

Clinicopathological Study of Significant Cervical Lymphadenopathy in Children

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ABSTRACT

Introduction: Lymphadenopathy is a common problem in children and evaluation of child with lymphadenopathy is a common clinical scenario for the paediatrician, lymphadenopathy in children may be due to systemic infections mostly systemic viral infections. the objective of this study is clinicopathological profile of significant cervical lymphadenopathy among the children attended to department of paediatrics Govt General hospital, Guntur AP.

Material and methods: this was a prospective study done on 86 children with significant lymphadenopathy attended to Dept of Paediatrics, GGH, Guntur during the period of Oct 2016 to Sept 2017.

Results: 74.4% of significant lymphadenopathy is due to Reactive hyperplasia followed by 15% due to Tuberculosis, and 6.9% due to suppurative conditions.

Conclusions: Non diagnostic hyperplasia due to Reactive lymphadenitis commonest cause of significant cervical lymphadenopathy in children. infections are commonest etiology for significant lymphadenopathy.

Keywords: Lymphadenopathy, FNAC

INTRODUCTION

Lymph nodes are the filters along the lymphatic system. Their job is to filter out and trap bacteria, viruses, cancer cells and other unwanted substances to make sure that they are safely eliminated from the body.

Lymphnode enlargement is a common problem in children and evaluation of a child with lymphadenopathy is a common clinical scenario for the pediatricians. Palpable nodes in the cervical region are found in about 80-90% of children Lymphnodes in children may be palpated as early as in the neonatal period.

Lymphadenopathy is defined as an abnormality in the size or character of lymph nodes. A lymph node is considered as abnormally enlarged if it measures more than 10mm in its longest diameter in cervical region is considered abnormal. Palpable supraclavicular nodes are always considered abnormal. Majority of these are due to benign self-limited disease process because self limited viral or bacterial infections are the most common causes.¹

The differential diagnosis of lymphadenopathy is broad. A thorough medical history and meticulous clinical examination is important in narrowing this differential. Systemic infections are the most common causes, majority being systemic viral infections.

Regional lymphadenopathy is defined as the enlargement of lymph nodes within contiguous anatomic regions. It occurs most often because of the presence of an infectious

or inflammatory process in the region drained by the lymphnode(s). Knowledge of the pattern of lymphatic drainage aids in determining the etiology. Regional adenoathy is most common in cervical nodes in children and is usually related to infectious etiologies. In malignancies like Lymphoma and Leukemia, cervical nodes may be enlarged and may be the initial presentation.

The dilemma to approach a child with lymphadenopathy, its evaluation and management, considering various differential diagnoses, stimulated us to take up this study.²

Study aims and objectives were to see the clinical and pathological correlation and to assess the etiological factors in pediatric patients with significant cervical lymphadenopathy.

MATERIAL AND METHODS

The study was conducted in Pediatric Department of Government General Hospital, Guntur. Children with significant cervical lymphadenopathy attending Pediatric OPD and admitted in Pediatric Department during the time period Oct 2016 to Sep 2017 were included in the study.

Methodology

For all patients in study group blood examination for Haemoglobin level, total and differential count, and Erythrocyte sedimentation rate were done by haematological techniques. Mantoux test was done in all patients as a part of routine work up. Fine needle aspiration cytology (FNAC) was done for all patients in study group after selecting most prominent node in patients with source of infection swab was taken for culture and sensitivity. In patients with suspected systemic infections or malignancies relevant tests were done.

Inclusion criteria

Patients between the age group of 1 month to 12 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.

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RESULTS

A total of eighty six patients were studied between Oct 2016 to Sept 2017. Out of 86 cases studied 23 (26.8%) were in-patients admitted in the pediatric ward and 63 (73.2%) were out patients, attending pediatric outpatient department, Government General Hospital, Guntur.

Significant cervical lymphadenopathy is common in 4- 8 years group(43%), followed by 8 – 12 years group (36%) (table-1).

Neck swelling was the presenting symptom in 78 children (90%). Fever and cough were the presenting symptoms in 89.5% and 52.3% of children respectively. History of failure to gain weight and loss of appetite were seen in 31.3% of children (table-2).

History of sore throat was present in 18.6% of children. Swelling was painless in majority of cases (92.9%) and pain in swelling was seen in 7. 1%. In 60 (69.7%) of children there were more than one presenting symptoms. History of Ear discharge and history of Orodonal pain was present in 8.1% of children each. History of contact with a case of tuberculosis was present in 5 children.

Anterior cervical is most commonly affected group of lymphnodes(44.1%) followed by posterior cervical (32.5%), (table-3)

FNAC was done in all 86 cases. The material was adequate for reporting in 96.3% of cases and in other 3.4% cases it was inadequate. In majority of the cases (74.4%) cytology showed reactive hyperplasia. Cytological features of tuberculosis were seen in 13 cases (15%) - caseous necrosis in 9 and granulomatous changes in 4 cases. In 6 cases purulent material was aspirated and was reported as suppurative lymphadenitis (table-4).

