THE SPECTRUM OF CERVICAL LYMPHADENOPATHY IN CHILDREN: A STUDY IN RURAL NORTH INDIA

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HOW TO CITE THIS ARTICLE:

Pawan Tiwari, Satya Kiran Kapoor, Madhu Tiwari, Yogesh Yadav. "The Spectrum of Cervical Lymphadenopathy in Children: A study in Rural North India". Journal of Evolution of Medical and Dental Sciences 2014; Vol. 3, Issue 37, August 21; Page: 9580-9584, DOI: 10.14260/jemds/2014/3239

ABSTRACT: INTRODUCTION: Cervical lymphadenopathy (CLA) is a frequently encountered problem in clinical practice in paediatrics patients. Lymphadenopathy is the disease that causes abnormality in size and consistency of lymph nodes. **AIM:** To determine the causes of persistent lymphadenopathy in children and to test a diagnostic approach in its management. **METHODS:** This study was performed at our institute, over two year period amongst children between ages of 1-15 years with persistent lymph node enlargement of >1 cm in diameter and >2 weeks duration. **RESULTS:** 38(76%) had unilateral cervical lymph node enlargement, while in 12 children (24%) the pathology was bilateral. We found that in 24 children (48%) the lymph nodes regressed in size over 2 weeks' time and in 12 children, (24%) they regressed in 4 weeks' time as proved by ultrasonography examination. Fever was the commonest systemic manifestation in these children (72%). **CONCLUSION:** Reactive lymphadenitis is the commonest cause of cervical lymph node enlargement in children. Majority of lymph nodes regress in 4 weeks' time. Persisting lymph nodes more than 4 weeks warrant histological examination. Tuberculosis is a common cause of cervical lymphadenopathy among Indian patients.

KEYWORDS: Lymphadenopathy, Lymph node, Lymphadenitis, Paediatrics.

INTRODUCTION: Cervical lymphadenopathy (CLA) is a frequent problem in clinical practice in paediatrics age group.¹Lymphadenopahy is the pathological process of lymph nodes that causes them abnormality in size and consistency. Common benign causes include bacterial infection, adenoviral illness, and tuberculosis whereas the malignancies causing generalized lymphadenopathy include leukemia, lymphoma or metastasis.² Lymphadenitis refers to lymphadenopathies that are due to inflammatory conditions in which there is nodal enlargement, pain, skin changes, fever, oedema and/or pus formation.

In the pediatric age group, usually lymphadenopathies are caused by an infectious agent, often viral in origin. Enlarged, palpable lymph nodes are common due to reactive hyperplasia of the lymphoid tissue.³ Cervical lymphadenitis is a frequently encountered malady and most of the patients with this condition are treated successfully by their primary care physicians. Histological examination and surgical consultation are, however, frequently required to assist in the diagnosis and treatment of patients who do not respond to initial therapy or in whom there is a doubt for a neoplastic process.⁴

Though the incidence of the lymphadenopathy in children is high, few original studies on the subject were conducted. Majority of the studies were conducted to establish the causative organism. The aim of this study was to know the most common causes of persistent cervical lymphadenopathy and the management policy based on clinical, laboratory, ultrasonic and histological findings.

ORIGINAL ARTICLE

MATERIAL AND METHODS: This study was conducted over two year period from August 2011 to September 2013 in our institution to evaluate 50 children with persistent lymphadenopathy. Persistent lymphadenopathy is defined as enlarged lymph nodes (>1.0 cm in diameter) and lasting for more than 2 weeks. In this study all children from 1 year to 15 years of age with the diagnosis of persistent lymphadenopathy were included.

Demographic distribution was noted and associated diseases of the children were recorded. Initial work up of all patients included: detailed clinical examination, complete blood count, blood film, erythrocyte sedimentation rate (ESR), Mantoux test, chest X ray (CXR) and ultrasonic examination, histological testing by fine needle aspiration cytology (FNAC) or excisional biopsy were preserved for cases with abnormal findings (abnormal white blood cells (WBC) count; abnormal blood film; high ESR > 20 ml/hr; Mantoux test (> 10 mm).

RESULTS: A total of fifty children were observed during the specified period of time. The age of patients ranged 1-15 years with a median of 6 years and a mean of 4.6 \pm 2.1SD years. Males were 32 (64%) and females were 18(36%).All had persistent lymph node enlargement based on criteria defined (Table 1). 38(76%) had unilateral cervical lymph node enlargement, while in 12 children (24%) the pathology was bilateral. (Table 2).

The jugular-digastric and the submandibular lymph nodes were the two most common enlarged nodes in 76% of children. Sub-mental, anterior cervical, posterior cervical, occipital accounted for the rest of the pathology (24%). (Table 3).

