INTRODUCTION

Tuberculosis has been and is a great problem throughout the world, especially in a developing country like India. Besides pulmonary tuberculosis, extra-pulmonary manifestations are relatively more common among the Asian populations, the most common being lymphadenitis especially in the cervical region. (Grange et al 1982) TB has been a major global public health problem from times immemorial. World Health Organization (WHO) estimates show that globally there are 8.6 million incident cases of TB of which 80% are in 22 countries, with India ranked as the highest burden country. (Global tuberculosis report, WHO, 2013) Extra-pulmonary Tuberculosis (EPTB) constitutes about 15 to 20% of all cases of TB. The annual global incidence of EPTB has been increasing in the last decade due to the changing TB control practices, spread of HIV (human immunodeficiency virus), the population growth and the cure of infectious cases of TB might have resulted in a relative rise of annual EPTB case detection. HIV pandemic further complicates the situation, as EPTB constitutes more than 50% of all cases of TB in HIV-positive patients. (Global tuberculosis control report, WHO, 2001) By and large; tissue diagnosis is the mainstay in the management of cases of EPTB. Fine needle aspiration cytology (FNAC) is now established as an alternative, easy and rapid method of tissue diagnosis. It also has a high degree of patient acceptance as FNAC avoids physical and psychological trauma occasionally encountered after biopsy, anesthesia, surgical operation and hospitalization. It is very safe, trivial, cost-effective and at the same time conclusive.

Objective

The current study was conducted to determine efficacy of FNAC in detecting tuberculous lymphadenitis, to evaluate the role of Ziehl Neelsen’s staining (ZN) and culture of aspirated materials tuberculous lymphadenitis. To correlate the gross appearance of aspirate and microscopic feature of lymph node aspirate with AFB positivity and culture.

MATERIALS AND METHOD

The present study consists of clinically suspected cases of tuberculous lymphadenitis attending the Outpatient department of N.R.S Medical College and Hospital from July to August 2015. The patients had been initially seen in the outpatient department of N.R.S Medical College and Hospital and was subsequently referred to FNA section for evaluation of their...
RESULTS

The total number of Samples (collected from ill-defined Lymph nodes of the suspected patients of Tuberculous lymphadenitis in N.R.S Medical College and Hospital Department of pathology under FNAC section) was 42, of which total number of males (M) were 24, and that of females (F) were 18. These samples were used to perform Acid Fast Staining (Z-N staining) for detection of Mycobacteria. Also samples were spread on Lowenstein-Jensen medium for culturing. If organism grows, that confirms the presence of Mycobacteria on the sample. Age of the patients varies from 5yrs to 70 yrs. Most of the lymph nodes isolated were from cervical area (91.67%).

<table>
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<th>Techniques</th>
<th>Percentage of Tuberculosis Diagnosis (n=42)</th>
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<td>AFB Culture</td>
<td>57.1</td>
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<td>ZN staining</td>
<td>23.9</td>
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DISCUSSION

The present study consists of 42 clinically suspected cases of tuberculosis lymphadenitis with a M: F ratio of 1.33:1 and in the age group of 5 to 70 years, who attended the outpatient department of N.R.S Medical College and Hospital, Kolkata. In a study by Ahmad et al., the youngest patient was two-year-old and the oldest being 95 years. Majority of the patients (75%) were in the second to fourth decades of life. Similar age distribution was seen in a study by Ergete and Bekele, Purohit et al. and Dandapat et al. female predominance was noted by Pamra et al., Ergete and Bekele and Purohit et al. while male predominance was noted by Rajsekaran et al., and Ahmad et al. Clinically, in our study, cervical region was the most commonly affected region, involved in 91.7% of cases. This was in concordance with Bezabih et al. who observed cervical involvement in 74.2% of cases. While matted lymph nodes seen in majority of cases (60%) by Ahmad et al. Single lymph node enlargement was seen in 48.6% tuberculous lymphadenopathy by Aggarwal et al. We noted a much
higher incidence (50%). The patients were examined clinically and fine needle aspiration of Lymphadenitis was carried out, material obtained was used for cytological examination, ZN smears and culture, also the gross appearance of aspirate was noticed as either purulent or cheesy or blood mixed.

The smear positivity rate was relatively low (23.9%) probably due to only one staining technique used. Fluorescent staining along with Ziehl Neelsen method could have improved the smear positivity rate. The smear positivity rate among the cytologically diagnosed cases was 41.67% (10 out of 24). Culture isolation of mycobacteria was better in our study (28.6%). Positive cultures are usually obtained only 30-50% of all such cases.

This may be due to the low number of organisms in lymph node lesions. In addition, natural healing process, previous anti-tuberculosis treatment and unrepresentative specimens of the lymph node material used for culture can all account for more negative cultures. The results obtained were in the range that was observed by other authors, who carried out same procedure. When gross appearance of aspirate was correlates with AFB and culture positivity, maximum positivity was observed in cases with purulent aspirate for both. The overall ZN staining positivity for AFB was 23.9% and in 28.6% cases mycobacteria were isolated by culture. In all the culture positivity was significantly higher than ZN smear positivity (p value = 0.00005%). Among the 12 culture positive for mycobacteria 9(75%) phenotypically identified as M.tuberculosis, rest three were M.chelonea, M.abscessus and M. fortuitum.

The identification of species of mycobacteria would help to study various biological properties of mycobacteria including drug sensitivity and therapeutic approach. The diagnostic difficulties encountered were parallel to those experienced by different authors working on similar projects, a case in point...
being false negative cytology diagnosis in case with purulent aspirate which calls for ZN staining in every case suspected of tuberculosis in origin. The tubercular lymphadenitis patients were treated with CAT –I antitubercular regimen under DOTS. Other patients were treated with Clarithromycin and Ethambutol based regimen, both group of patients responded well.

CONCLUSION

Tubercular lymphadenitis is the commonest among the suspected patient group and also among other the Non Tuberculous Mycobacteria are also coming up. So identification up to the species level is important in the management of the patients. In spite of the diagnostic pitfalls, the results obtained on analysis of the study carried out reinforce the opinion that Fine Needle Aspiration Cytology serves as a potent and accurate diagnostic tool for patients presenting with Lymphadenopathy due to tuberculosis

References


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