



## A PROSPECTIVE STUDY ON CLINICO-PATHOLOGICAL ANALYSIS OF CERVICAL LYMPHADENOPATHY

<b>Dr. Basila Ali*</b>	Final year postgraduate, Department of General Surgery, Yenepoya Medical College and Hospital, Mangalore, Karnataka, India *Corresponding Author
<b>Dr. Keith Luis Gomes</b>	Senior Resident, Department of General Surgery, Yenepoya Medical College and Hospital, Mangalore, Karnataka, India
<b>Dr. Nancy Parul Singh</b>	Assistant Professor, Department of General Surgery, Yenepoya Medical College and Hospital, Mangalore, Karnataka, India
<b>Dr. Ramdas Rai</b>	Professor, Department of General Surgery, Yenepoya Medical College and Hospital, Mangalore, Karnataka, India

### ABSTRACT

**Background and Objectives:** Cervical lymphadenopathy is a presenting sign of common problem that physicians and surgeons likely to face. For surgeons lymph node is an index of spread of infection and malignancy. In cervical lymphadenopathy, the most likely diagnosis is probably tuberculosis and malignancy or lymphoma's. Fine needle aspiration Cytology (FNAC), is a well established procedure for the evaluation of lymphadenopathy which occurs in a wide spectrum of diseases. FNAC helps to a great extent in providing a quick diagnosis in most of the patients. The study intends to find out systematically the various pathological conditions presenting with enlarged lymph nodes in the neck, also the various modes of clinical presentation and behaviour of these conditions. The role of FNAC in diagnosis of cervical lymphadenopathy has will also be studied.

**METHODS :** All patients with Cervical Lymphadenopathy presenting in the Surgery ,Department of Yenepoya Medical College Hospital, Deralakatte, Mangalore were included in the study. Cases which were referred from other departments, neighboring PHC's and hospitals were also included. A detail clinical history taken, clinical examination of the patient carried out. A clinical diagnosis was arrived at and further investigations were done to confirm the diagnosis. All patients undergone fine needle aspiration cytology and blood examination as routine. Radiological examination of chest was carried out to find out association of primary lesion in the lung. Biopsy was done where histo-pathological evidence was necessary. Treatment was instituted appropriately and follow-up done.

**RESULTS :** Of the 80 cases studied 66 % cases were non-neoplastic lesions of the lymph node whereas the remaining 34% were neoplastic. The male to female ratio was 1.28: 1. Cases occurred in the age group of 2 years to 73 years. Most of the patients (20%) in this study were in the age group of 51-60 years. Reactive lymphadenitis was the most common cause of cervical lymphadenopathy followed by metastasis.

**CONCLUSION :** The clinical behaviour of cervical lymphadenopathy can be highly variable and so a thorough clinical and pathological analysis of lymph nodes is very important. FNAC can be deemed as a frontline investigation with biopsy and histopathological examination done for confirmation in doubtful cases. FNAC is a very efficient, simple, safe, inexpensive and economical test for detecting the various causes of lymphadenopathy.

**KEYWORDS :** Cervical lymphadenopathy; neoplastic; non – neoplastic; Reactive lymphadenitis, metastasis; FNAC.

### INTRODUCTION

The lymph nodes are major components of the lymphatic system clustered in small groups or chains at strategic locations where they drain the lymphatic vessels of various anatomic regions. The drainage involves not only the mechanical filtration of foreign bodies in the lymph but also the recognition and processing of antigens. The lymph nodes exhibit a complex architecture in which a variety of cell populations are arranged in distinct interfacing compartments. This provides a favorable environment in which the various cellular components can process antigens, interact and generate the immune response. Lymphadenopathy is a presenting sign of a common problem that physicians and surgeons often to face. Systemic symptoms such as malaise, fever or weight loss may or may not be present and routine laboratory investigations often fail to reveal an answer. Persistent lymph node enlargement without adequate cause requires a tissue diagnosis. Lymph node biopsy is simple and safe but it is not free from worry and discomfort for the patient and it requires surgical operating time and a general or local anesthetic and risk of injury to the vital structures e.g., vessels and nerves. For a surgeon, the lymph node is an index of spread of infection and malignancy. Cases of lymphadenopathy are common in our country. There are many causes of enlargement of lymph nodes. Lymph node biopsies are the only certain means of establishing the diagnosis. The microscopic interpretation of abnormal lymph node is extremely difficult. More errors are made on the lymph node than any other organ in the body.

### OBJECTIVE AND AIMS OF THE STUDY

To study the clinical modes of presentation and age and sex of

distribution of cervical lymphadenopathy among patients attending the outpatient department at YMCH.

