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RESEARCH ARTICLE

# A CLINICOPATHOLOGICAL CORRELATION OF CERVICAL LYMPHADENOPATHY

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**ABSTRACT**

Cervical lymphadenopathy is a common clinical presentation in patients of all age groups, since the head and neck region is rich in lymphatics. A descriptive cross sectional study was conducted in all adult patients of either sex presenting with cervical lymph node enlargement to the Department of Otorhinolaryngology. Thorough clinical history and examination was done. Based on clinical history and findings (duration, Nature of progression, Size, Consistency, and Tenderness) patients were divided in to three groups: Nonspecific lymphadenitis, tubercular lymphadenitis, neoplastic lymphadenitis. FNAC was then done for all the patients and the results were compared with clinical diagnosis.

Out of the total number of 60 cases, in 4 cases sample obtained from FNAC were inadequate, hence only 56 cases were included. We made a clinical diagnosis of nonspecific cervical lymphadenopathy in 23 patients (41%), tuberculous lymphadenitis in 22 patients (39%), neoplastic nodes in 11 patients (20%). FNAC showed majority of the cases were non neoplastic type of which Reactive hyperplasia/ nonspecific lymphadenitis is 46%, 36% Tubercular lymphadenitis and only 18% neoplastic lymphadenitis. Clinicopathological correlation was done.

Clinical features is a very simple and effective means of obtaining clinical diagnosis early and can be used as screening tool to differentiate between non neoplastic and neoplastic lymphadenitis.



## INTRODUCTION

Cervical lymphadenopathy is a common clinical presentation in patients of all age groups, since the head and neck region is rich in lymphatics. There is scarcely a disease which may not at some time cause enlargement of nodes, hence it is not surprising that cervical lymphadenopathy affords a most fruitful, interesting and often difficult problem for the clinician. In spite of spectacular advances in the field of medicine, a significant number of lymphadenopathies present as clinical hurdles.

The etiology of cervical lymphadenopathy may range from a benign nonspecific inflammation to lymphoproliferative disorders and metastatic malignancies. Lymphadenopathy is defined as pathology in the size or character of lymph nodes. A lymph node is said to be clinically significant if its measures more than 10 mm in its longest diameter in cervical region[1].

Even though a reasonably accurate diagnosis can be made through clinical workup, clinical diagnosis has its own pits falls and a battery of tests are done to establish the diagnosis. Fine needle aspiration cytology introduced by Martin and ellis in 1930, is widely used as a first line investigation for the diagnosis of lymphadenopathy. FNAC is a simple, easy, quick, economical and relatively acceptable method to assess cervical lymphadenopathy and eliminates the disadvantages of surgical biopsy like dissemination, fungation of tumour etc[2].

### *Aims and Objectives*

To determine the causes of cervical lymphadenopathy from history and clinical examination in the adult age group (13 years to 70 years) and correlate with FNAC report.

1. Delineate distribution of clinical diagnosis and to correlate them with fine needle aspiration cytological diagnosis.
2. To assess the distribution of various cytomorphological patterns of cervical lymphadenopathy.
3. To assess the age specific distribution of various cytomorphological patterns of cervical lymphadenopathy.

## MATERIALS AND METHODS

A descriptive cross sectional study was conducted in all adult patients of either sex presenting with cervical lymph node enlargement to the Department of Otorhinolaryngology, Rajah Muthiah Medical College Hospital, Chidambaram, Tamilnadu, between November 2014 to October 2016. This study included 60 patients (>12 years) belonging to either sex presenting with cervical lymph node enlargement. Patients were divided into three groups based on clinical diagnosis.

### *Inclusion criteria*

All patients (>12 years) of either sex who presented with cervical lymph node enlargement.

