ORIGINAL ARTICLE

Study on Tubercular Cervical Lymphadenopathy: 100 Cases

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Abstract:

Background: Cervical lymphadenopathy is the commonest extra-pulmonary tuberculosis. We designed to study the clinical and laboratory profile of these patients.

Materials and Methods: Observational study on patients with neck gland having written consent presented in ENT/Medicine outpatient department of Chittagong Medical College Hospital (CMCH). Structured case report form was filled up after clinical, cytological and histological investigation. The study was carried out on June 2014 to March 2015. Non tubercular cases were excluded.

Result: Total 100(n=100) patients were enrolled where mean age was 26.48±10.2 years , 46% person were male ,young low income people from urban area were our clients mostly .Maximum patients were underweight with mean BMI 20.97±3.07, 70% patients had BCG vaccination scar, 65% patients had fever , 41% (n=41) had weight loss, 12% (n=12) patients had history of contact with pulmonary TB , 3% patients were diabetic, 4% patients had pulmonary TB at the same time of diagnosing Lymph node TB. 29% (n=29) patients had mild anemia during diagnosis, highest site was in right anterior chain (17%), Lymph node number varies from 1-12 with a median 3. In 37% (n=37) cases lymph nodes were matted, rest were discrete, 2% patients of the study had discharging sinus. Mean hemoglobin was 11.8±1.4 gm/dl, ESR was 5 mm to 120 mm in 1st hour with a mean39.3 mm, total WBC count were normal in maximum cases with a mean of $10.3 \pm 3 \times 10^3$ /dl with a normal differential count, mean RBS was 109.7±20 mg/dl, only 5% patients had abnormal chest skiagram, Montaux test were positive in 69% cases.

Conclusion: Tubercular cervical lymphadenopathy is the disease of young presents with painless neck swelling, FNAC / histopathology confirms the diagnosis.

Key words: Cervical lymphadenopathy, Tuberculosis.

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Introduction:

The classic term scrofulatia was used to describe neck gland enlargement which was even used by

the Hippocrats.¹ Tuberculosis caused mainly by Mycobacterium tuberculosis causing ill health to millions of people and ranked within top 10 leading

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cause of death and a highest from an infectious disease worldwide in 2015.² In 2015 10.4 million TB cases were reported worldwide and in Bangladesh 362000 cases.²

Low BMI, overcrowding, low socioeconomic condition are the risk factors of tuberculosis in TB endemic area.

Tubercular lymph adenopathy is the most common extrapulmonary tuberculosis where cervical is the most among all lymphnodes.³,^{4,5,6}Tubercular lymphadenopathy (TCL)usually presents with enlargement of lymphnode with or without constitutional feature of tuberculosis like low grade fever, weight loss anorexia, night sweats etc. TCL may presents with cold abscess, chronic fistula.^{6,7,8}

For diagnosis we require strong clinical suspicion, routine haematology usually remains normal, chest x-ray may not give any clue, Montaux Test help. Tuberculin skin test (TST) is used to show delayed- type hypersensitivity reactions against mycobacterial antigen, in which the reagent is mostly protein purified derivative (PPD). The test becomes positive 2-10 weeks after the mycobacterial infection. Positive reactions (>10mm induration) can occur in *M. tuberculosis* infections⁸

Fine needle aspiration cytology(FNAC) is quick, easy, less invasive procedure to diagnose lymph node TB.FNAC has 77% sensitivity ⁹ in diagnosing lymph node TB.

Diagnosis of lymph node tuberculosis may not be clear cut, usually histopathological features of granulomatous inflammation with caseation necrosis is suggestive of tuberculosis.

Materials and method:

This prospective observational study was done in Medicine and ENT disease outpatient department(OPD) of Chittagong Medical college Hospital (CMCH), Chittagong, Bangladesh.

CMCH is the 1000 bed large tertiary hospital of second largest city of the country.The study was conducted from May 2014 to March 2015 Ethical approval was taken from the ethical review committee of Chittagong Medical College. Patients having cervical lymphadenopathy >1cm were included in the study after informed written consent.

Patients were registered with age, sex. Socioeconomic condition of the patient was documented with residence, living status. occupation. History taking including constitutional features like fever, night sweats, anorexia, weight loss was asked with duration and recorded. Contact with smear positive pulmonary TB patient within last one year, comorbid condition like diabetes mellitus was recorded. Thorough physical examination of the patients were done by research physicians. Nutritional status was recorded with BMI, anemia, lymphnodes were examined site, size, consistency,tenderness, presence of sinus or abscess was noted and recorded. Complete blood count(CBC) with differentials, chest x-ray PA view, MT, RBS, FNAC and biopsy was asked for. Patients diagnosed other than TB were excluded from the study. After making diagnosis standard anti tubercular therapy was given.