To study the role of FNAC in diagnosis of cervical lymphadenopathy. To correlate the clinical diagnosis with the pathological findings. To study the management, outcome and clinical behaviour of cervical lymph nodes on follow up.

### METHODOLOGY

The present study was carried out at The Yenepoya Medical College, Mangalore over a period of two years from October 2015 to October 2017. It is a prospective study of patients admitted in Yenepoya Medical College Hospital with Cervical lymphadenopathy >2weeks. The study consists of 80 consecutive cases; diagnosis is based on clinicopathological findings.

### SOURCE OF THE DATA

All patients with Cervical Lymphadenopathy presenting in the Surgery Department of Yenepoya Medical College Hospital, Deralakatte, Mangalore were included for the study. Cases which were referred from other departments, neighboring PHC and hospital were also included.

### METHOD OF COLLECTION OF DATA

#### INCLUSION CRITERIA

- All patients presenting with enlargement of cervical lymph nodes more than 1 week.
- Enlarged cervical lymph nodes more than 1.5 cm in diameter.

**EXCLUSION CRITERIA**

- Enlarged lymph nodes less than 1.5 cm in diameter.
- All other neck swellings other than cervical lymphadenopathy.

A proforma drafted for study of all patients presenting with cervical lymph node swellings was used. A detailed history was taken and a 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. In local examination, importance was given to the site, size, laterality, number, matted/discrete, secondary changes, level of the cervical lymph nodes and involvement of other (inguinal/axillary) lymph nodes. Systemic examination also carried out. An attempt was made to find out the primary tumour in cases of lymph nodes suspicious as secondaries in neck.

After making a clinical diagnosis, further investigations were carried out to confirm the diagnosis. Routine investigations included haematological and radiological. Blood Examination included Haemoglobin, total count, differential count and ESR. HIV testing was also carried out. Chest X-ray was to rule out pulmonary pathology. Ultrasound of neck and abdomen was done in few selected cases of Lymphoma and tuberculosis. FNAC was put in the front line for diagnosing and to get a cytological diagnosis at hand. Lymph node biopsy was carried out meticulously, it was studied grossly, and sent to pathologist for expert opinion. Further tests were carried out on the basis of histopathological diagnosis like immunohistochemistry. Having come to conclusion of diagnosis, treatment was instituted appropriately. All patients were asked to attend the surgical outpatient department for follow-up after discharge. Necessary advice was given.

**RESULTS**

In the present series 80 cases were evaluated for cervical lymph node enlargement. Maximum number of cases, that is 16 cases (20%) were between 51-60 years age group and the male to female ratio was 1.28:1.

**Table No 1- Age distribution of Cervical lymphadenopathy**

AGE GROUP (YEARS)	NUMBER OF CASES	PERCENTAGE
0-10	10	12.5
11-20	14	17.5
21-30	13	16.25
31-40	9	11.25
41-50	10	12.5
51-60	16	20
61-70	5	6.25
71-80	3	3.75
TOTAL	80 CASES	100 %

**Table No 2- Neoplastic and non-neoplastic cervical lymph nodes**

	Neoplastic	NON-NEOPLASTIC
Number of cases	27	53
Percentage of cases	34	66
Total		80 CASES

The neoplastic group made up 34% of the cases whereas the non-neoplastic group made up 66% of cases

**Table No 3- FNAC diagnosis**

FNAC diagnosis	Number of cases	Percentage of cases
Reactive lymphadenitis	32	40
Metastases to lymph node	22	27.5
Tuberculous lymphadenitis	16	20
Suppurative lymphadenitis	4	5
Lymphoma	5	6.25
Necrotising histiocytic lymphadenitis	1	1.25
TOTAL	80 CASES	100%

Among the lesions affecting neck lymph nodes reactive hyperplasia was the most common etiology followed by metastasis and Tuberculosis.

**Table No 4- Level of cervical lymph node involved**

LEVEL OF CERVICAL LYMPH NODE	NUMBER OF LYMPH NODES INVOLVED
I	14
II	30
III	21
IV	15
V	23
VI	2
VII	2

Level II group of cervical lymph nodes were the most commonly involved cervical lymph nodes followed by the level V group and level III.

