

CLINICOPATHOLOGICAL STUDY OF CERVICAL TUBERCULAR LYMPHADENOPATHY AT KIMS HOSPITAL BANGALORE

Sreenidhi G.M¹, Nandeeshkumar G.N²

HOW TO CITE THIS ARTICLE:

Sreenidhi GM, Nandeeshkumar GN. "Clinicopathological study of cervical tubercular lymphadenopathy at KIMS hospital Bangalore". Journal of Evolution of Medical and Dental Sciences 2013; Vol. 2, Issue 44, November 04; Page: 8655-8666.

ABSTRACT: BACKGROUND AND OBJECTIVE: Tuberculosis is one of the major public health problems in India and most of the other developing countries. It is an ancient disease which continues to haunt even we step into the next millennium. Tuberculosis is most common cause of death world over. The deadly synergy between Mycobacterium tuberculosis and AIDS has resulted in resurgence of tuberculosis world over. Tuberculosis is still considered a social disease; it reflects the standard of living in the community. In the past tuberculosis had a distinct mortality, presently the mortality is decreasing in our country due to implementation of Directly Observed Treatment Short course (DOTS) strategy under RNTCP by WHO. Cervical lymphadenopathy caused by many conditions, both infective and noninfective. Out of these, tuberculosis contributes for most of the cases; hence, to tackle the commonest cause the present study was undertaken. **METHODS:** The prospective study population consisted of patients above 18 years are clinically diagnosed as cervical tubercular lymphadenitis. A proforma drafted for study these patients was used. Patients was examined systematically giving due importance to local examination. After clinical diagnosis, further investigations were done for the confirmation of diagnosis. Treatment instituted appropriately and follow up done. **RESULTS:** Majority of cases in the study who were diagnosed clinically as cervical tubercular lymphadenitis were confirmed as tubercular by FNAC. Histopathological examination was done for a cases wherever FNAC was inconclusive. Presence of constitutional symptoms had limited significance. Cervical lymph nodes group of Level-V was most commonly affected. Variable results were noted among the groups of lesion, with regard to characteristics like size, number, laterality, levels, mobility, matting, Caseation etc. FNAC by virtue of it being inexpensive, easy to perform and quick in getting a results, is one of the important and essential diagnostic procedure. **INTERPRETATION AND CONCLUSION:** Tuberculosis is an important disease, one of the commonest disease affecting lymph nodes. A constitutional symptom in cervical tubercular lymphadenitis has limited significance and clinical behavior can be highly variable. FNAC deemed as frontline investigation with further investigations based on FNAC result. However, histopathological examination remains the most dependable diagnostic tool. Surgical intervention is definitely required in many cases, though; most of the cases are medically curable. Cervical tubercular lymphadenopathy is an important disease to reckon and always calls for meticulous attention, analysis and treatment.

KEY WORDS: Cervical tubercular lymphadenopathy, FNAC, Histopathological examination.

INTRODUCTION: Cervical tubercular lymphadenopathy is the most common extra pulmonary Manifestation of tuberculosis. Varied number of disorders ranging from trivial inflammatory conditions to serious malignant conditions affects lymph nodes. Almost all the diseases of lymph

ORIGINAL ARTICLE

nodes results in enlargement of nodes causing lymphadenopathy. Thus, lymph node enlargement is quite a common clinical problem.

Of all the groups of lymph nodes in our body cervical group of lymph nodes are most commonly involved in tuberculosis. Neck consists of about 300 lymph nodes amounting to nearly 38% of the total lymph nodes of the body.

The analysis of the lymph node enlargement in the neck is not an easy task as patients with cervical lymphadenopathy have similar profile. Improper diagnosis may convert a potentially curable into an incurable one.

Clinical examination of patients with cervical lymphadenopathy of different age groups, sex, social status many a time fail to solve the problem and does not lead to final diagnosis. Hence, we often need the help of pathologist and microbiologist to help us through our endeavor for correct diagnosis.

