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Pulmonary Medicine

A CLINICAL STUDY OF PERIPHERAL EXTRA PULMONARY TUBERCULAR LYMPHADENOPATHY

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ABSTRACT

Background & Objectives: Since an ancient time tuberculosis is a widely distributed in all over world more particularly in a country like India. Extra-pulmonary involvement is also common in which Peripheral lymphnode involvement is the commonest form of extra-pulmonary mycobacterial disease and cervical region is the most frequent site nowadays, there is increased incidence of Tuberculous lymphadenitis due to increased prevalence of HIV. Even with the best treatment available, tuberculosis of lymphnode still remains a problem for the clinician, because of late diagnosis,poverty and ignorance of symptoms.

Hence this study has been undertaken to evaluate tuberculosis cervical lymphadenitis with special emphasis based on FNAC. Surgical excision biopsy followed by histopathological examination is time consuming, costly, required hospitalization, pre and post procedure complications hence patients compliance is poor. While fine needle aspiration cytology is simple, rapid, cheaper and outpatient department procedure. The success rate of diagnosis from FNAC is around 75-90% in various studies.

Methods: A prospective, observational study was conducted among the patients who attended Tuberculosis & Respiratory Diseases Department from June 2011 to March 2013 in a tertiary care hospital with features of Peripheral Extra pulmonary Tubercular Lymphadenopathy. A total of 124 cases of peripheral extra pulmonary tubercular Lymphadenopathy were studied from June 2011 to March 2013. A detailed history, complete physical examination, various laboratory work and radiological studies carried out. Diagnosis of TB made by histopathological & Tuberculin test was done with 10 TU PPD (0.1 ml) on left forearm and reading was taken after 48 hours. Majority patients were sent to pathology department for fine needle aspiration cytology of affected gland. Patients were having private FNAC report suggestive of tuberculous lymphadenitis were also considerd in study.

Result: In the present study of 124 patients having Tuberculous Lymphadenopathy, the commonest age group affected is below 40 years (85% patients).Females are affected more than males (M:F ratio 1:1.03). With most of the patients coming from lower socioeconomic status. Majority of patients (72%) were presented with painless swelling in neck and 91% patients had attended health facility within 3 months.Family history positive in 04 (03%) of patients. Most of the time in tuberculous lymphadenopathy patients present with swelling only i.e 106 (86%) and 18 (14%) patients with either cold abscess or pus discharge so simple lymph node enlargement is common. 67 % patients show raised ESR. It may help in supportive diagnosis of tuberculous aetiology.67% patients show tuberculin test positive which also may help in diagnosis of tubercular aetiology. 10(08%) patients of lymphadenopathy had abnormal chest radiogram. Majority of the patients have normal leukocyte count with normal lymphocyte.Only 03 patients are found sputum positive in 124 tubercular lymphadenitis patients.It might be due to direct spread of infection from tonsil to regional lymphnode.Primary infection may occur in lymphoid tissue of tonsil.Only 1 patient is found HIV reactive in this study.This might be due to less HIV prevalence in rural population.

Conclusion: It was observed that cervical region lymph node was more commonly involved and fine needle aspiration cytology (FNAC) was found to be a safe, useful, reliable, effective method for early diagnosis of tubercular lymphadenitis and early institution of definitive therapy. It is a comparatively cheap and less time consuming method. Adults are more affected than old people and females are affected more than males. ESR help in supportive diagnosis of Tuberculous etiology and tuberculin test positive also may help in diagnosis of tubercular etiology.

KEYWORDS : Tubercular Lymphadenopathy, FNAC, ESR, Tuberculin test

INTRODUCTION

Tuberculosis (TB) is an infectious disease caused predominantly by Mycobacterium tuberculosis and among the leading causes of mortality in India. India accounts for 1/5 of the global TB burden. Pulmonary tuberculosis is the most common site for tuberculosis but it also affects other sites, which is called extra pulmonary tuberculosis.

