

## ORIGINAL RESEARCH

# Analysis of FNAC Findings in Children Aged 1-10 Years with Cervical Lymphadenopathy at a Tertiary Care Hospital

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### ABSTRACT

**Background:** The present study was conducted for evaluating the FNAC findings in children aged 1 to 10 years with cervical lymphadenopathy. **Materials & Methods:** A total of 40 pediatric subjects were enrolled. Complete demographic details of all the subjects were recorded. Only those subjects were enrolled among which there was presence of cervical lymphadenopathy of more than 1 cm. patients with insignificant palpable lymph nodes were excluded. Fine Needle aspiration cytology (FNAC) was done in all the subjects. All the findings were recorded in Microsoft excel sheet followed by statistical analysis using SPSS software. **Results:** FNAC findings showed presence of tuberculosis, granulomatous infection, suppurative infection and reactive hyperplasia in 27.5 percent, 7.5 percent, 12.5 percent and 52.5 percent of the patients respectively. Causes of lymphadenopathy were tonsillitis, otitis media, tuberculosis, lymphadenitis and scalp infection in 30 percent, 30 percent, 27.5 percent, 7.5 percent and 17.5 percent of the subjects respectively. **Conclusion:** In order to diagnose cervical lymphadenopathy, FNAC is a reliable, quick, and safe method that can eliminate the need for more invasive techniques like open biopsy.

**Key words:** FNAC, Cervical, Lymphadenopathy.

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### INTRODUCTION

A lymphadenopathy is characterised by aberrant lymph node size, number, and rigidity. The term "lymphadenopathy" is used to describe all pathologic lymph node diseases, and the term "lymphadenomegaly" is used to describe enlarging lymph nodes. Lymphadenopathies are split into two categories: local lymphadenopathies, which affect one or more lymph nodes that are close to one another, and extensive lymphadenopathies, which affect more than two lymph nodes that are not close to one another.<sup>1, 2</sup> After puberty, lymph nodes in children begin to shrink after reaching their highest size at around the age of up to twelve years. Infections are the primary cause, despite the fact that they frequently appear to paediatric oncology outpatient clinics with a

prediagnosis of malignancy and cause significant concern in families. The fundamental cause, according to some reports, is a constant antigenic stimulation brought on by frequent childhood illnesses. It's crucial to distinguish between benign lymph nodes and physiological lymphadenomegaly when making a differential diagnosis.<sup>3, 4</sup> It may also herald chronic infections like tuberculosis, brucellosis, and serious conditions like malignancy and autoimmune disorders or other rare causes like atypical mycobacterial lymphadenitis, SLE, brucellosis, or histiocytosis.<sup>2,3</sup> The etiological profile varies from country to country and region to region. In developing countries like India, acute upper respiratory infections, suppurative skin infections and tuberculosis are the major causes for regional

lymphadenopathy.<sup>5- 7</sup>Hence; the present study was conducted for evaluating the FNAC findings in children aged 1 to 10 years with cervical lymphadenopathy.

**MATERIALS & METHODS**

The present study was conducted in Amaltas Institute of Medical Sciences, Dewas, Madhya Pradesh (India) for evaluating the FNAC findings in children aged 1 to 10 years with cervical lymphadenopathy. A total of 40 pediatric subjects were enrolled. Complete demographic details of all the subjects were recorded. Only those subjects were enrolled among which there was presence of cervical lymphadenopathy of more than 1 cm. patients with insignificant palpable lymph nodes were excluded. A thorough history was collected, which covered the time frame and progression of the edoema as well as any related general symptoms. Additionally noted were immunisation status, socioeconomic background, and any antibiotic therapy. A comprehensive general physical examination was performed. The size, location, consistency, number, mobility, presence of matting, and presence of any local alterations like redness, discharge, or sinus development were noted while palpable peripheral lymph nodes were inspected. Fine Needle aspiration cytology (FNAC) was done in all the subjects. All the findings were recorded in Microsoft excel sheet followed by statistical analysis using SPSS software.

**RESULTS**

Majority of subjects belonged to the age group of 5 to 10 years. 57.5 percent of the subjects were boys. In 77.5 percent of the subjects, cervical lymph nodes were of firm consistency. Lymph nodes were mobile in 80 percent of the subjects while lymph node tenderness was seen in 37.5 percent of the subjects. FNAC findings showed presence of tuberculosis, granulomatous infection, suppurative infection and reactive hyperplasia in 27.5 percent, 7.5 percent, 12.5 percent and 52.5 percent of the patients respectively. Causes of lymphadenopathy were tonsillitis, otitis media, tuberculosis, lymphadenitis and scalp infection in 30 percent, 30 percent, 27.5 percent, 7.5 percent and 17.5 percent of the subjects respectively.

