

**Cervical Lymphadenopathy: A Clinicopathological Study**Girraj Singh<sup>1</sup>, Amit Joon<sup>2</sup>, Ritika Kansal<sup>3</sup><sup>1</sup>Assistant Professor, Department of Otorhinolaryngology, G S Medical College and Hospital, Pilkhuwa, UP<sup>2</sup>Associate Professor, Department of Community Medicine, G S Medical College and Hospital, Pilkhuwa, UP<sup>3</sup>Associate Professor, Department of Pathology, G S Medical College and Hospital, Pilkhuwa, UP

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Conflict of interest: Nil

**Abstract:****Background:** Aim of the study was to evaluate the commonest presentations of underlying pathology of the head and neck region in patients presenting with cervical lymphadenopathy.**Methods:** The present study is a prospective study conducted in G S medical college and hospital, pilkhuwa. Our study included 100 patients with cervical lymphadenopathy are more than 02 years of age, from August 2022 to July 2023 were included.**Results:** Tuberculosis was found to be the most common cause of cervical Lymphadenopathy in 50% cases followed by reactive lymphadenitis in 34% cases, chronic nonspecific lymphadenitis in 7% cases and metastatic lymphadenopathy in 6% cases. Other causes were unknown primary in 2% cases and non-Hodgkin's lymphoma in 1% cases. Sensitivity and specificity of FNAC was 85% and 100% respectively.**Conclusions:** Tuberculosis, reactive lymphadenitis and malignancy are the most important cause of cervical Lymphadenopathy. They present in different age groups with different clinical feature. Fine Needle Aspiration Cytology (FNAC) is extremely sensitive and highly specific investigation for early diagnosis.**Keywords:** Cervical lymphadenopathy, FNAC, Tubercular lymphadenitis, Reactive lymphadenitis, Malignant lymphadenitis.

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**Introduction**

The term lymphadenopathy refers to nodes that are abnormal in size, shape, consistency or number. [1,2] Cervical lymphadenopathy is a common type of peripheral lymphadenopathy. Lymph node enlargement may be due to malignancy, infections, and autoimmune diseases, other unusual and iatrogenic conditions. [3] The body has about 600 lymph nodes of which approximately 60-70 nodes are situated in the head and neck region. [4]

The study of lymph node enlargement in the neck is always a challenging task and the diagnosis of the disease is a problem because most of the diseases resemble each other. Inappropriate diagnosis and the treatment may change a potentially curable disease into an incurable one. So, a clinicopathological correlation is always required. [5-8] The standard modality in the workup of a neck mass is fine needle aspiration (FNA). FNA can be used for both cytology and culture (in cases in which a suspected infectious neck mass does not respond to conventional antibiotic therapy). If FNA is unsuccessful or if sufficient information is not obtained from an initial FNA, the FNA should be repeated before open biopsy. [9]

**Methods**

This hospital based prospective study was carried out in the out-patient and in-patient department of G S medical college and Hospital, pilkhuwa in one year (August 2022 to July 2023) in the Patients attending the opd of ENT. Patients with age more than 02 years having sub-acute cervical lymphadenitis in whom the lymph node did not regress after adequate antibiotic trial (i.e. Conservative management for at least 2 week), and all the patients with chronic cervical lymphadenopathy are included in our study. A detailed clinical history was elicited. Age, sex, duration of symptoms, constitutional symptoms, history of contact with tuberculosis patient and other relevant aspects were noted.

Generalized systemic examination was performed, followed by detailed local examination. All parameters regarding lymph node like size, site, number, location, consistency, laterality, matting or discreteness, mobility, secondary changes, level of lymph node and involvement of other lymph node (inguinal / axillary) groups were carefully noted.

Detailed ENT examination was carried out to find out any dental infection, tonsillar pathology or head and neck malignancy. An attempt was made to find out the primary site in case of cervical lymph node suspicious of malignant deposits on clinical examination.