Fine Needle Aspiration Cytology (FNAC) is proved safe, quick, reliable and cost effective procedure. In addition, it is helping in the diagnosis of lymph node tuberculosis. It avoids physical/psychological trauma, local/general anaesthesia, surgical operations and hospitalization. However, the question is, how accurate is the FNAC? For that reason, there is a need of histopathological diagnosis, if FNAC is inconclusive.

METHODOLOGY: The present study is carried out at Kempegowda Institute of Medical Science, Bangalore during November 2010 to April 2012. The material consists of patients attending to the KIMS hospital Bangalore, who were diagnosed clinically as tubercular cervical lymphadenopathy. The study consists of 90 consecutive cases, which includes both outpatients and inpatients.

INCLUSION CRITERIA:

1. All patients above 18 years of age groups presenting with lymph node swelling in the cervical region.
2. Patients with enlarged neck nodes of more than two weeks duration

EXCLUSION CRITERIA:

1. Neck swellings other than lymph node origin.
2. Patients' below 18 years of age groups.
3. Patients with enlarged neck nodes of less than two weeks duration.

A detailed history was taken and note was made regarding age, sex, duration of symptoms, constitutional symptoms and history of contact with tuberculosis patient. A complete physical examination was carried out. Importance was given to local examination in respect to site, size, number, unilateral/bilateral, consistency, mobility, matted/discrete and abscess/sinus. Also examined for involvement of other (like inguinal and axillary) lymph nodes.

Later the patients were subjected to following routine and special investigations.

Routine investigations include, Hb percentage, total count, differential count, ESR, Chest X-ray. Special investigations include Mantoux test, Sputum for AFB, FNAC and Biopsy if FNAC was not conclusive.

Regarding the treatment, all the patients confirmed as tubercular cervical lymphadenitis was put on either short-term (DOTs) or long term (daily regimen) chemotherapy.

ORIGINAL ARTICLE

The patients were then followed for 6 months to one year and watched for subjective improvement in general health, improvement in constitutional symptoms, if present or objective improvement with regard to decrease in size of lymph node and weight gain. Surgery in addition to chemotherapy was reserved for following conditions.

1. As diagnostic biopsy
2. Treatment of cold abscess and sinus
3. Nodes that have not resolved with chemotherapy
4. Large node

RESULTS: The present study includes 90 cases, which were clinically diagnosed as cervical tubercular lymphadenitis. For all cases, cervical lymph node FNAC was done, In which 18 cases were not conclusive with FNAC, were subjected to biopsy.

Out of 90 cases which were clinically diagnosed as cervical tubercular lymphadenitis 65 cases were confirmed as tubercular lymphadenitis, 19 cases turned out as reactive lymphadenitis, 4 cases reported as Lymphoma and 2 cases were found to have Metastatic secondary's. Confirmed tubercular lymphadenitis cases were analyzed further.

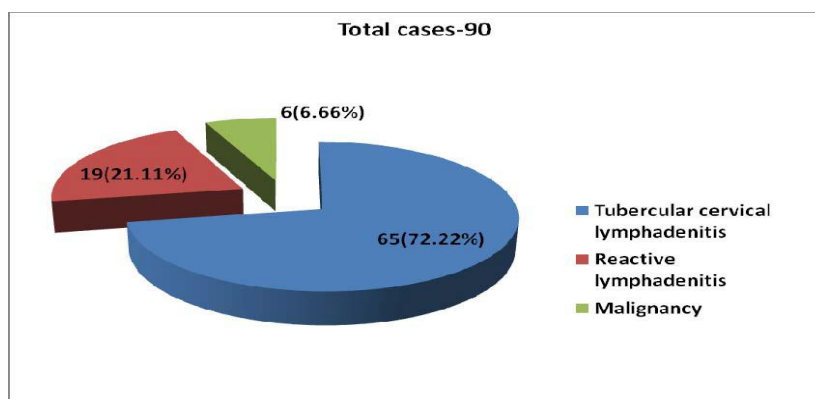


Figure: - 1 Chart showing total number of cases studied

1. AGE DISTRIBUTION:

Table 1: Age distribution of patients studied

Age in years	Number of patients	%
17-20	18	27.6
21-30	24	36.9
31-40	11	16.9
41-50	9	13.8
51-60	2	3.07
>60	1	1.53
Total	65	100.0