**Table No 5- Unilateral versus Bilateral cervical lymph nodes**

	NUMBER OF CASES	PERCENTAGE
Unilateral lymph nodes	50	62.5
Bilateral lymph nodes	30	37.5

Unilateral involvement of lymph nodes was observed to be more common

**Table No 5- Distribution of primary in malignant secondaries in neck**

Primary site of malignancy	Histopathological diagnosis	Number of cases
Larynx	Squamous cell carcinoma	2
Cheek	Squamous cell carcinoma	8
Lip	Squamous cell carcinoma	3
Tongue	Squamous cell carcinoma	4
Esophagus	Squamous cell carcinoma	2
Thyroid	Papillary carcinoma	2
Unknown	Adenocarcinoma	1

Of the 22 cases of malignant secondaries, 8 were from the cheek, 4 from the tongue, from the lip and 2 were from the larynx, esophagus and thyroid each. The remaining 1 case had unknown primary.

**Table No 6- Types of Lymphoma**

TYPE OF LYMPHOMAS	NUMBER OF CASES
Hodgkin's lymphoma	3
Non-Hodgkins lymphoma	2
TOTAL	5

A total of 5 cases of lymphoma were detected during this study. 60% of cases were Hodgkin's lymphoma whereas 40% were Non-Hodgkin's lymphoma.

**Table No 7 -Table showing contact in Tuberculous lymphadenopathy**

Tuberculous lymphadenopathy	Number	Percentage
With contact	4	25
Without contact	12	75

It was observed that only 4 cases (25%) out of 16 cases had a positive history of contact with a patient suffering from tuberculosis.

**Table No 8 -Incidence of presenting symptoms**

Presenting symptoms	Number of cases
Neck swelling	80
Fever	30
Change of voice	2

Cough	32
Malaise	28
Difficulty in swallowing	6
Loss of appetite	24
Loss of weight	26

The most common presenting symptom in the patients was a swelling in the neck. Most patients had fever with cough. Loss of weight with loss of appetite was also observed in a significant number of patients mainly those suffering from malignancy and tuberculosis.

## DISCUSSION

In the present study, findings include:

- Out of the 80 cases of cervical lymphadenopathy, all 80 underwent fine needle aspiration for cytology. The other relevant investigations were also done for comparison.
- 40% cases were confirmed as reactive lymphadenitis, 27.5% cases as metastasis, 20% cases as Tuberculosis, 6.25% as lymphomas, 5% as suppurative lymphadenitis and 1.25% cases as necrotizing histiocytic lymphadenitis. Thus reactive lymphadenitis was the commonest etiology for cervical lymphadenopathy in the present series.
- Majority of the patients (20%) were between 51-60 years age group.
- In the present study 45 cases were males and 35 cases were females. Thus there is a male predilection with a male to female ratio of 1.28:1.
- There were 53 non-neoplastic lesions and 27 neoplastic lesions in the present study.
- The level II cervical group of lymph nodes was the most commonly affected. Most of the lymph nodes were between 2-4cm.
- 62.5% of the lymph nodes were localized to one side of the neck.
- Multiple cervical lymph nodes were present in most (58%) of the patients.
- Positive history of contact with tuberculosis was seen only in 25% cases confirmed as tubercular lymphadenitis.
- FNAC by virtue of it being inexpensive, quick in getting the results and easy to perform, is one of the important and essential diagnostic procedure. Besides, it can be deemed as a first line invasive investigation for cervical lymphadenopathy.
- Short course chemotherapy for tubercular lymphadenitis is highly satisfactory with a cure rate of over 90%. Surgery should be restricted as an adjuvant to chemotherapy, as diagnostic biopsy, for treatment of abscess/sinuses and for lymph nodes that do not resolve with chemotherapy.

## CONCLUSION

- Cervical lymphadenopathy is an important disease, commonly come across, and always calls for meticulous attention, analysis and treatment.
- Clinical symptoms in cervical lymphadenopathy can be highly variable. Dependence on clinical evidence alone would lead to erroneous diagnosis in a considerable number of cases. A thorough clinical examination with appropriate investigations is a must to a reasonable diagnosis.
- Cervical lymphadenopathy affects people across all age groups with the cause varying with age. The most common causes of cervical lymphadenopathy are Reactive lymphadenitis, metastasis, Tuberculosis and Lymphoma.
- Fine needle aspiration is a simple, quick, cost effective and minimally traumatic procedure.
- It serves as a rapid method of establishing the presence of metastasis with / or without a history of malignancy.
- It gives clues about the nature of the primary in case of metastases and thus plays an important role in the management of these patients.
- The factors which are known to enhance accuracy of FNAC are:
  - o Obtaining detailed history of each case
  - o By the pathologist himself examining the patient and

reporting the cytology smear also.

- o Care should be taken that each step of aspiration, preparation of the smear staining and interpretation to obtain high levels of accuracy.

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