

# Clinicopathological analysis of cervical lymph node biopsies in central India

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## Abstract

**Introduction:** Lymphadenopathy is a common clinical problem, usually benign, but malignancy may be associated. To confirm the diagnosis often required a biopsy of lymph nodes.

**Methods:** All patients with cervical lymphadenopathy, more than 4 weeks and size more than 1cm were included in the study and a biopsy were done and sent for histopathological study.

**Results:** Out of total 220 patients, 54.5% (n=120) were males & 45.5% (n=100) were females. The mean age was 38.9±1.02 years & the maximum number of patients were adults (50%). The most common cause of cervical lymphadenopathy was reactive hyperplasia (51.8%) followed by granulomatous infection (17.3%). however, in older adults, carcinoma was also a common cause of cervical lymphadenopathy (40%).

**Conclusion:** The most common histopathological diagnosis of cervical lymph node biopsies in central India were reactive disease and granulomatous infections.

**Keywords:** Lymphadenopathy, reactive, granulomatous

## Introduction

Abnormal enlargement of the lymph node is defined as lymphadenopathy. It is a common clinical problem especially cervical lymphadenopathy may present in 56% of patients examined <sup>[1]</sup>. It is mostly caused by benign diseases but sometimes malignant diseases are also found <sup>[2]</sup>. After taking a complete history and performing a physical examination, the cause is clear in most cases. However, laboratory tests and lymph node biopsy may be necessary in some cases. The differential causes of cervical lymphadenopathy are pharyngitis, otitis media & externa, bacterial and viral upper respiratory tract infections, lymphomas and carcinomas <sup>[3, 4]</sup>. In children and young adults, the most common causes of cervical lymphadenopathy are reactive, infective and benign diseases but in older adults, carcinomas and granulomatous infections are the most common histopathological finding <sup>[4, 5]</sup>. A few studies have addressed the causes of cervical lymphadenopathy in central India therefore we conducted this study to analyse the pathological findings for cervical lymph node biopsies in

central India.

## Methods

This study was performed in JAH groups of the hospital, a tertiary care centre in Gwalior, Madhya Pradesh. In this study, patients who presented with the diagnosis of cervical lymphadenopathy and underwent lymph node biopsy in our hospital from March 2018 to December 2021 were included. Known patients with primary cancer or biopsied for the staging of cancer were excluded from the study. Lymph node biopsy was performed when the size of the lymph node was greater than 1 cm and the duration of lymphadenopathy was more than 4 weeks. All biopsied specimens were fixed with 10% formalin solution, processed in paraffin and stained with routine staining with hematoxylin-eosin. Special staining e.g., Ziehl-Neelsen reticulin, Gomori-Methenamine silver & Periodic Acid Schiff was done when indicated.

## Results

A total of 220 patients were included in the study and a biopsy was done for the cervical lymph node. The mean age was  $38.9 \pm 1.02$  years. Sex-wise 54.5% (n=120) were males & 45.5% (n=100) were females patients. All the patients were classified age-wise into 4 groups: children (below 13 years), adolescents (age 13-19 years), adults (age 20-60 years) & older adults (above 60 years). The maximum number of cases were adults (50%) followed by adolescents (19.1%), children (17.3%) & older adults were least (13.6%). The most common cause of cervical lymphadenopathy in all age groups was reactive lymph nodes on histopathology examinations (51.8%). However, in older adults, carcinoma was the most common histopathological finding (40%). In children, carcinoma was not found (Table 1) and reactive lymphadenopathy was the most common (68.4%) pathological finding. Granulomatous lymphadenopathy was the second most common pathology in all age groups.

**Table 1:** Age-wise histopathological distribution of cervical lymphadenopathy

Cause of cervical lymphadenopathy	Children (%)	Adolescent (%)	Adult (%)	Older adult (%)	Total (%)
Reactive	26 (68.4)	28 (66.7)	55 (50)	5 (16.7%)	114 (51.8)
Granulomatous	10 (26.3)	10 (23.8)	12 (10.9)	6 (20%)	38 (17.3)
Carcinoma	0	1 (2.4)	20 (18.2)	12 (40%)	33 (15)
Hodgkin's	2 (5.2)	2 (4.8)	15 (13.6)	3 (10%)	22 (10)
Non-Hodgkin's	0	1 (2.4)	8 (7.3)	4 (13.3)	13 (5.9)
Total	38	42	110	30	220

## Discussion

When a patient presented with cervical lymphadenopathy to clinicians, the initial step to determine the cause is taking a history in detail and thorough physical examination and making the diagnosis. However, if no cause for lymphadenopathy is found and enlarged lymph nodes persist beyond 4 weeks, then a biopsy is a must for definitive diagnosis. A lymph node more than 1 cm in size is clinically significant and requires excisional biopsy [6]. However, most abnormal lymph node for biopsy is best for pathological diagnosis [7]. Vassilakopoulos *et al.* proposed a prediction rule to determine which patients require a lymph node biopsy [8].

The mean age of patients in our study was  $38.9 \pm 1.02$  years, similar to studies conducted by Al-Sohaibani *et al.* & Morad *et al.* [9, 10]. In our study, the most common cause of cervical

lymphadenopathy is reactive hyperplasia, especially in pediatric and adult populations (68.4% & 66.7% respectively). These results are similar to studies done by Moore *et al.* and Oguz *et al.* [6, 11]. The reason behind this finding may be more inclusion of pediatric and adult patients and exclusion of known malignancy patients.

In the present study, after the histological finding of reactive hyperplasia (51.8%), the second most common finding was granulomatous lymphadenopathy (17.3%) similar to the study done by Morad *et al.* [10]. In our study, M. Tuberculosis was isolated in 41.2% of cases, comparable to a study done by Jaffer *et al.* (38.8%) [12]. Moore *et al.* [6] showed granulomatous lymphadenopathy as the most common (36.3%) histopathological finding in children higher than our study. In developed countries, the most common isolates of granulomatous lymphadenitis were mycobacterium other than Tuberculosis [13-15].

Carcinoma was the most common finding in older adults and the second most common in adults. These findings were similar to studies done by Morad *et al.* [10].

Hodgkin's disease pathological finding was present in 10% of cases in our study similar to other studies [10, 16]. However, Abba *et al.* showed a higher percentage (33%) in their study [17].

## Conclusion

Our study showed that reactive hyperplasia is the most common cause of cervical lymphadenopathy, especially in children and adolescent age group followed by granulomatous disease. M tuberculosis was the most common isolate in granulomatous lymphadenitis in our study. However, in older age, carcinoma histopathological finding was more common.

## Declaration of conflicts of interests

There is no conflict of interests.

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