**Table 1: Age-wise and gender-wise distribution**

Variable		Number	Percentage
Age group (years)	Less than 5	18	45
	5 to 10	22	55
Gender	Boys	23	57.5
	Girls	17	42.5

**Table 2: Consistency**

Consistency	Number	Percentage
Firm	31	77.5
Soft	9	22.5
Total	40	100

**Table 3: Mobility**

Mobility	Number	Percentage
Mobile	32	80
Matted	8	20
Total	40	100

**Table 4: Tenderness**

Tenderness	Number	Percentage
Present	15	37.5
Absent	25	62.5
Total	40	100

**Table 4: FNAC findings**

FNAC findings	Number	Percentage
Tuberculosis	11	27.5
Granulomatous	3	7.5
Suppurative	5	12.5
Reactive hyperplasia	21	52.5
Total	40	100

**Table 5: Causes of lymphadenopathy**

Causes	Number	Percentage
Tonsillitis	12	30
Otitis media	12	30
Tuberculosis	11	27.5
Lymphadenitis	3	7.5
Scalp infection	7	17.5
Cause not known	5	12.5
Total	40	100

**DISCUSSION**

Lymphadenopathy is one of the commonest clinical presentations among paediatric patients attending the outdoor department. It has several aetiologies ranging from an inflammatory process to a malignant condition, thus posing diagnostic dilemma to a paediatrician.<sup>5- 8</sup> Therefore, it is necessary to arrive at a definitive diagnosis in order to administer proper treatment. FNAC is a very simple and expeditious procedure which can be carried out with ease in children. In the last few years, FNAC has emerged as a reliable diagnostic procedure in the paediatric age group, thus obviating the need for excision biopsy.<sup>7- 9</sup>Hence; the present study was conducted for evaluating the FNAC findings in children aged 1 to 10 years with cervical lymphadenopathy.

Majority of subjects belonged to the age group of 5 to 10 years. 57.5 percent of the subjects were boys. In 77.5 percent of the subjects, cervical lymph nodes were of firm consistency. Lymph nodes were mobile in 80 percent of the subjects while lymph node tenderness was seen in 37.5 percent of the subjects. FNAC findings showed presence of tuberculosis, granulomatous infection, suppurative infection and reactive hyperplasia in 27.5 percent, 7.5 percent, 12.5 percent and 52.5 percent of the patients respectively. Agarwalla SK et al, in a previous study, assessed the association between fine-needle aspiration cytology (FNAC) and histopathology in diagnosing children

with lymphadenopathy. The median age was 7 years (2–14 years) and male-to-female ratio was 1.4:1. The most common symptom was fever (98%) and the most common physical finding was painless enlargement of lymph nodes (90%). There was statistically significant association between FNAC and definite diagnosis, diagnosis suspected and undiagnosed cases of tuberculosis by FNAC.<sup>10</sup>

In the present study, causes of lymphadenopathy were tonsillitis, otitis media, tuberculosis, lymphadenitis and scalp infection in 30 percent, 30 percent, 27.5 percent, 7.5 percent and 17.5 percent of the subjects respectively. Akhter R et al, in another study, evaluated FNAC findings among pediatric subjects with cervical lymphadenopathy. 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.<sup>11</sup>

Bhavani C et al described cytomorphological patterns of FNAC of cervical lymph nodes and its utility in establishing diagnosis. Total 265 cases were studied, out of these 232 (87.55%) were found inflammatory and 33 (12.45%) were neoplastic. Tuberculosis was the most common disease found in 112 (42.26%) patients followed by reactive nonspecific lymphadenitis in 94 patients (35.47%), Metastatic tumours 30 patients (11.32%), suppurative lymphadenitis 26 patients (9.8%), Lymphoma 3 (1.13%). Highest incidence of cervical lymphadenopathy was found in patients of 21 to 40 years age group. Fine Needle Aspiration Cytology is easy, simple, safe, reliable and non-invasive procedure for diagnosis of cervical lymphadenopathy.<sup>12</sup> In a previous study conducted by Silas, O A et al, authors evaluated the positive role Fine needle aspiration cytology plays in the diagnosis of pediatric patients with lymphadenopathy in the head and neck region. All malignant cases diagnosed by FNAC had to undergo confirmation/characterization by histology and had 100% concordance. The lymph nodes were generalized 4 (7.1%) and localized in 52 (92.9%). Maximum number of cases 53 (94.6%) had Cervical Lymphadenopathy followed by axillary 2 (3.6%) and inguinal 1 (1.8%). Out of the cervical group of nodes, the upper anterior and upper posterior deep cervical nodes were involved in majority of cases (95%).<sup>13</sup>

## CONCLUSION

In order to diagnose cervical lymphadenopathy, FNAC is a reliable, quick, and safe method that can eliminate the need for more invasive techniques like open biopsy.

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