

ORIGINAL RESEARCH

To Study The Clinicopathological Picture Among Children Aged 1-18 Years In Relation To Paediatrics Cervical Lymphadenopathy

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ABSTRACT

Aim: To study the clinicopathological picture among children aged 1-18 years in relation to paediatrics Cervical Lymphadenopathy

Material and methods: The research was carried out at the Department of Pediatrics. Blood tests for haemoglobin level, total and differential count, and erythrocyte sedimentation rate were performed on all patients in the study group. The Mantoux test was performed on all patients as part of their usual workup. Fine needle aspiration cytology (FNAC) was performed on all patients in the study group after a swab was collected from the most prominent node in patients with the source of infection for culture and sensitivity.

Results: Significant cervical lymphadenopathy is widespread in the 6- to 12-year-old age group (45%), followed by the 12 to 18-year-old age group (33%). In 91 children (91%), the presenting symptom was neck edoema. In 90% and 52% of the youngsters, fever and cough were the presenting symptoms. 31% of children had a history of failure to acquire weight and decrease of appetite. 19% of the youngsters had a history of sore throat. Swelling was painless in the vast majority of instances (93%) and painful in 7%. More than one presenting symptom was found in 70 (70%) of the youngsters. Ear drainage and orodental discomfort were both present in 8% of the youngsters. Six youngsters had a history of interaction with a TB patient. The anterior cervical lymph nodes are the most usually impacted group of lymph nodes (44%), followed by the posterior cervical (33%).

Conclusion: Non-diagnostic hyperplasia owing to reactive lymphadenitis is the most prevalent cause of severe cervical lymphadenopathy in children. Following suitable examinations, the most frequent cause detected is infection. The most prevalent cause of lymphadenopathy in children is reactive lymphadenitis, followed by TB.

Keywords: Lymphadenopathy, FNAC

INTRODUCTION

Filtration along the lymphatic system occurs at lymph nodes. Their function is to operate as a kind of filter, capturing and containing harmful particles like bacteria, viruses, cancer cells, and other pathogens before sending them on their way out of the body. The examination of a

kid with lymphadenopathy is a typical clinical issue for paediatricians due to the prevalence of lymph node enlargement in children. Eighty percent to ninety percent of kids have cervical nodes that can be felt. Infant lymph nodes may be palpated as early as the neonatal period.^{1,2} Disturbance in the size or composition of lymph nodes is known as lymphadenopathy. If the largest diameter of a lymph node in the neck is greater than 10 millimetres, it is deemed abnormal. Any lymph node in the supraclavicular region that can be felt by the patient is pathological. Because viral and bacterial infections often resolve on their own, the majority of these cases are considered to be of benign self-limited disease process.¹ Lymphadenopathy may be caused by a wide variety of conditions. To limit this differential diagnosis, a complete medical history and careful clinical examination are essential. The most prevalent causes are systemic infections, most often systemic viral infections.^{3,4} The swelling of lymph nodes within a cluster of connected body parts is called regional lymphadenopathy. The most common cause is an infection or inflammation in the lymph node's draining area (s). Understanding the lymphatic drainage pattern might help pinpoint the root cause. Most cases of regional adenopathy in children occur in the cervical lymph nodes, and these cases are often linked to infectious causes. Cervical nodes may be swollen and represent the first sign of diseases like lymphoma and leukaemia. We were motivated to investigate this topic because of the difficulty in diagnosing and treating lymphadenopathy in children.² The primary objectives of this research were to identify the causes of severe cervical lymphadenopathy in children and evaluate the link between clinical and pathological findings.

MATERIAL AND METHODS

The research was carried out at the Department of Pediatrics with the consent of the ethics committee. The research comprised children with severe cervical lymphadenopathy who attended Pediatric OPD and were admitted to the Pediatric Department throughout the study period.

METHODOLOGY

Blood tests for haemoglobin level, total and differential count, and erythrocyte sedimentation rate were performed on all patients in the study group. The Mantoux test was performed on all patients as part of their usual workup. Fine needle aspiration cytology (FNAC) was performed on all patients in the study group after a swab was collected from the most prominent node in patients with the source of infection for culture and sensitivity. Relevant tests were performed on individuals with suspected systemic illnesses or malignancies.