Mean \pm SD: 30.36 \pm 11.32

2. GENDER DISTRIBUTION:

Table 2: Gender distribution of patients studied

Gender	Number of patients	%
Male	29	44.6
Female	36	55.4
Total	65	100.0

3. DURATION OF SYMPTOMS IN CERVICAL TUBERCULAR LYMPHADENOPATHY

Table 3: Distribution of duration of neck swelling of patients studied

Duration of neck swelling	Number of patients	%
<1 month	11	16.6
1-2 months	36	55.4
3-5 months	9	13.9
>5 months	9	13.9
Total	65	100.0

4. CONSTITUTIONAL SYMPTOMS

Table 4: Distribution of constitutional symptoms of patients studied

Constitutional symptoms	Number of patients (n=65)	%
Nil	45	69.2
Present	20	30.7

5. HISTORY OF CONTACT WITH TUBERCULOSIS

Table 5: Distribution of H/O contact with tuberculosis of patients studied

H/O contact with tuberculosis	Number of patients	%
Positive	8	12.3
Negative	57	87.7
Total	65	100.0

6. SITE DISTRIBUTION OF CERVICAL TUBERCULAR LYMPHADENOPATHY

Table 6: Distribution of site of involvement in the neck of patients studied

Site of involvement in the neck	Side of neck				Total	
	Right		Left			
	No.	%	No.	%	Number of patients (n=65)	%
Level-I	6	9.23	02	3.07	8	12.30
Level-II	3	4.6	1	1.53	4	6.14
Level-III	05	7.69	06	9.23	11	16.92
Level-IV	10	15.38	05	7.69	15	23.07
Level-V	9	13.84	10	15.38	19	29.23
More than one level	05	7.69	03	4.61	8	12.30
Total	38	58.46	27	41.53	65	100

7. SIZE OF LYMPH NODES IN CERVICAL TUBERCULAR LYMPHADENOPATHY

Table 7: Distribution of Size in cms(Largest in case of multiple nodes) of patients studied

Size in cms	Number of patients	%
<3 cm	56	86.2
>3 cm	9	13.8
Total	90	100.0

8. UNILATERAL/BILATERAL INVOLVEMENT IN CERVICAL TUBERCULAR LYMPHADENOPATHY:

Table 8: Distribution of unilateral/bilateral of patients studied

Unilateral/bilateral	Number of patients	%
Unilateral	59	90.8
Bilateral	6	9.2
Total	65	100.0

ORIGINAL ARTICLE

9. SINGLE/MULTIPLE LYMPH NODES INVOLVEMENT

Table 9: Distribution of single/multiple of patients studied

Single/multiple	Number of patients	%
Single	47	72.3
Multiple	18	27.7
Total	65	100.0

10. NUMBER OF LYMPH NODES AFFECTED

Table 10: Distribution of no of lymph nodes in the neck of patients studied

Lymph nodes in neck	Number of patients	%
1-2	54	83.1
3-5	10	15.4
>5	1	1.5
Total	65	100.0

Mean \pm SD: 1.56 \pm 1.26

11. DISCRETE/MATTED IN CERVICAL TUBERCULAR LYMPHADENOPATHY

Table 11: discrete/matted in cervical tubercular lymphadenopathy

Discrete/matted	Number of patients	%
Discrete	41	(63.07%)
Matted	24	(36.92%)
Total	65	(100%)

12. ESR LEVEL IN CERVICAL TUBERCULAR LYMPHADENOPATHY

Table 12: ESR level in cervical tubercular lymphadenopathy

ESR in mm/hr	Number of patients	%
<20	17	26.2
20-60	30	46.2
>60	18	27.7
Total	65	100.0

Mean \pm SD: 42.75 \pm 33.00

ORIGINAL ARTICLE

13. SPUTUM FOR AFB POSITIVITY IN CERVICAL TUBERCULAR LYMPHADENOPATHY

Table 13: Sputum for AFB positivity in cervical tubercular lymphadenopathy

Sputum for AFB	Number of patients	%
Positive	16	24.61
Negative	33	50.76
Not done	16	24.61
Total	65	100.0

