

# Cytological Pattern of Cervical Lymphadenopathy in Children in a Tertiary Care Hospital

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## Abstract

**Introduction:** Cervical lymphadenopathy is a common presenting complaint in children, the causes of which can be bacterial, viral and tubercular infections and malignancies like leukemias, lymphomas and metastasis. FNAC provides a quick diagnosis and helps in further management of patients.

**Materials and Methods:** The present study was conducted on 160 children with cervical lymphadenopathy in the department of pathology, Government Medical College Srinagar.

**Results:** Most of the patients were in the age group of 11-15 years with a male predominance. Benign diagnosis was made in 96% of cases which include reactive hyperplasia (86.9%), tubercular lymphadenitis (7%) and acute suppurative lymphadenitis (2.4%). Malignant diagnosis was made in only 3.6% of cases.

**Conclusion:** FNAC is a reliable, simple and safe procedure in the diagnosis of cervical lymphadenopathy and can avoid the need for more invasive procedures like open biopsy.

**Keywords:** FNAC; Lymphadenopathy children; Open biopsy; Pathology

## Introduction

Lymphadenopathy being a common problem in children, for the paediatricians, evaluation of a child with enlarged lymph nodes is a common clinical scenario [1-3]. Cervical lymphadenopathy most commonly represents a transient response to a benign local or generalized infection, but occasionally it might herald the presence of a more serious disorder such as malignancy. It is necessary to arrive at a definitive diagnosis in order to administer proper treatment in an easy, fast way.

Lymph nodes are most widely distributed and easily accessible component of lymphoid tissue [4,5]. Aspiration of lymph nodes for diagnostic purpose was first reported in 1904 by Grieg and Gray in the diagnosis of Trypanosomiasis. In 1921, Guthrie attempted to correlate lymph node aspiration cytology with various disease processes [6,7]. Fine needle aspiration cytology (FNAC) is particularly helpful in the workup of cervical masses because biopsy of cervical adenopathy should be avoided unless all other diagnostic modalities have failed [8]. Cervical Lymphadenopathy is defined as cervical lymph nodal tissue measuring more than 1 cm in diameter [9]. Lymph nodes are among the commonest aspirated organs for diagnostic purpose.

FNAC is a reliable and least expensive method for developing countries for the investigation of lymphadenopathy [5,10]. FNAC has become an acceptable and widely practised minimally invasive technique which is safe, simple, rapid, relatively pain free and cost effective technique providing rapid information and directing further approach to a patient.

## Material and Methods

This study was conducted in the Postgraduate Department of Pathology, Government Medical College Srinagar, Jammu and Kashmir over a period of two years from January 2013 to December 2014. A total of 160 children (1 year to 15 years of age) with significant cervical lymphadenopathy being referred for FNAC were included. A detailed history along with a general physical examination was done for each patient. FNAC procedure was performed by a pathologist, using a 24G needle attached to a 20 ml syringe. Multiple sites were aspirated. Smears were stained accordingly using Giemsa, Ziehl Neilsen and H&E stains. Acellular and hypocellular aspirates were excluded from the study. Cytological findings were noted in all patients.

## Results

The study was divided into three age groups:

1-5 y, 6-10 y and 11-15 y, most of the patients (73) were in the 11-15 y age group (45.6%) followed by 59 patients in the 6-10 y age group (36.9%) and least number of patients (28) were in the 1-5 y age group (17.5%).

In this study, out of 160 cases, 103 (64%) patients were males and 57 (36%) were females with a male to female ratio of 1.8:1.

Out of 160 cases, the most common diagnosis was reactive hyperplasia (86.9%) followed by Tubercular lymphadenitis in 11 cases (7%), Lymphoproliferative in 5 cases (3%) and acute suppurative lymphadenitis in 4 patients (2.4%). One case of langerhan cell histiocytosis (LCH) was diagnosed in a 12 y male (Figures 1-3).

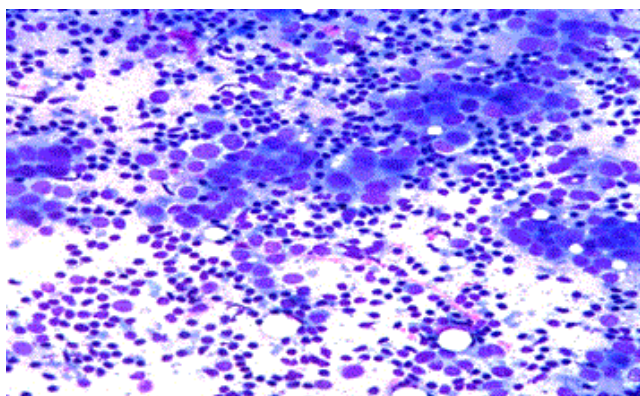
Reactive hyperplasia was the commonest diagnosis in all age groups. Tubercular lymphadenitis was exclusively seen in 10-15 years of age (Tables 1 and 2).