After establishing a provisional clinical diagnosis, further investigations were carried out to confirm the diagnosis. These included Routine haematological investigations like Haemoglobin estimation, total and differential leukocyte count, ESR, Liver function test and blood sugar level were established as preoperative investigation. All patients underwent ELISA for HIV infection.

X ray Chest, USG neck and FNAC were done in all patients. CT scan of neck was performed for searching primary in cases of occult primary.

All the findings were noted in pretested proforma and proper statistical analysis were performed.

#### Method of measurement

Based on duration lymphadenopathy was classified as:

1. Acute lymphadenopathy: 2 weeks duration
2. Chronic lymphadenopathy: Any cervical

lymphadenopathy that does not resolve by 6 weeks.

3. Adequate antibiotic trial: A broad spectrum antibiotic was given and reassessment in 2 weeks was done.

#### Results

The present study comprises 100 cases of Cervical Lymphadenopathy. Different clinic demographical variable studied. The observations and results of present study are as below.

In the present study, the youngest patient was 02 year of age and oldest patient was 74 years old. The majority of patients affected were in the age group of 10 to 20 years (42%) followed by 21 to 30 years (23%). The least affected age group was 61 to 70 years (1%). There were 80 males and 20 females. The male to female ratio in present study was 4:1.

In the present study, neck swelling was present in all cases (100%). Fever was the second most common symptom in 72 cases (72%), followed by loss of weight in 61 patient (61 %), malaise in 21 patients (21%), loss of appetite in 45 patient (45%), cough in 25 cases (25%) difficulty in swallowing in 10 patient (10%), and change in voice was present in 05 (5%) respectively (Table 1).

**Table 1: Distribution of cases of cervical lymphadenopathy according to presenting complaints**

Sr. No.	Presenting Complaint	No. of Cases	Percentage
1	Neck Swelling	100	100%
2	Fever	72	72%
3	Cough	25	25%
4	Loss of appetite	45	45%
5	Difficulty in Swallowing	10	10%
6	Loss of Weight	61	61%
7	Malaise	21	21%
8	Change in Voice	5	5%

**Table 2: Distribution of cases of cervical lymphadenopathy according to etiology**

Sr. No	Etiology	No. of Cases	Percentage
1	Tuberculosis	50	50%
2	Reactive Lymphadenitis	34	34%
3	Metastatic	6	6%
4	Chronic Non Specific Lymphadenitis	7	7%
5	Unknown Primary	2	2%
6	Non Hodgkins Lymphoma	1	1%
	Total	100	100%

**Table 3: Distribution of cases of cervical lymphadenopathy in different etiologies according to gender**

Sr. No.	Gender	TBCL		RL		MET		CNSL		UP		NHL	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	Male	36	36%	15	15%	5	5%	5	5%	1	17%	1	1%
2	Female	14	14%	19	19%	1	1%	2	2%	1	1%	0	0.00%
	Total	50	50%	34	34%	6	6%	7	7%	2	2%	1	1%

**Table 4: Sensitivity and specificity of FNAC in diagnosis of tuberculous lymphadenitis**

Sr. No.	FNAC	Tuberculous cervical LNP		Total
		Positive	Negative	
1	Positive	35	0	35
2	Negative	15	50	65
	Total	50	50	100

In the present study out of 100 cases of cervical lymphadenopathy 91 cases (91%) were non-neoplastic and 9 cases (9%) were neoplastic. Tuberculosis was found to be the most common cause of cervical lymphadenopathy in 50 cases (50%) followed by reactive lymphadenitis in 34 cases (34%), chronic nonspecific lymphadenitis in 7 (7%) case and metastatic lymphadenopathy in 6 cases (6%), Other causes were unknown primary in 2 cases (2%) and non-Hodgkin's lymphoma in 1 cases (1%) (Table 2).

Tuberculous lymphadenitis, metastasis, chronic lymphadenitis and Non-Hodgkin's lymphoma are more common in male then female. Unknown primary have equal incidence in male and female while reactive lymphadenitis is more common in female than male.