14. CHEST X-RAY POSITIVITY IN CERVICAL TUBERCULAR LYMPHADENOPATHY

Table 14: Chest X-ray positivity in cervical tubercular lymphadenopathy

Chest x-ray	Number of patients	%
Positive	17	26.2
Negative	48	73.8
Total	65	100.0

15. MANTOUX TEST POSITIVITY IN CERVICAL TUBERCULAR LYMPHADENOPATHY

Table 15: Mantoux test positivity in cervical tubercular lymphadenopathy

Montoux test	Number of patients	%
Positive	39	60.0
Negative	15	23.07
Not done	11	16.92
Total	65	100.0

16. FNAC/HISTOPATHOLOGICAL DIAGNOSIS OF 90 CASES OF CLINICALLY DIAGNOSED AS CERVICAL TUBERCULAR LYMPHADENITIS

Table 16a: Distribution of FNAC findings of patients studied

FNAC findings	Number of patients (n=90)	%
Tubercular	52	57.8
RL	16	17.8
HL	1	1.1
NHL	2	2.2
Metastatic	1	1.1
Inconclusive	18	20.0

ORIGINAL ARTICLE

Table 16b: Distribution of Histopathological diagnosis of patients of inconclusive based on FNAC

Histopathological diagnosis	Number of patients (n=18)	%
Tubercular	13	72.0
RL	3	16.7
NHL	1	5.6
Metastatic	1	5.6

17. CYTOLOGICAL FINDINGS OF FNAC/BIOPSY IN CERVICAL TUBERCULAR LYMPHADENOPATHY

In the present study, it was observed that, 52 cases were diagnosed by FNAC and 13 cases by Biopsy.

Table 17a: Distribution of FNAC findings of patients studied

FNAC findings	Number of patients	%
Granulomatous	36	55.38
Caseated	12	18.46
Cold abscess	4	6.15
Total	52	80

Table 17b: Distribution of Biopsy findings of patients studied

Biopsy findings	Number of patients	%
Granulomatous	4	6.15
Caseated	2	3.07
Cold abscess	7	10.76
Total	13	20

18. CYTOLOGY/BIOPSY IN RELATION TO DURATION OF CERVICAL TUBERCULAR LYMPHADENOPATHY

Table 18: Correlation of Final diagnosis with duration of swelling

Duration of swelling	Final diagnosis		
	Granulomatous (n=40)	Caseated (n=14)	Cold abscess (n=11)
<1 month	10(25%)	0(0%)	1(9.1%)
1-2 months	27(67.5%)	6(42.9%)	3(27.3%)
3-5 months	2(5%)	4(28.6%)	3(27.3%)
>5 months	1(2.5%)	4(28.6%)	4(36.4%)

19. TREATMENT

Table 19: Distribution of treatment given of patients studied

Treatment		Number	%
Chemotherapy (ATT)	DOTs	42	64.61
	Daily regimen	23	35.38
	Total	65	100
Surgery	Diagnosis	13	20
	Treatment(in addition to ATT)	6	9.23
	Total	19	29.23

DISCUSSION: In our series of 90 cases which were clinically diagnosed as cervical tubercular lymphadenitis 65 cases were confirmed as tubercular lymphadenitis, 19 cases turned out as reactive lymphadenitis, 4 cases reported as Lymphoma and 2 cases were found to have Metastatic secondary's. Confirmed cases of tubercular lymphadenitis were analysed.

