Original Article

A clinicopathological profile of significant cervical lymphadenopathy in children aged 1-12 yrs and its management

Apaasaheb Vasant Ingale[1*], Sushil Bhogavar[2]

[1]Associate Professor, [2]Sr. Resident, Department of Surgery, Government Medical College, Miraj, Sangali, Maharashtra, INDIA.
Email: ingalep77@gmail.com

Abstract

In the present study an attempt was made to study the etiology and management of children presenting with cervical lymph node enlargement after correlating the historical information and clinical findings with those of the laboratory abnormalities. In this study, 70 children between the age group 1 year to 12 years with significant cervical lymphadenopathy attending Department of surgery Govt. Medical College Hospital were studied.In the present study majority of the patients were in the age group of 4-8 years (38.57%) followed by 8 years to 12 years age group (32.85).Common etiologies in patients with lymphadenopathy were tonsillitis and/ or pharyngitis in 22.85%, Ear infection in 8.6%, scalp infection in 10%, orodental infection in 10%, tuberculosis in 22.85% malignancy in 2.9 %, and non diagnostic hyperplasia in remaining 21.42% Streptococci and staphylococci were the common organisms producing local infections with enlargement of cervical lymph nodes.. Tuberculosis was the leading cause among specific systemic diseases producing chronic cervical lymphadenopathy. Duration of lymph node enlargement, site and distribution of lymphadenopathy, character of lymph nodes and presence of organomegaly were found to be of diagnostic value. Sensitivity of FNAC in diagnosing tuberculosis was 68.75%.11 Out of 16 cases of tubercular lymphadenopathy FNAC could diagnose 11 cases (68.75%), ESR was raised in 6 cases (31.25%), chest x-ray was suggestive in 9 cases

Keywords: clinicopathological, cervical lymphadenopathy.

[*]**Address for Correspondence:**
Dr. Apaasaheb Vasant Ingale, Venkatesh Shrushti, Golden Park, Madhavnagar Road, Sangali, Maharashtra, INDIA.
Email: ingalep77@gmail.com
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INTRODUCTION

Lymph node enlargement is a common problem in children and evaluation of a child with lymphadenopathy is a common clinical scenario for surgeons. Lymph nodes in children may be palpated as early as in the neonatal period [1]. Being a part of the reticulo-endothelial system lymph nodes serve as the termination point for lymphatic vessels that drain lymph from most tissues of the body. Presence of abundant phagocytic cells, antigen presenting cells and lymphocytes provides ideal first line of defense against pathogens. As a result, most of the normal children have palpable cervical lymph nodes[2]. The important point is to decide whether they are abnormally enlarged and, whether associated with serious underlying disease process, A lymph node is considered as abnormally enlarged if it measures more than 10mm in its longest diameter[3]. Enlargement of two or more noncontiguous lymph node regions is known as generalized lymphadenopathy[4]. Causes include systemic infections, malignancies, Regional lymphadenopathy is defined as the enlargement of lymph. nodes within contiguous anatomic regions6. It occurs most often because of the presence of an infectious or inflammatory process in the region drained by the lymph node(s). Regional adenopathy is most common in cervical nodes in children and is usually related to infectious etiologies[5]. Until recently lymph node biopsy was the investigation of choice for cases with lymphadenopathy, especially when malignancy is suspected[6]. However, fine needle aspiration cytology has been advocated as an alternative procedure in recent times. It has been found to be a useful adjunct diagnostic technique especially in children.

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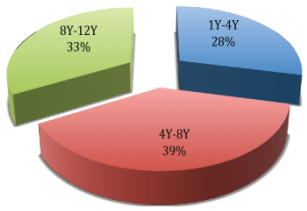
MATERIAL AND METHODS

The study was carried out in Department of Surgery in Govt Medical College Hospital from October 2011 to September 2013.Children between the age group of 1 yr to 12 yrs with cervical lymphadenopathy i.e. node size >1cm taken for study. Information taken including age, sex, duration, associated symptoms like fever, cough, weight loss, loss of appetite, infection, ear discharge, presence of wound or skin lesion. Also information taken regarding site, size, consistency, number, mobility, presence of sinus. Significant findings in systemic examination were recorded. Final diagnosis was made after doing CBC, ESR,X-ray chest, FNAC, Biopsy, HIV and studied accordingly.

