithelioid granulomas in 64% of the cases which was consistent with the findings of Nidhi P et al.⁸ also showed similar picture. While in a study by Gupta et al.¹⁵ epithelioid clusters with or without Langhans giant cell with necrosis was the most commonly observed cytological pattern in 50.35%.

CONCLUSION

Tuberculosis has become one of the major health problems at present. In our setup also, being a referral centre, a very high no of cases are detected annually. In the rural areas of Assam poverty and household overcrowding appeared to be some of the most important and frequently noticed risk factors among the patients. Incomplete antitubercular treatment in a previously diagnosed pulmonary tuberculosis case was another common factor.

The diagnosis needs a high index of suspicion and the application of a variety of diagnostic modalities. FNAC coupled with ZN stained smear study is a highly specific tool to report a definite diagnosis of tubercular lymphadenitis.

However diagnostic accuracy can further be enhanced by culture of the material and PCR study.

Tubercular lymphadenitis is best treated with antitubercular medications except in a few cases where surgical intervention is required. The disease burden can be reduced if an early diagnosis can be made and a complete course of treatment is ensured thereafter.

SOURCE OF SUPPORT

Cytology section, Department of Pathology, Assam Medical College, Dibrugarh, Assam, India.

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Conflict of Interest: None Declared.

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