Tuberculosis (TB) is a major global public health problem. It causes ill-health among millions of people each year and ranks alongside the human immunodeficiency virus (HIV) as a leading cause of death worldwide. In 2015, there were an estimated 9.6 million new TB cases: 5.4 million among men, 3.2 million among women and 1.0 million among children. There were also 1.5 million TB deaths (1.1 million among HIV-negative people and 0.4 million among HIV-positive people), of which approximately 890 000 were men, 480 000 were women and 140 000 were children.

About 14 million estimated cases of TB are there in India and every year 2 million people contact TB and every three minutes two Indian dies of TB, leading to about 5 lack death per year previously at the beginning of RNTCP. The incidence of extra pulmonary tuberculosis in newly reported cases of tuberculosis is about 16 to 20 percent in immunocompetent patients and accounts for about 50 percent of the cases in HIV positive individuals.

There is significant difference in presentation of Tuberculous lymphadenitis in developed and developing countries. In several studies from India, mycobacterial tuberculosis has been the most common pathogen isolated from patient with tuberculous lymphadenitis accounting for almost all the cases. On the other hand, NTM are the most frequently isolated pathogens from the lymphadenitis specimens in several reports from the developed countries. In Australia and British Columbia, NTM have been detected 10 times more frequently than mycobacterium tuberculosis.

Tuberculous cervical lymphadenitis is diagnosed on basis of history, clinical examination and laboratory investigations.

MATERIALS AND METHODS

STUDY TYPE:

Observational Study

STUDY SETTING:

OPD and indoor facility of department of Tuberculosis and Respiratory Disease, Tertiary care centre

STUDY PERIOD:

Study was conducted for period of 1 year and 3 months from June 2011 to March 2013, which included 12 months for data collection and 3 months for data entry and data analysis.

SAMPLE SIZE AND SELECTION OF SUBJECTS:

Sample size calculated by considering the one week pilot survey of patients with features of Peripheral Extra pulmonary Tubercular Lymphadenopathy patients from dept. of Respiratory medicine. Participants giving written informed consent were included in this study.

SAMPLING TECHNIQUE: Multiphase sampling

DATA COLLECTION:

Data collection was be done by using a structured pre-prepared case Performa to enter the patient details, detailed clinical history including presenting complaints, history of Tuberculosis, history of anti-tuberculosis medications, past and family history of tuberculosis, and physical examination of patients who meet the inclusion criteria

1) INCLUSION CRITERIA

- Patients of any age.
- Patients presenting with peripheral extra pulmonary tubercular lymphadenopathy.

2) EXCLUSION CRITERIA

- Patients who have taken Anti tubercular treatment in past

METHOD

The study included the 124 patients of peripheral extra pulmonary tubercular lymphadenopathy subjects in Indoor facility of Tuberculosis & Respiratory Disease Department in tertiary care hospital. All the subjects gave an informed consent after detailed procedure of clinical examination and the invasive technique was explained to them. A brief history, height, weight, age, sex and findings of general, systemic, radiological examination, tuberculin test and FNAC were entered in the patient information chart giving a separate ID for each subject.

Patients were asked about the duration of symptoms like fever, weight loss, night sweats, variation in size of lymph node. Cervical lymph nodes are most commonly affected, although axillary and inguinal lymph nodes may also be involved. Clinical examination consisted of both general, physical and systemic examination. A detailed examination of respiratory system and swollen lymph was carried out. Diagnosis of TB made by histopathological & Tuberculin test was done with 10 TU PPD (0.1 ml) on left forearm and reading was taken after 48 hours. Majority patients were sent to pathology department for fine needle aspiration cytology of affected gland. Patients were having private FNAC report suggestive of Tuberculous lymphadenitis were also considerd in study.

Informed Written consent was obtained from all the patients undergoing FNAC procedure

Fine needle aspiration of gland

Fine needle aspiration cytology (FNAC) was found to be a safe, useful, reliable, effective method for early diagnosis and early institution of definitive therapy. It is a comparatively cheap and time consuming method.