Sensitivity of FNAC in diagnosis of tuberculosis was found to be 85% whereas specificity was found to be 100% (Table 5).

### Discussion

In present study 100 patients with cervical lymphadenopathy were evaluated to assess Clinicopathological profile and identify various aetiologies causing cervical lymphadenopathy. The study group comprised of 80% males and 20% females. There was male predominance with male to female ratio of 4:1. However this difference was statistically significant.

The frequently affected age group was 21 to 30 years in male (19.13%) and 13 to 20 years in females (23.48%). The mean age in this series was 28.84 ± 5.5 years. Overall the most common age group affected was 10 to 20 years (42%). [10-16]

In the present study, Neck swelling was present in all cases (100%). Fever was the second most common symptom in 72%, followed by loss of weight in 61 %, malaise in 21%, loss of appetite in 45%, cough in 25%, difficulty in swallowing in 10%, and change in voice was present in 5% respectively. [10,15,17]

In the present study out of 100 cases of cervical lymphadenopathy 91% were non-neoplastic and 9% were neoplastic. Tuberculosis was found to be the most common cause of cervical Lymphadenopathy in 50% followed by reactive lymphadenitis in 34%, chronic nonspecific lymphadenitis in 7% case and metastatic lymphadenopathy in 6%. Other causes were unknown primary in 2% and non-Hodgkin's

lymphoma in 1% of cases. [10,14,15,18-20] Age distribution according to aetiology showed that non-malignant cervical lymphadenopathy was common in age less than 40 years, while malignant cervical lymphadenopathy was common after 40 years of age. This difference was not significant statistically. [10,13,21-23]

Tuberculosis, chronic non-specific lymphadenitis, metastatic cervical Lymphadenopathy was more common in males. This difference was statistically significant. While reactive cervical lymphadenopathy was more common in females. [10,13,24]

Tuberculous cervical lymphadenopathy is a frequent disease in India. Therefore it is important that a high index of suspicion for tubercular lymphadenopathy is required. Early diagnosis & treatment will cure the disease and also it prevents complications like cold abscess & sinus formation. It was observed that metastatic cervical lymphadenopathy constituted 6%, unknown primary constituted about 2% and non-Hodgkin lymphoma constituted only 1% of total cervical lymphadenopathy cases.

In the present study, sensitivity and specificity of FNAC in diagnosing tuberculosis was assessed and it was found that sensitivity and specificity of FNAC was 85% and 100% respectively. [10,24-25]

### Conclusion

In our study tuberculosis, reactive lymphadenitis and malignancy are the most important cause of cervical Lymphadenopathy in our population under study. They present in different age groups with strikingly different clinical feature. Careful clinical examination should be able to reveal the diagnosis. Fine Needle Aspiration Cytology is extremely sensitive and highly specific investigation for early diagnosis.

### References

1. King D, Ramachandra J, Yeomanson D. Lymphadenopathy in children: refer or reassure?"Archives of disease in childhood. Education and practice. 2014; 99:101-10.
2. Mohseni S, Shojaiefard A, Khorgami Z, Alinejad S, Ghorbani A, Ghafouri A. Peripheral lymphadenopathy: approach and diagnostic tools. Iranian j med sci. 2014; 39(2):158.
3. Biswas G, Das A, Haldar D, Mukherjee A, Dutta S, Sinha R. Clinico-pathological correlates of cervical lymphadenopathy: a