Data were recorded with structured case record form, data was analyzed with SPSS 20. Mean , median and percentage were used.

Result:

Total 100 patients were enrolled where mean age was 26.48 ± 10.2 years ranging from 12 years to 65 years of age, there were 46% (n=46) person were male, 54% (n=54).

Variable	Number(n)	Percentage(%)
Age(years)<20	21	21
20-29	43	43
30-39	19	19
40-49	4	4
50-59	3	3
≥60	2	2
Sex		
Male	46	46
Female	54	54
Residence		
Metropolitan area	66	66
Municipal Headquart	er 3	3
Upzila Headquarter	10	10
Rural	21	21

Table-I



Fig.-1: *Age, sex, residence of the patients*

Among the patients 66% (n=66) came from metropolitan area, 21% (n=21) from rural area, 10% (n=10) from upzila headquarter.

Among the patients 28%(n=28) were students, 27% (n=27) had small business, 20%(n=20) were housewives while 19% (n=19) were garment worker .

Fig. 2: Occupation of the patients

Maximum patients were underweight with mean BMI 20.97 \pm 3.07. 70 % (n=70) patient were found with vaccination scar, while28% (n=28) were not vaccinated, 2% had no scar but they recalled about vaccination. 59% patients were living in crowded room, while 28%(n=28) lived in overcrowded room, only 13% (n=13) lived in noncrowded room.

65%(n=65) patients had fever while rest were afebrile. Among febrile patients duration of fever ranges from 3 days to 300 days with a mean duration 47.85 days. Afebrile were 35%, 61%(n=61) patients were with low grade fever, 4%(4%) had high grade fever. 63% (n=63) were with remittent fever while 2 % (n=2) had continued fever. 31%(n=35) had typical diurnal variation of fever with evening rise rest had not. 41% (n=41) had weight loss rest had no among them 33%(n=33) had documented weight loss, rest had no documentation. 58%(n=58) patients had no history of loss of appetite, 42% patients lost appetite. Mean duration of appetite loss was 21.4 days ranging from normal appetite to weight loss for 200 days. 21% (n=21) patients had history of night sweats rest had none. 12% (n=12) patients had history of contact with pulmonary TB within last one year rest had not. 4% patients had history of previous antitubercular therapy. 3% (n=3) patients were diabetic. 4% patients had pulmonary TB at the same time of diagnosing Lymphnode TB(LNTB).

29% (n=29) patients had mild anemia during diagnosis of LNTB rest were not anemic. 17% (n=17) had lymphnode on right anterior chain, 12% (n=12) had at left posterior chain, 10% (n=10) at left anterior chain, 9% (n=9) had at right posterior chain, 9% on right supraclavicular, 7% on left supraclavicular chain. 24 % (n=24) had multiple lymph node sites involvement. Lympnode number varies from 1-12 with a median 3. 84% lymph nodes were firm, 12% were hard to feel rest were soft to touch. In 37 % (n=37) cases lymph nodes were matted, rest were discrete. 90% (n=90) lymphnodes were nontender. 2% (n=2) patients of the study had discharging sinus.

Table-IIDescription of lymphnodes

Variable	Number(n)	Percentage(%)
Cervical Lymphnode		
Site		
Right anterior cervical	17	17
Left anterior cervical	10	10
Right posterior cervica	1 9	9
Left posterior cervical	12	12
Right supraclavicular	9	9
Left supraclavicular	7	7
Right axillary Multiple	e 4	4
Others	8	8
Distribution		
Discrete	63	63
Matted	37	37
Number		
Single	27	27
Multiple	73	73

Mean haemoglobin was 11.8 ± 1.4 gm/dl, ESR was varying from 5 mm to 120 mm in 1st hour with a mean 39.3 mm in 1st hour, total WBC count were

normal in maximum cases with a mean of $10.3 \pm 3 \times 10^3$ /dl with a normal differential count (neutrophil 63.3 \pm 7.8%, lymphocyte 30.8 \pm 7.6%), mean RBS at presentation wa 109.7 \pm 20 mg/dl, only 5% patients had abnormal chest skiagram, Montaux test were positive in 69% cases.