(I) MATERIALS USED IN FNAC

(a) Swab with spirit or skin sterilizing solution.
(b) Disposable 10 or 20 CC syringe with fine needle (21-31G).
(c) Microscopic slide of 76mm x 25mm size is required.
(d) Transport box for slides.
(e) Fixation Material – 95% alcohol.
(f) Complete laboratory request form.

(II) METHOD

The skin is wiped with an aseptic solution. The lymphnode is palpated and fixed with one hand and left thumb and left index finger in a position favourable for needle aspiration. No local anaesthesia is required. The syringe and needle are kept absolutely dry during the aspiration, to prevent cytolysis by osmosis.The skin and subcutaneous tissue are punctured and after piercing through lymphnode tissue, the lesion is reached. The needle is allowed to enter in the lesion and the same time the piston of syringe retracted to create a vacuum in syringe. In order to get enough material, the needle is removed back and forth, with each time, the direction of needle is changed in different area of lesion. After completion of aspiration the piston is released to equalize the pressure in syringe. The needle is withdrawn and disconnected from syringe. After filling the air in the syringe, it is reconnected with needle and material obtained by aspiration is expelled on glass slide. The smears were prepared by spreading forward with up and down movement with another glass slide inclined at an angle of 45°. Care is taken not to spread the smear too quickly, to prevent cell lysis. Sometimes when multiple groups of lymphnodes are involved FNAC material should be obtained from different groups.Smears are immediately fixed by 95% ethyl alcohol and are stained by H & E Stain and papanicoloau staining method.

(III) DISADVANTAGES AND LIMITATIONS OF FNAC

1) It is a blind procedure may many times give an inadequate aspiration.
2) In deep seated lesion is difficult unless there is sonographic or CT
3) guidance.
4) FNAC from necrotic material gives false interpretation.
5) Possibility of spread of tumour cells along the needle tract is very less
6) but it may occur.

	Surgical biopsy	FNAC
Diagnosis	Histopathological	Cytopathological
Diagnostic facility	Narrow	Broad
Anaesthesia	Yes	No
Duration of procedure	>10 mts	<10 mts
Report available	1-2 days	1-2 hrs
False negative	Few	Some
Cost	High	Low
Specimen obtained	In operation theatre	In outpatient department
Trauma	Yes	Little

DISCUSSION AND CONCLUSION

In the present study of 124 patients having Tuberculous lymphadenopathy, summary and conclusion of the findings are as follows:

1) The commonest age group affected is below40 years (85% patients).Thus adults are more affected than old people.
2) Females are affected more than males (M:F ratio 1:1.03)
3) Most of the patients are coming from lower socioeconomic status.
4) Majority of patients (72%) were presented with painless swelling in neckand 91% patients had attended health facility within 3 months.
5) Family history positive in 04 (03%) of patients.
6) Most of the time in tuberculous lymphadenopathy patients present with swelling only i.e 106 (86%) and 18 (14%) patients with either cold abscess or pus discharge so simple lymph node enlargement is common.
7) Other site involvement like axillary or inguinal are less common and common in immunocompromised patients
8) 67 % patients show raised ESR. It may help in supportive diagnosis of tuberculous aetiology.
9) 67% patients show tuberculin test positive which also may help in diagnosis of tubercular aetiology.
10) 10(08%) patients of lymphadenopathy had abnormal chest radiogram.
11) Majority of the patients have normal leukocyte count with normal lymphocyte.
12) Only 03 patients are found sputum positive in 124 tubercular lymphadenitis patients.It might be due to direct spread of infection from tonsil to regional lymphnode.Primary infection may occur in lymphoid tissue of tonsil.
13) Only 01 patient is found HIV reactive in this study.This might be due to less HIV prevalence in rural population and patients attended here mostly from rural population.

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