INCLUSION CRITERIA

- Patients between the age group of 1 to 18 years Patients with cervical lymphadenopathy with
- Lymph node size of
- 1cm in cervical and axillary region
- 1.5 cm in inguinal region
- 0.5 cm in other peripheral region
- Lymph nodes which were hard, rubbery or matted.
- Lymph nodes with discharging sinus

RESULTS

There were 100 patients in all that were investigated. Out of the 100 cases reviewed, 27 (27%) were hospitalised to the paediatric ward and 73 (73%) were outpatients who visited the paediatric outpatient department. Significant cervical lymphadenopathy is widespread in the 6- to 12-year-old age group (45%), followed by the 12- to 18-year-old age group (33%). (table-1). In 91 children (91%), the presenting symptom was neck edoema. In 90% and 52% of the youngsters, fever and cough were the presenting symptoms. 31% of children had a history of failure to acquire weight and decrease of appetite (table-2). 19% of the youngsters had a history of sore throat. Swelling was painless in the vast majority of instances (93%) and painful in 7%. More than one presenting symptom was found in 70 (70%) of the youngsters. Ear drainage and orodental discomfort were both present in 8% of the youngsters. Six youngsters had a history of interaction with a TB patient. The anterior cervical lymph nodes are the most usually impacted group of lymph nodes (44%), followed by the posterior cervical (33%). (table-3) In all 100 instances, FNAC was performed. In 96% of instances, the material was enough for reporting; in the remaining 4% of cases, it was insufficient. Cytology revealed reactive hyperplasia in 74% of the patients. Tuberculosis cytology was seen in 16 cases (16%), with caseous necrosis in 7 instances and granulomatous alterations in 3 cases. Purulent material was aspirated in seven instances and was diagnosed as suppurative lymphadenitis (table-4)

Table-1: Age distribution

Age	Number	%
1 -6 years	22	22
6-12 years	45	45
12-18years	33	33
Total	100	100

Table-2: Presenting symptoms

	Number	%
Fever	90	90
Cough	52	52
Weight loss/Failure to gain weight	31	31
Loss of appetite	31	31
Sore throat	19	19
Ear discharge	8	8
Orodental pain	8	8
More than one symptom	70	70

Table-3: Sites of lymphadenopathy in cervical region

Site	Number	%
Anterior cervical	38	44
Posterior cervical	28	33
Submandibular	08	9
Supra clavicular	06	7
Occipital	06	7
Posteriorauricular	-	-
Total	100	100

Table-4: Fine needle aspiration cytology

Cytology	Number	%
Reactive hyperplasia	74	74
Tuberculosis	16	16
Suppurative	7	7
Inadequate material	3	3
Total	100	100

DISCUSSION

The purpose of this research was to investigate the aetiology of children with cervical lymphadenopathy by connecting history, clinical symptoms, and relevant laboratory diagnoses. The bulk of the youngsters in our research were aged 6 to 12 years, most likely owing to increased exposure to their surroundings.⁶ Reddy, MP, and colleagues discovered a significant majority in the 6-12 age range.⁷ However, in one of the biggest investigations on the relationship between age and lymphadenopathy, Knight et al⁸ said that age is not a factor in predicting the occurrence of severe lymphadenopathy. The current research has a male predominance, but Mishra S D et al found no such gender preference. In the current research, the most common symptom was swelling in the neck, followed by fever and cough, which is consistent with Reddy's observations. MP and co. In their investigation of juvenile cervical lymphadenopathy, Knight et al and Reddy et al discovered that the most common location was the upper anterior cervical lymph nodes. In our analysis, however, the most common locations were both anterior and posterior lymph nodes.^{6,7}

In the current investigation, 6% of the patients had a history of contact with tuberculosis-infected adults. However, Reddy, MP, et al found the same in 90.90% of cases. Knight et al and Reddy. MP et al⁶⁻⁸ found hard lymph nodes in 96% and 94% of patients, respectively, and our conclusion (81%) is consistent with the findings of the aforesaid researchers. The presence of a BCG scar was seen in 78% of the patients in the current investigation, which is consistent with the findings of Reddy, MP, and colleagues (78%). This might be attributed to increased vaccine awareness. The most prevalent cytopathological result in the current investigation was reactive lymphadenitis (74%), followed by granulomatous and suppurative lymphadenitis (16% and 7%, respectively). Lake and colleagues, as well as Reddy. MP et al. also identified reactive lymphadenitis as the most prevalent cytopathological result, followed by granulomatous lymphadenitis.^{9,10} Tubercular lymphadenitis was shown to connect favourably with increasing risk variables such as immunisation status, positive Mantoux test, positive history of contact, and malnutrition.¹¹ Other bacterial infections that cause cervical lymphadenopathy include Staphylococci, Streptococci, and Citrobacter, which have been identified from tonsillopharyngitis and otitis media. This might be ascribed to unsanitary circumstances, overcrowding, and a low socioeconomic position. Despite multiple examinations, aetiology could not be determined in 16% of the patients in the current research, and this result was highly connected with Reddy. MP et al, who were unable to diagnose in 44% of the cases. As a result, more research and extended follow-up including detection of antigen and antibody against numerous viruses and parasites, as well as examinations for unusual causes of lymphadenopathy, may reduce the number of undetected cases.

CONCLUSION

Non-diagnostic hyperplasia owing to reactive lymphadenitis is the most prevalent cause of severe cervical lymphadenopathy in children. Following suitable examinations, the most frequent cause detected is infection. The most prevalent cause of lymphadenopathy in

children is reactive lymphadenitis, followed by TB. As an initial diagnostic tool, FNAC is a safe and reliable outpatient treatment that takes less time.

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