CORRELATION OF RESULTS WITH FINAL DIAGNOSIS

Table 20: Correlation of Final diagnosis with age, gender

Variables	Final diagnosis			P value
	Granulomatous (n=40)	Caseated (n=14)	Cold abscess (n=11)	
Age in years				
• 17-20	10(25%)	5(35.7%)	3(27.3%)	0.012*
• 21-30	18(45%)	2(14.3%)	4(36.4%)	
• 31-40	4(10%)	7(50%)	0(0%)	
• 41-50	6(15%)	0(0%)	3(27.3%)	
• >50	2(5%)	0(0%)	1(9.1%)	
Gender				
• Male	18(45%)	5(35.7%)	6(54.5%)	0.681
• Female	22(55%)	9(64.3%)	5(45.5%)	

ORIGINAL ARTICLE

Table 21: Correlation of Final diagnosis with duration of swelling

Duration of swelling	Final diagnosis		
	Granulomatous (n=40)	Caseated (n=14)	Cold abscess (n=11)
<1 month	10(25%)	0(0%)	1(9.1%)
1-2 months	27(67.5%)	6(42.9%)	3(27.3%)
3-5 months	2(5%)	4(28.6%)	3(27.3%)
>5 months	1(2.5%)	4(28.6%)	4(36.4%)
Inference	Higher duration is significantly associated with cold abscess with P<0.001**		

Table 22: Correlation of Final diagnosis with constitutional symptoms

Constitutional symptoms	Final diagnosis		
	Granulomatous (n=40)	Caseated (n=14)	Cold abscess (n=11)
Nil	28(70%)	9(64.3%)	8(72.7%)
Present	12(30%)	5(35.7%)	3(27.3%)
Inference	Constitutional symptoms are not statistically associated with Final diagnosis with P=0.930		

Table 23: Correlation of Final diagnosis with H/o contact with tuberculosis

H/o contact with tuberculosis	Final diagnosis		
	Granulomatous (n=40)	Caseated (n=14)	Cold abscess (n=11)
Positive	4(10%)	3(21.4%)	1(9.1%)
Negative	35(87.5%)	11(78.6%)	10(90.9%)
Inference	H/O contact with tuberculosis is not statistically associated with Final diagnosis with P=0.563		

Table 24: Correlation of Final diagnosis with Laterality

Laterality	Final diagnosis		
	Granulomatous (n=40)	Caseated (n=14)	Cold abscess (n=11)
Unilateral	38(95%)	11(78.6%)	10(90.9%)
Bilateral	2(5%)	3(21.4%)	1(9.1%)
Inference	Laterality is positively associated with Final diagnosis(Caseated) with P=0.120		

ORIGINAL ARTICLE

CONCLUSION: Tuberculosis is an important disease, one of the commonest disease affecting lymph nodes. It is curable with anti tubercular drugs if administered according to WHO guidelines under RNTCP. In our Kempegowda Institute of Medical Science Bangalore, has adopted DOTs strategy as most of the patients were treated under it in the study series. A constitutional symptom in cervical tubercular lymphadenitis has limited significance and clinical behavior can be highly variable.

FNAC deemed as frontline investigation with further investigations based on FNAC result. However, histopathological examination remains the most dependable diagnostic tool. Early diagnosis and complete treatment will prevent further progression of the disease and helps to cure it. Surgical intervention is definitely required in many cases, though; most of the cases are medically curable. Successful outcome depends upon appropriate chemotherapy and timely surgical intervention when necessary.

Cervical lymphadenopathy is an important disease, commonly come across and always calls for meticulous attention, analysis and treatment.

BIBLIOGRAPHY:

1. M. Minor Madakour, Kitab E ,AL-Otaibi, R. AL Swailem. Text book of Tuberculosis. Page no, 15-26 & 153-160.
2. Ayesha Sarwar, Anwar Ul Haque, Spectrum of Morphological Changes in Tuberculous Lymphadenitis. International Journal of Pathology;2004;2(2):85-89.
3. Leong Anthony SY and Craig L James. Cytological specimen. Hand book of surgical pathology, 1st edn 1996: 205-209.
4. Dr. Pamra. S.P, Dr. Sen, P.K. Indian Journal of Tuberculosis Official organ of the Tuberculosis Association of India, Vol. XXXII : No. 3 July 1985.
5. Dilip K. Das. Fine-Needle Aspiration Cytology in the Diagnosis of Tuberculous Lesions. Laboratory Medicine, Vol 31, Nov 2000.
6. Henry A. Mwakyoma. Fine needle aspiration cytology and the choice of fixatives in the diagnosis of tuberculous adenitis at Muhimbili National Hospital, Dar-es-Salaam, Tanzania journal of health research. Vol-12, Nov 3, 2010.
7. Newcombe JF. TB cervical lymphadenitis, Post graduate Med J, 1971;47:713- 717.
8. Shamshad Ahmad S, Study of Fine Needle Aspiration Cytology in Lymphadenopathy with Special Reference to Acid-fast Staining in Cases of Tuberculosis. Vol. 7 No. 1, January-March 2005. Karnataka Medical Journal, Jan-March 1998;68(2):6.
9. Gauri Bazaz-Malik and Rajiv Sen. Pattern of extra-pulmonary tuberculosis an experience of twenty-five years. Ind. J. Tub., 1985, 32, 148.
10. Narang R.K. et al. Place of FNAC in the diagnosis of lymphadenopathy. Ind. J. Tub., 1990, 37, 29
11. Singh U R and Bhatia A. Cytologic diagnosis of tuberculous Lymphadenitis in children by FNA. Ind j of Paediatrics,1992;59:115-118.
12. Srivastava R.K. et al. Programmatic management of multi drug resistant TB. Indian Journal of Tuberculosis Vol. 56 New Delhi, October, 2009 No. 4.
13. TB India annual report; 2012. RNTCP guidelines.
14. Research committee on TB Association of India (RCTAI). Cervical lymphadenitis, Ind J TB, 1987;34:96-100.

ORIGINAL ARTICLE

15. Christian Garbar, et al. Fine needle aspiration cytology of lymph node. ACTA CYTOLOGICA. Vol 52; no 4; July-August 2008.
16. Pambuccian SE and Bardales, Lymph node cytopathology, V-II, P-287: 2011.
17. Thomas J Smith, et al, Accuracy and Cost-Effectiveness of Fine Needle Aspiration Biopsy. The American J of Surgery Vol-149,1985
18. Purohit S D. et al. A novel clinical scoring method for diagnosis of tubercular cervical lymphadenitis. Ind. J. Tub., 1987, 34, 22.
19. Dandapat M.C Diagnosis of Tubercular lymphadenitis by FNAC, Ind. J. Tub., 1987, 34, 139-142.
20. Soumitesh Chakravorty, et al. Diagnosis of Extrapulmonary Tuberculosis by smear, Culture and PCR Using Universal sample Processing Technology. J of clinical Microbiology;2005, 43(9):4357.
21. Gupta Arun K and Nayyar Mohini. Critical appraisal of FNAC in TB
22. Arora. B. and Arora D.R. Fine needle aspiration cytology in diagnosis of tuberculous lymphadenitis. Ind. J. Med. Res(A) 91, May1990:189-192.
23. Hooper AA. TB peripheral lymph nodes, British Journal of Surgery, Now 5, May 1972;89:353-359.
24. Juan Rosai. Lymph nodes. Ackerman's surgical pathology Vol:II, 8th edn. Mosby 1661-1773.
25. Patel RV and Mehta RT. Short term treatment of TB lymphadenitis. Ind. J Surgery, 1987;49:336-341.
26. Bedi RS et al. Clinicopathological study of superficial lymphadenopathy in northern India. Ind J TB 1987;34:189-191.
27. Paria KK and Gnosn RK et al. Study on clinically diagnosed TB cervical lymphadenitis not responding to standard anti tuberculous chemotherapy. Ind J TB, 1985;32:133-135.

AUTHORS:

1. Sreenidhi G.M.
2. Nandeeshkumar G.N.

PARTICULARS OF CONTRIBUTORS:

1. Associate Professor, Department of General Surgery, Kempegowda Institute of Medical Sciences, Bangalore.
2. Junior Resident, Department of General Surgery, Kempegowda Institute of Medical Sciences, Bangalore.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Sreenidhi G.M.,
Associate Professor,
Department of General Surgery,
Kempegowda Institute of Medical Sciences,
V.V. Puram, Bangalore.
Email – dr.nandeeshkumar9@gmail.com

Date of Submission: 15/10/2013.

Date of Peer Review: 17/10/2013.

Date of Acceptance: 25/10/2013.

Date of Publishing: 31/10/2013