We found that in 24 children (48%) the lymph nodes regressed in size over 2 weeks' time and in 12 children (24%), they regressed in 4 weeks' time as proved by ultrasonography examination. The FNAC showed reactive lymphoid hyperplasia in these 14 children (Table 4). All of these children had tender, mobile, and soft nodes on clinical examination. In all of them complete blood count, blood film, ESR and CXRs were normal. Ultrasound showed enlarged lymph nodes with homogenous echotexture in all of them.

Fever was the commonest systemic manifestation in these children 36 (72%), 8 (16%) had lymph node abscess on initial presentation (Table 5). Based on clinical and ultrasonic findings, surgical excision and histological testing confirmed the diagnosis; tuberculous lymphadenitis was diagnosed in 6 children (12%) based on clinical, Mantoux test (>10 mm in diameter) and caseating granuloma on lymph node histology. The ultrasound showed a non-homogenous echotexture with necrotic shadows and areas of calcification.

2 (4%) of the children had bilateral lymph node enlargement and splenomegaly or Hodgkin's lymphoma on excisional biopsy. These two children had high ESR on initial presentation, and their CXR's showed widened mediastinum with hilar-adenopathy.

DISCUSSION: The workup of palpable lymph nodes is a routine clinical exercise for the general practitioners and the pediatricians. Most of the etiologies of CLA are benign and usually subsides spontaneously. It may be a sign of malignancy or systemic disease; hence consideration of other causes is very important. Cervical lymphadenopathy is a frequent occurrence in children in both the primary care and hospital setting. In a study 90% of children aged 4-8 years were found to have palpable cervical lymph nodes.⁵

Larsson et al reported that 38- 45% of apparently healthy children have palpable cervical lymph nodes. 6

The causes of a persistent neck lump in children is different from adults because of higher incidence of congenital anomalies and infectious diseases and malignant pathology is rare. In our study congenital anomalies were excluded and observation was restricted to persistently enlarged lymph nodes.

It is well established that the non-presence of clinical inflammatory signs, negative laboratory testing and progressive decrease in size of lymph node indicate reactive hyperplasia.⁷ The present study states that reactive hyperplasia changes are the commonest pathology in children as established by others. We found that most cases of lymphadenopathy are self-limiting and require no definitive treatment.

If lymph nodes do not decrease in size after 4 weeks it is an indication for diagnostic histology. Majority of studies point that bilateral lymphadenopathy is more likely to be reactive in nature but in present study in 76% of children lymph node enlargement was unilateral.⁸ Mobility, softness and tenderness are almost always associated with reactive changes, which is similar to observation by other researchers.⁹

The present study establishes that ultrasound is a valuable diagnostic tool for showing the size, shape, echotexture of lymph nodes and progress of the disease.

A homogenous echotexture, oval shape, central necrosis, blurred margins were associated with reactive hyperplasia in majority of cases, while a non-homogenous echotexture suggests other diagnosis. Ultrasonography should not be considered as a definitive mean to rule out neoplasia in patients with persistent lymphadenopathy.¹⁰

CONCLUSION: Enlargement of cervical lymph nodes is a common problem in children. Reactive hyperplasia secondary to benign infections causes is usually the commonest occurrence. Majority of these cases regress in 4 weeks' time. Persistent lymph nodes more than 4 weeks require histological examination done. A management policy should be adopted to diagnose children with persistent lymph node enlargement.

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Sex	Number	Percentage	
Male	32	64	
Female	18	36	
Total	50	100	
Table 1: Showing prevalence among male and female			

Side	Number	Percentage	
Unilateral	38	76	
Bilateral	12	24	
Total	50 100		
Table 2: Showing distribution according to side			

Site	Number	Percentage		
Juglo-diagastric	20	40		
Submental	18	36		
Submandibular	01	02		
Anterior Cervical	03	06		
Posterior Cervical	06	12		
Occipital	02	04		
Table 3: Showing distribution according to site				

Diagnosis	Number	Percentage
Reactive hyperplasia (Regressed in 2 wks.)	24	48
Reactive hyperplasia (Regressed in 4 wks.)	12	24
TB lymphadenitis	08	16
Lymph node abscess	04	8
Hodgkin's lymphoma	02	4
Total	50	100
Table 4: Diagnosis of persistent lymphadenopathy in children		

Presenting symptoms	Number of children	Percentage		
Fever	36	72		
Neck mass	34	68		
Cough	11	22		
Loss of weight	06	12		
Sore throat	15	30		
Loss of appetite	06	12		
Headache	04	08		
Malaise	06	12		
Arthralgia	11	22		
Earache	02	04		
Scalp infection	04	08		
Table 5: Distribution of the subjects according to the presenting symptoms				

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> Date of Submission: 06/08/2014. Date of Peer Review: 07/08/2014. Date of Acceptance: 13/08/2014. Date of Publishing: 19/08/2014.