- hospital-based study. *Indian J Otolaryngol Head Neck Surg.* 2013; 65(1):42-7.
4. Ramadas AA, Jose R, Varma B, Chandy ML. Cervical lymphadenopathy: Unwinding the hidden truth. *Dental res J.* 2017; 14(1):73.
  5. Sreenidhi GM, Nandeeshkumar GN. Clinicopathological study of cervical tubercular lymphadenopathy at KIMS hospital Bangalore. *J Evolution Med Dental Sci.* 2013; 2(44):8655-67.
  6. Chamyal PC, Sabarigirish K. Clinico-pathological correlation study of cervical lymph node masses. *Indian J Otolaryngol Head Neck Surg.* 1997; 49(4):402-5.
  7. Bazemore A, Smucker DR. Lymphadenopathy and malignancy. *Am family physician.* 2002; 66(11):2103.
  8. Ferrer R. Lymphadenopathy: differential diagnosis and evaluation. *Am family physician.* 1998; 58(6):1313.
  9. Cummings Otolaryngology Head & Neck Surgery, Fifth Edition. Vol 2, Section 6. Chapter 116. Differential Diagnosis of Neck Masses.
  10. Jha BC, Das A Nagarkar NM, Gupta R, Singhal S. Cervical Tuberculosis Lymphadenopathy: changing clinical pattern and concept in management. *BMJ Post graduate Med J.* 2000; 7(7):185-7.
  11. Bedi RS, Thind GS, Arora VK. A Clinico-Pathological, study of superficial Lymphadenopathy In Northern India. *Intl J Tub.* 1987; 3(4):189-92.
  12. Shafiullah S, Shah SH Rehman A, Arshad H, Norin B. Tuberculosis lymphadenitis in Afghan Refugee. *J Ayub Med Coll Abbottabad.* 2001; 20(2):463-5.
  13. Mutiullah S, Ahmad Z, Yunus M, Marphani MS. Evaluation of tuberculous cervical Lymphadenopathy. *Pakistan J Surg.* 2009; 25(3):176-8.
  14. Umer MF, Mehandi H, Muttaki A, Hussain A. Presentation and etiological aspects of cervical Lymphadenopathy at Jinnah Medical College Hospital Korangi, Karachi. *Pak J Surgery.* 2009; 25(4):224-46.
  15. Wahid F, Rehman H, Iftikhar A. Extrapulmonary tuberculosis in patients with cervical Lymphadenopathy. *JPMA.* 2013; 6(3):94-6.
  16. Saeed I, Anjum S, Akhlaq M. Frequency of Tuberculosis in Cervical Lymphadenopathy.
  17. Jalal BA, Elshibly EM. Etiology and clinical pattern of cervical Lymphadenopathy in Sudanese children. *J Paediatr.* 2012; 12(1):97-100.
  18. Maharjan M, Hirachand S, Kafie PK, Bista M, Shrst S et al. Incidence of tuberculosis in enlarge neck node our experience. *Kathmandu Univ Med J.* 2009; 7(25):54-5.
  19. Baskota DK, Prasad R, Kumar, Sinha B, Amatya RL, Distribution of lymph nodes in the neck in case of tuberculous lymphadenitis. *Acta Otolaryngol.* 2004; 124(9):1095-8.
  20. Iqbal M, Subhan A, Aslam A. Frequency of tuberculosis in cervical Lymphadenopathy. *J Surg Pak (Int).* 2010; 15(2):107-9.
  21. Kim LH, Peh SC, Chan KS, Chai SP. Pattern of lymph node pathology in private pathology laboratory, Malaysia. *J Pathol.* 1999; 21(2):87-93.
  22. Jawahar MS, Sivasubramanian S, Vijayan VK. Treatment of lymph node tuberculosis-a randomised clinical trial of two 6 months regimens. *Trop Med Int Health.* 2005; 10:1090-8.
  23. Ahmad SS, Akhter S, Akhter NK, Mansoor, T Khalil S. Incidence of tuberculosis from study of fine needle aspiraion In Lymphadenopathy and acid fast staining. *Indian J Comm Med.* 2005; 30(2).
  24. Rehman MA, Biswas MMA, Siddika ST, Sikder AM. Histomorphological pattern of Cervical Lymphadenopathy. *J Enam Med.* 2013; 3(1):13-7.
  25. Dwarsoki I. Tuberculosis of cervical Lymph nodes. *Plucne Bolesti.* 1989; 4(34):169-71.