Discussion:

Tubercular lymphadenopathy is the disease of young age group, common age group affected is 20-40 years. In our study mean age was 26.48 ± 10.2 years ranging from 12 years to 65 years. It is almost similar to other studies.Vemulapalli et all ¹⁰ found highest in 11-20 years (40%) followed by 20-30 years age group(26%), Karthikrajan¹¹ found highest in 36% in 20-30 years age, Jha, Dass, Nagarkar, et al⁴ showed the commonest age group affected by the disease in his study was 11–20 years (23 patients) followed by 21–30 years (20 patients),Md ismail et all⁶ found mean age 35 years.

No specific sex predominance of TCL, male female ratio is different in different studies. In our study 54% of the patients were female.Vemulapalli et all found 40% male,Karthikrajan found 55% male, Jha, Dass, Nagarkar, et al showed 43% were male respectively in their studies.Maximum patients came from low socioeconomic condition, the alarming situation in garment sector overcrowding with low income leads to malnutrition which is a strong risk factor for tuberculosis. In our study 28%(n=28) patients were students, 27% (n=27) had small business, 20%(n=20) were housewives while 19% (n=19) were garment worker. Among the patients 66% (n=66) came from metropolitan area, 21% (n=21) from rural area, 10% (n=10) from upzila headquarter, 59% patient live in crowded room. BC Jha et all found 62.5 %, Velmulapalli et all found 72% from low income group. 66% patients of Vilmulapalli study lived in overcrowded room.

12% patient had history of contact with smear positive TB in our study, it is higher in other studies .Karthikranjan found 15.6%, Vemulpalli found 18% but Ismail found 28% contact history.

According to statement of our patients in 65% cases had history of fever though maximum had no documentation, to them duration of fever ranges from 3 days to 300 days with a mean duration 47.85 days. Afebrile were 35%, 61%(n=61) patients were with low grade fever, 4%(4%) had high grade fever. 63% (n=63) were with remittent fever while 2 % (n=2) had continued fever. 31% (n=35) had typical diurnal variation of fever with evening rise rest had not. 21% (n=21) patients had history of night sweats rest had none. BC jha found only 10.7% patients were febrile.41% (n=41) had weight loss among them 33%(n=33) had documented weight loss, 42% patients lost appetite. Mean duration of appetite loss was 21.4 days ranging from normal appetite to weight loss for 200 days. BC Jha found weight loss in 14% cases, whileVermulapalli found 20% patients lost appetite and weight.

70% patients of our study had BCG vaccination mark. But it is alarming that with 100% EPI coverage how rest of the patients were not vaccinated! Malnourished persons were victim mostly with an average BMI 20.97±3.07. 29% patients were mildly anemic.

No site of involvement is distinctly superior in our study though right sided involvement is slightly higher

17% (n=17) had lymphnode on right anterior chain, 12% (n=12) had at left posterior chain, 10% (n=10) at left anterior chain, 9% (n=9) had at right posterior chain, 9% on right supraclavicular, 7% on left supraclavicular chain. 24 % (n=24) had multiple lymphnode sites involvement.Posterior tringle is frequently invoved in Ismail series and Karthikranjan series 50 and 35 % respectively followed by deep jugular group involvement. In our study lympnode number varies from 1-12 with a median 3. 84% lymph nodes were firm, 12% were hard to feel rest were soft to touch. In 37~%(n=37) cases lymph nodes were matted, rest were discrete. 90% (n=90) lymphnodes were nontender. 2% (n=2) patients of the study had discharging sinus. BC Jha found 45% lymphnodes were matted and 36% were discrete ,single nodes whether Karthikranjan found 27% matted and 23% discrete. Scattered or aggregates of epetheloid cells was found in FNAC and caseating or noncaseating granuloma was found in histopathology.

In our study except elevate ESR other haematological parameters remained normal, mean haemoglobin was 11.8 ± 1.4 gm/dl, ESR was varying from 5 mm to 120 mm in 1st hour with a mean 39.3 mm in 1st hour, total WBC count were normal in maximum cases with a mean of $10.3 \pm 3 \times 10^3$ /dl with a normal differential count (neutrophil 63.3 \pm 7.8%, lymphocyte 30.8 \pm 7.6%), Karthikranjan found 42% patients with <10 gm/dl Hb and 47% had ESR >20 mm,

MT were positive in 69% cases in our study BC jha found only 3% MT negative cases. So we can say the test had a good specificity in TCL diagnosis.

Conclusion:

Tubercular cervical lymphadenopathy is one of the most prevalent extrapulmonary tuberculosis. It is a disease of the young. Person from low socioeconomic background usually affected, presented with neck glands with or without constitutional symptoms. Haematology may not help but MT may. FNAC/histopathology is suggestive. We have to encounter the disease more in near future. Sound knowledge with larger study will be required to update the knowledge.

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