RESULTS

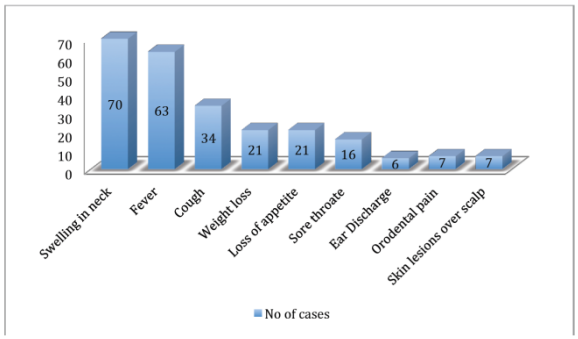
A total of 70 patients were studied between October 2011 to September 2013. Out of 70 cases 46 were out patients, attending surgery OPD and rest were admitted in Govt Medical College Hospital. Majority of the patients with cervical lymphadenopathy were in the age group of 4-8 years i.e. 27 (38.57%), followed by 8 to 12 yrs i.e. 23 (32.85%) and least in 1 to 4 years age group i.e. 20 (28.57%).

Age Distribution



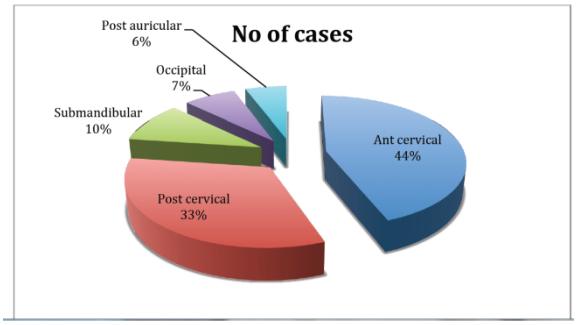
Incidence was observed commonly in male (68.57%) than in female (31.42%) in ratio of 2.18 : 1.

Graph no 4: Symptoms (No of cases)



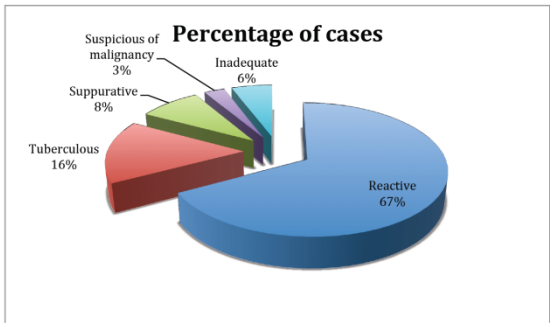
Neck swelling was main symptom in all cases and associated symptoms like fever and cough were in 90% and 48.50% respectively. Weight Duration was less than one month in 57.14% cases and 1to 6 months in 34.28% of cases. Six cases (8.57%) had neck swelling for more than 6 months. Out of 70 cases, anterior cervical nodes were commonly involved (44.28%) followed by posterior cervical lymph nodes (32.85%). Submandibular lymph nodes in 10% of cases, Occipital and Posterior auricular in 7.1% and 5.71% of cases respectively.

Graph No. 5: Sites of lymphadenopathy in cervical region



In 51.4% of patients size was below 2cm and between 2-4 cm in 48.6% cases..In 81.4% patients enlarged nodes were discrete and mobile. Matting was noted in 18.6% patients, out of which 1 patient had discharging sinus formation. Hepatomegaly seen in 9 cases (12.85%), hepato splenomegaly in 7 (10%). Blood counts were done in all cases. 37.1% of children had leucocytosis.Neutrophilia was found in 45.71% and lymphocytosis in 21.42%. 51.4% of children had anemia. FNAC was done in all 70 cases. Final Diagnosis was made after FNAC and Biopsy. 51 patients (72.85%) were diagnosed with Reactive lymphadenopathy. 16 patients (22.85%) were diagnosed with tuberculous lymphadenopathy. 2 patients (2.85%) were having Hodgkins Lymphoma 1 patient was having Cat Scratch disease.

Graph No. 7: Fine needle aspiration cytology



DISCUSSION

In the present study majority of the patients were in the age group of 4-8 years (38.57%) followed by 8 years to 12 years age group (32.85%). Mishra SD *et al* in their