Cytological Diagnosis	Number of Cases	Percentage
Reactive Hyperplasia	139	86.9
Tubercular Lymphadenitis	11	7
Lymphoproliferative	5	3
Suppurative Lymphadenitis	4	2.4
LCH	1	0.6
Total	160	100

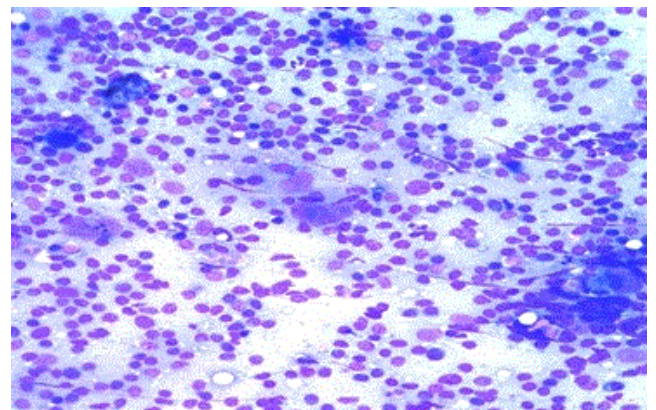
**Table 1:** Cytological diagnosis of 160 cases of cervical lymphadenopathy.

Diagnosis	Male	Female
Reactive Hyperplasia	94	45
Tubercular Lymphadenitis	5	6
Lymphoproliferative	2	3
Suppurative Lymphadenitis	1	3
LCH	0	1

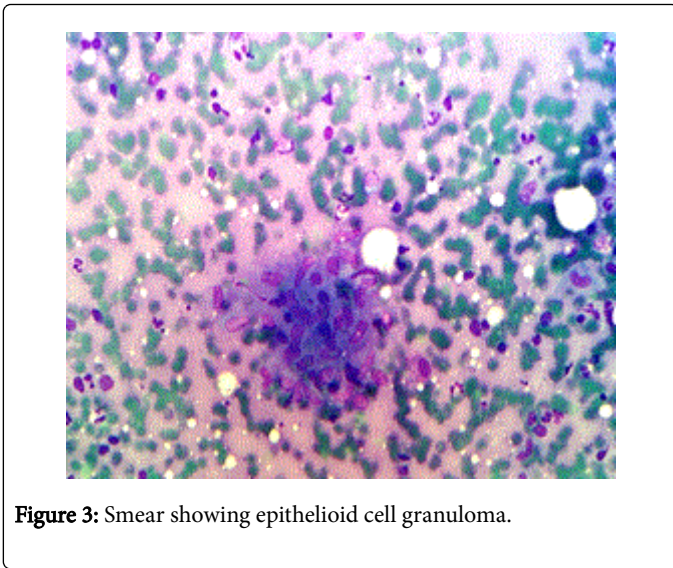
**Table 2:** Distribution of cases according to sex.



**Figure 1:** FNAC smear showing reactive Hyperplasia.



**Figure 2:** FNAC smear showing RS cell in a reactive milieu in Hodgkin lymphoma.



**Figure 3:** Smear showing epithelioid cell granuloma.

## Discussion

Cervical lymphadenopathy most commonly represents a transient response to a benign local or generalized infection, but occasionally it might herald the presence of a more serious disorder such as malignancy. It is necessary to arrive at a definitive diagnosis in order to administer proper treatment in an easy, fast way. Lymphadenopathy is a commonly encountered problem in children requiring prompt and accurate diagnosis so that a proper treatment can be started as early as possible. FNAC has become an acceptable and widely practised minimally invasive technique which is safe, simple, rapid, relatively pain free and cost effective technique providing rapid information and directing further approach to a patient.

In the present study we performed FNAC on 160 patients in the age group of 1-15 years of cervical lymphadenopathy over a period of two years.

In our study, the most common cytological diagnosis was reactive hyperplasia followed by tubercular lymphadenitis, lymphoproliferative lymphadenopathy and suppurative lymphadenitis. These findings were similar to the studies [11-13]. Reactive hyperplasia was also the most common diagnosis in the study [14].

In our study there was a male predominance which is similar to the studies [12,15,16].

Tubercular lymphadenitis was more common in 10-15 year age group in our study. This finding was correlated with the studies conducted by Singh et al. and Thomas et al. who also showed similar findings [12,17].

## Conclusion

FNAC is a quick, safe, simple and reliable outpatient procedure. Most cases of cervical lymphadenopathy in children are benign, hence FNAC will alleviate the imminent stress of parents, patients and paediatricians by giving quick results and avoiding the more invasive procedures like biopsy.

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