### *Exclusion criteria*

1. Paediatric age group (≤12years)
2. Patients who had not consented for the study

## METHODS

After obtaining Institutional Ethics Committee approval, consent was obtained from patients or their parents. Patients were selected based on inclusion and exclusion criteria. Thorough clinical history and examination was done. Based on clinical history and findings (duration, Nature of progression, Size, Consistency, Tenderness) patient were divided in to three groups:- Nonspecific lymphadenitis, Tubercular lymphadenitis, Neoplastic lymphadenitis. FNAC was then done for all the patients.

**Table 1** Clinical Diagnosis

| Clinical features | Non specific lymphadenopathy | Tubercular lymphadenitis | Neoplastic /Metastatic lymphadenitis |
|---|---|---|---|
| Size | <3 cm | 3 - 6 cm | >6 cm |
| Consistency | Soft | Firm | Hard |
| Tenderness | + | – | – |
| Mobility | Erythema over swelling, mobile | Freely mobile,matted | Fixed |
| Duration | <3months | 3 – 6 months | >6 months |
| Nature of progress | Fluctuation | Slow progression | Progressive |

The largest lymph node was selected for performing FNAC. A sterile 22 or 23 gauge needle was fitted to a 10ml syringe and pierced obliquely into the lymph node[2,3].

Content of the material from the needle ejected out on to the glass slides, then the smears stained by giemsa stain and subjected to microscopic examination (Fig1,2). FNAC results was then compared with clinical diagnosis[2, 3, 4]

### *Observation*

The present study was done over the period of two years. Out of the total number of 60 cases, in 4 cases sample obtained from FNAC were inadequate, hence only 56 cases were included.

Out of 56 patients, 32 were male patients, 24 were female patients in the ratio of 1.32:1. Most of the patients (16) in our study were in the age group of 31 to 40 years.

Most of the patients (75%) in our study presented with duration of less than 3 months and size of <3 cm (80%). The majority of the cases (98%) presented with unilateral neck swelling and majority of the patients (27%) with level II neck nodes.

Consistency of lymphnodes varied from soft to firm in about 46(82%) patients. 10(18%) patients presented with hard neck nodes. 45(80%) patients in our study had clinically mobile lymphnodes and there was fixity of lymph nodes in 11(20%) patients. In our study out of 45 patients who presented with mobile lymphnodes, 38(84%) were discrete while 7(16%) patients presented with matted lymphnodes.

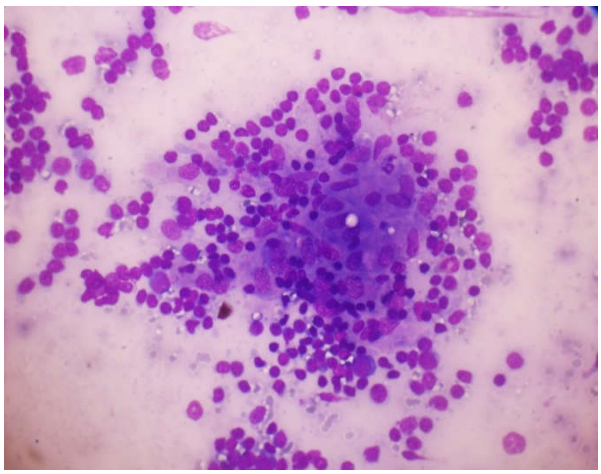
We made clinical diagnosis (Table 1 and 2) of nonspecific cervical lymphadenopathy in 23 patients (41%), Tuberculous lymphadenitis in 22 patients (39%), Neoplastic nodes in 11 patients (20%).

**Table 2** Clinical Diagnosis

| Clinical diagnosis | Cases | Percentage |
|---|---|---|
| Nonspecific lymphadenopathy | 23 | 41 |
| Tuberculous lymphadenopathy | 22 | 39 |
| Neoplastic lymphadenopathy | 11 | 20 |