DISCUSSION

In this study, an attempt was made to study the etiology of children with cervical lymphadenopathy after correlating with history, clinical findings and relevant laboratory diagnosis. In our study, majority of the children presenting in age group of 4-8 years, probably due to increase in exposure to surrounding environment.⁶

Reddy. MP et al noted majority in 4-8 years group.⁷ But Knight et al⁸ emphasised in one of the largest studies relating age to lymphadenopathy that age is not important in predicting the incidence of significant lymphadenopathy. In the present study, there is male preponderance, but there is no such predilection of sex in study by Mishra S D et al. In the present study, predominant symptom was swelling in neck followed by fever and cough which is correlated with observation of Reddy. MP et al. Knight et al and Reddy et al observed in their study of pediatric cervical lymphadenopathy, the predominant site being upper anterior cervical lymph nodes. However in our study, the predominant sites included both anterior and posterior lymph nodes.^{6,7}

In the present study children with history of contact with adults with tuberculosis was present in 3.12% cases. However Reddy. MP et al noted the same in 90.90%. Knight et al and Reddy. MP et al⁶⁻⁸ noted firm lymphnodes in 96%

Age	No. of cases	Percentage
1mo-4yr	18	21
4yr- 8yr	37	43
8yr-12yr	31	36
Total	86	100

Table-1: Age distribution

Fever	77	89.5
Cough	45	52.3
Weight loss/Failure to gain weight	27	31.3
Loss of appetite	27	31.3
Sore throat	16	18.6
Ear discharge	07	8.1
Orodonal pain	07	8.1
More than one symptom	60	69.7

Table-2: Presenting symptoms

Site	No.of cases	Percentage
Anterior cervical	38	44.1
Posterior cervical	28	32.5
Submandibular	08	9.3
Supra clavicular	06	6.9
Occipital	06	6.9
Posteriorauricular	-	-
Total	86	100

Table-3: Sites of lymphadenopathy in cervical region (n = 86)

Cytology	No. of cases	Percentage
Reactive hyperplasia	64	74.4
Tuberculosis	13	15
Suppurative	6	6.9
Inadequate material	3	3.4
Total	86	100

Table-4: Fine needle aspiration cytology

and 94% cases respectively and our finding (81.25%) is corroborated with the above workers. BCG scar was noted in 78.12% cases in present study which is well correlated with Reddy. MP et al who also noted it in 78%. This may be attributable to awareness about the immunization. In the present study, the commonest cytopathological finding was reactive lymphadenitis in 74.4% followed by granulomatous and suppurative lymphadenitis in 15% and 6.9% respectively. Lake et al and Reddy. MP et al also noted the commonest cytopathological finding as reactive lymphadenitis followed by granulomatous lymphadenitis.^{9,10} Tubercular lymphadenitis¹¹ which was observed in the present study correlated positively with increasing risk factors like unimmunised status, positive Mantoux test, positive history of contact and undernourishment. Other bacterial pathogens like Staphylococci, Streptococci and Citrobacter which are isolated from tonsillopharyngitis and otitis media are involved in causing cervical lymphadenopathy. This may be attributed to poor hygienic conditions, over crowding and poor socioeconomic status. In the present study etiology could not be established in 15.7%

of the cases inspite of various investigations and this finding was well correlated with Reddy. MP et al who was unable to diagnose in 44% of the cases. Hence, further studies and longer follow up involving detection of antigen and antibody against various viruses, parasites and investigations for rare causes of lymphadenopathy may decrease the number of undiagnosed cases.

CONCLUSION

The following conclusions can be drawn from the present study:

Non diagnostic hyperplasia due to Reactive lymphadenitis commonest cause of significant cervical lymphadenopathy in pediatric age group. Infections are commonest etiology diagnosed after relevant investigations. Reactive lymphadenitis is the commonest cause of lymphadenopathy in children followed by tuberculosis. In this study male predominance noted with male to female ratio of 2.3:1. FNAC safe and reliable less time consumable out patient procedure used as an initial diagnostic tool.

REFERENCES

1. Robbins and Cotran Pathological basis of Disease 8th edtn.
2. Leung AK, Davies HD. Cervical Lymphadenitis etiology, diagnosis, management. *Curr Infect Dis Rep.* 2009;11:183-9.
3. Marais BJ, Wright CA, Schaaf HS, Gie RP, Hesselning AC, Enarson DA, Beyers N. Tuberculous lymphadenitis as a cause of persistent cervical lymphadenopathy in children from a tuberculosis-endemic area. *Pediatr Infect Dis J.* 2006;25:142-6.
4. Balaji J, Sundaram SS, Rathinam SN, Rajeswari PA, Kumari ML. Fine needle aspiration cytology in childhood TB lymphadenitis. *Indian J Pediatr.* 2009;76:1241-6.
5. Nelson text book of Pediatrics 21st edition vol 2 pg 1724
6. Annam V, Kulkarni MH, Puranik RB. Clinicopathologic profile of significant cervical lymphadenopathy in children aged 1-12 years. *Acta Cytol.* 2009;53:174-8.
7. Reddy MP, Moorchung N, Chaudhary A. Clinicopathological profile of pediatric lymphadenopathy. *Indian J Pediatr.* 2002;69:1047-51.
8. Knight et al Mulne AF, Vassy LE. When is lymph node biopsy indicated in children with enlarged peripheral nodes? *Paediatrics* 1982;69:391-6.
9. Khan RA, Wahab S, Chana RS, Naseem S, Siddique S. Children with significant cervical lymphadenopathy: clinicopathological analysis and role of fine-needle aspiration in Indian setup. *J Pediatr (Rio J).* 2008;84:449-54.
10. Handa U, Mohan H, Bal A. Role of fine needle aspiration cytology in evaluation of paediatric lymphadenopathy. *Cytopathology.* 2003;14:66-9.
11. Marais BJ, Wright CA, Schaaf HS, Gie RP, Hesselning AC, Enarson DA, Beyers N. Tuberculous lymphadenitis as a cause of persistent cervical lymphadenopathy in children from a tuberculosis-endemic area. *Pediatr Infect Dis J.* 2006;25:142-6.

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