study observed 36.5% patients in 4-8 yrs age group and 24.1% in 8-12 years age group15. On-going antigenic stimulus the lymphoid growth may exceed the normal limits. This could be the reason for maximum number of cases in this age group. Knight PJ *et al* emphasized relating age to lymphadenopathy that age is not important in predicting the incidence of significant lymphadenopathy23.In the present study incidence in males (68.57%) was more than that in females (31.42%) with male to female ratio 2.18:1 .Moore *et al* found male preponderance with male to female ratio 3:1 .Mishra SD *et al* observed slightly higher incidence in males with male to female ratio 1.1:13-5 .Sheikh MP *et al* observed higher incidence in males(55.6%) as compared to Females (44.4%) 10. The male preponderance in the present study was similar to these studies. In majority of patients the presenting symptom was swelling in the region of neck (100 %), followed by fever (90%) and cough (48.5%). This was similar to the study by Reddy MP *et al* who studied 100 children with generalized lymphadenopathy observed swelling in neck as most common presenting symptom (52% of cases)13. Sheikh MM *et al* observed history of swelling in 100% of cases, and fever in 86.5% of the cases10. Duration of the lymph node swelling was more than 1 month and less than 6 months in 34.28% of the cases, less than one month in 57.14% and more than 6 months in 8.57% of the cases. Sheikh MM *et al* observed the duration of enlarged lymph nodes to be 1 month to 6 months in 51%, more than 6 months in 25% cases and less than 1 month in 8% of the cases10. In the present study upper anterior cervical nodes were commonly involved (44.28%) cases. Knight PJ *et al* observed in their study of 239 children with lymphadenopathy 47% of children having upper anterior cervical lymph node. enlargement which formed predominant site of cervical lymphadenopathy12. Majority (87.14%) of the enlarged nodes were firm in consistency in the present study which is similar to the study by Lake and Oski who observed firm nodes in all 45 cases with cervical lymph node enlargement11. In the present study matted lymph nodes were found in 18.6% of the cases. In the study by Mishra SD *et al*, who observed the matted nodes in 6-10% of their patients [33] ".In the present study discharging sinus formation was observed in 1case (1.4%). Mishrra SD *et al* in their study of cervical lymphadenopathy in children found discharging sinus in 1.5% of the cases17. Systemic examination revealed organomegaly (Hepatomegaly and/or splenomegaly) in 22.85% of the cases. Barton LL *et al* in their study observed that out of 74 children with cervical lymphadenopathy 7% had splenomegaly and 5 % had hepatomegaly[8]. Leucocytosis was observed in 37.1% patients in the present study with mean 14200/mm3; range 4000-28000. In a study by Barton LL *et al* mean leukocyte count was 13300/mm3; range 3600-32100 15 Lymphocytosis was observed in 21.42% of patients in the present study. Bedside FNAC was done in all the cases as a primary diagnostic tool in the evaluation of children with cervical lymphadenopathy. In majority of the cases in present study cytological picture was of reactive. hyperplasia (67.14%) followed by granulomatous lesion in 15.71% and pus was aspirated (suppurative) in 6 cases (7.1%) and suspicious of malignancy in 2.85 % Mishra SD *et al* observed reactive hyperplasia in 71.5%, granulomatous changes in 17.5 %, and abscess in 6.6% and malignancy in 3.6% of their cases17. Knight PJ *et al* in their study of 175 children with cervical lymphadenopathy found reactive hyperplasia in 57.5%, granulomatous changes in 28.2%, and malignancy in 17.9% cases of FNAC12. Various studies have reported the sensitivity of FNAC in diagnosing tubercular lymphadenitis as 16.5%, 77%, 80.7%, 84.4%, 95% and 100%[20,23,24,25,26,29] In most of the studies including the present study the predominant cytological finding was that of reactive hyperplasia.

CONCLUSION

Occurrence of cervical lymphadenopathy is a common problem in children. A detailed history and physical examination is the initial approach to these children. Cervical lymphadenopathy is predominantly associated with infections in the draining area of lymph node (like throat, ear, scalp) that will be obvious on the clinical examination. Treatment with appropriate antibiotics is sufficient in these patients. Cervical lymphadenopathy can be associated with serious systemic diseases like tuberculosis, HIV infection and brucellosis, although benign reactive hyperplasia is also common in children. Presence of enlarged lymph nodes associated with symptoms or signs of serious systemic diseases should be looked for in every child where obvious source of infection is not apparent. Such children need detailed evaluation with investigations like chest X-ray, Mantoux test, FNAC and Serology. FNAC is a simple with minimum complications with good diagnostic accuracy. It can be used as a primary diagnostic test in children with cervical lymphadenopathy. It is a reliable test in diagnosis of tubercular lymphadenitis especially when used in combination with other tests. Further studies and a longer follow up involving detection of antigen antibodies against lesser known viruses, parasites and investigations for rarer causes of cervical lymphadenopathy may decrease the fraction of many of these undiagnosed reactive hyperplastic conditions.

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