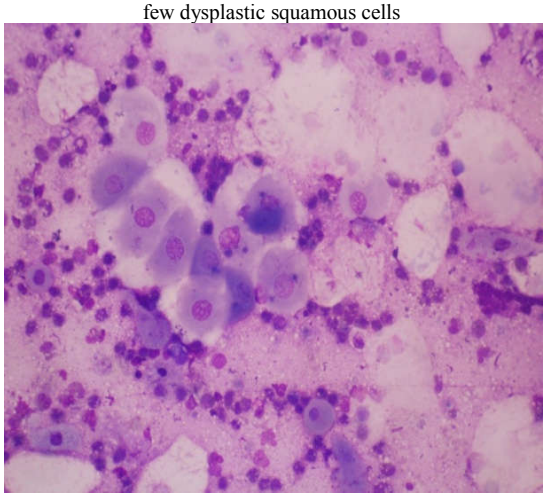
All 56 patients underwent FNAC, results were compared with clinical diagnosis.

**Fig.1** T.B.Lymphadenitis, Showing Epithelioid clusters



**GIEMSA 40X**

**Fig. 2** Metastatic lymphnode, showing anucleate squames with few dysplastic squamous cells



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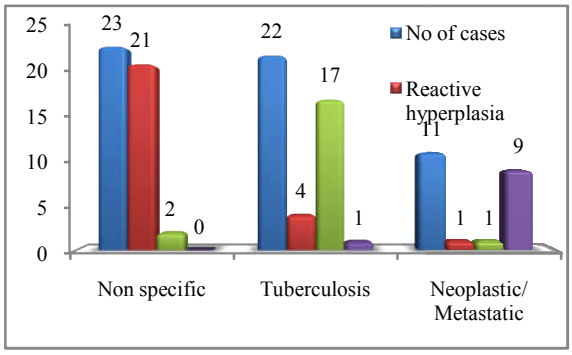



**Graph 1** Correlation of clinical diagnosis and FNAC

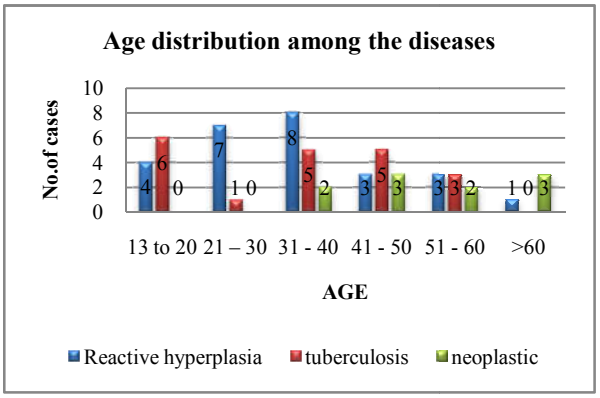
Out of 23 patients who were clinically diagnosed as nonspecific lymphadenopathy, 21 patients (91.3%) showed reactive hyperplasia on FNAC, whereas 2 patients (8.7%) showed features of tuberculous lymphadenitis.

Out of 22 patients who were clinically diagnosed Tubercular lymphadenopathy, 17 patients (77.27%) showed tuberculous lymphadenitis on FNAC, whereas 4 patients (18.18%) showed features of reactive hyperplasia, 1 patient (4.55%) showed features of neoplastic lymphadenitis.

Out of 11 patients who were clinically diagnosed neoplastic lymphadenopathy, 9 patients (81.81%) showed neoplastic lymphadenitis on FNAC, whereas 1 patients (9.095%) showed features of reactive hyperplasia, 1 patient (9.095%) showed features of tubercular lymphadenitis.

Clinical diagnosis and FNAC correlation was done which showed P value of 0.000(<0.005), Which was significant. Hence clinical diagnosis can be used as screening tool to differentiate between non neoplastic and neoplastic lymphadenitis.

In our study reactive hyperplasia was most commonly seen in the age group of 31 –to 40 years, Tuberculous lymphadenitis in the age group of 13 to 20, Neoplastic / metastatic lymphadenitis were mostly seen in patient above 40 years.




**Graph 2** Age distribution among the diseases

## DISCUSSION

The observations made in the study were analysed and were compared with the findings of other studies conducted earlier at different centers

***Age incidence:*** Maximum number of patients with cervical lymphadenopathy in our study were in the age group of 31 – 40 years (28.5%), This observation is consistent with the studies done earlier by Anand Vachhani *et al*[5] (31-40years), R K Narang *et al*[3] (31-40 years), Nanik J *et al*[6] (31-40 years).

***Sex incidence:*** In the present study there is a male predominance with a male to female ratio of 1.32 : 1 This observation is consistent with the studies done earlier by P C Chamyl *et al*[7] (1.3:1), Mayuri *et al*[8]. (1.2:1), Rajat Gupta *et al*[9] (1.3:1).The male predominance in our study may be attributed to the high attendance of male patients in the ENT outpatient department.

***Duration of swelling:*** In the present study most of the patients (80%) presented with cervical lymphnode swelling of less than 3 months which can be attributed to the various national and state health programs, that have caused a substantial increase in the awareness of health among the general population.

***Side of swelling:*** In our study majority of the patients (98%) had unilateral neck swelling. Level of neck swelling: Most of the patient in our study showed involvement of the upper and middle jugular lymphnodes since they are the predominant drainage sites for oral cavity, nasopharynx, oropharynx, Larynx.

***Size of lymphnodes:*** Majority of the patients presented with swelling <3 cm since 82% of the patient either had Nonspecific or Tuberculous nodes based on FNAC done in our studies. Hence the majority of patient presented with lymphnodes less than 3 cm in size. This observation is consistent with the studies done earlier by Nasreen H Hafez *et al*[10] (2011), Mogre D A *et al*[11] (2014), Mohammad Shah Kamal
*et al*[14] (2016)

***Consistency and mobility of lymphnodes:*** In our study the consistency of lymphnodes varied from soft to firm (45%) and most of them were mobile(80%) nodes, since they were benign lesions, as similar to other studies by Mogre D A[11] (2014) , Mohammad Shah Kamal *et al*[14](2016) since general incidence of malignancy is less compare to benign lesion.

***Mantoux test:*** Mantoux test is screening test for tuberculosis. In our study 22 patients clinically suspected to have tuberculous lymphadenitis, were subjected to mantoux test , 41 % of patients showed positive for mantoux test. This observation is consistent with the studies done earlier by R K Narang *et al*[3] (1990).

The maximum incidence of cases are non-neoplastic type of which nonspecific lymphadenitis is 41 %, Followed by tubercular lymphadenitis 39%, Neoplastic lymphadenitis accounted for 20%. This observation is consistent with the studies done earlier by Hossain *et al*[13] (2014), Vinay Kumar *et al*[14]

***FNAC diagnosis:*** FNAC showed majority of the cases were non neoplastic type of which Reactive hyperplasia/ nonspecific lymphadenitis is 46 %, 36% Tubercular lymphadenitis and only 18% neoplastic lymphadenitis. This observation is consistent with the studies done earlier by Vinaykumar *et al*[14], Mayuri *et al*[8], Anand Vachhani *et al*[5], Kamat GC *et al*[15].

In our study tuberculous lymphadenitis was most commonly seen in the age group of 13 to 20 years. In reactive hyperplasia mostly seen in the age group of 31 to 40 years. Neoplastic / metastatic lymphadenitis were mostly seen in patients above 40 years.

Above mentioned clinical features (Table 1) is a very simple and effective means of obtaining clinical diagnosis early and

can be used as screening tool to differentiate between non neoplastic and neoplastic lymphadenitis.

## SUMMARY AND CONCLUSION

The common causes of cervical lymphadenopathy encountered in our study were reactive hyperplasia (46%), tubercular lymphadenitis (36%) and neoplastic lymphnodes (18%).

Tubercular lymphadenitis were common in the age group of 13 to 20, neoplastic/metastatic lymph nodes were mostly seen in patients above 40 years.

The present study confirmed that combination of clinical assessment and FNAC of lymphnode is an excellent first line method for assessing the nature of lesion.

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