
CAUSES AND PRESENTATION OF CERVICAL LYMPHADENOPATHY

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ABSTRACT**OBJECTIVE**

To determine the proportion of cervical lymphadenopathy in systemic diseases, their presentation and investigative tools.

METHODOLOGY

This descriptive study was carried out from 1st July 2014 to 30 June 2017 in ENT and head and neck department Naseer Teaching Hospital and Town Teaching Hospital, Peshawar. Total of 270 patients with enlarged cervical lymph nodes, of either sex and of any age were approached for inclusion into the study. Patients with suspected acute inflammation were given a trial of antibiotic and followed for two weeks were excluded from the study. Excisional biopsy of the lymph nodes was performed in all these patients with six weeks or more duration.

RESULTS

In our study out of 270 patients, 158 (58.5%) were males and the majority of patients (63.3%) had ages from 11-40 years. Tuberculous cervical lymphadenopathy was diagnosed in 145 (53.7%) patients, reactive hyperplasia in 53 (19.6%), lymphoma in 32 (11.8%), metastasis to cervical lymph nodes in 30 (11.1%), sarcoidosis in 7 (2.6%) and other very rare conditions as Kawasaki, Kikuchi and Rosi Dorfman were found in only one of each (0.4%). About 136 (50.4%) of the patients had involvement of multiple lymph nodes while 134 (49.6%) had single swelling. The matted lymph nodes were found in 162 (60%) whereas discrete lymph nodes were found in only 108 (40%) cases. Cold abscess was found in 19 (7%) of patients.

CONCLUSION

Tuberculosis is the commonest cause of cervical lymphadenopathy, with the majority of these patients having multiple lymph node involvement. In children, usually cervical lymphadenopathy is reactive or infective while in older age mostly metastatic.

KEY WORDS: Cervical lymphadenopathy, Excisional biopsy of lymph nodes

INTRODUCTION

The term lymphadenopathy refers to the enlargement of the lymph nodes, either due to the disease of lymph nodes or secondary to the systemic diseases. The size of cervical lymph node less than 1cm in diameter is generally considered to be normal. Different causes of cervical lymphadenopathy include infections, inflammatory diseases, degenerative diseases and neoplasms.¹

Infectious/inflammatory causes of cervical lymphadenopathy are mainly tuberculosis, cat-scratch disease, syphilis, leprosy, actinomycosis, rhinoscleroma, and fungal infections. Granulomatosis with polyangiitis, Churg-Strauss syndrome, Behçet disease, chronic granulomatous disease (tuberculosis), and sarcoidosis. Kimura's disease is one of the rare chronic inflammatory disorder characterized by the head and neck lymphadenopathy.² Toxoplasmosis is a parasite infectious disease caused by the intracellular *Toxoplasma gondii*.³

The diagnosis of cervical lymphadenopathy is mainly based on careful history and physical examination followed by different tools of investigation. The age of the patient gives clear clue in diagnosis of cervical lymphadenopathy, usually cervical lymphadenopathy in children is reactive or

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infective while in older age mostly metastatic cervical lymphadenopathy noted.⁴Physical findings of enlarged lymph nodes like tenderness and fluctuations are important clues of infective diseases while hard and fixed lymph nodes indicate malignant process. In lymphoma, usually there are multiple enlarged nodes which feel rubbery to palpation. Constitutional symptoms such as fever, weight loss, fatigue or night sweats could suggest disorders such as tuberculosis, lymphoma, collagen vascular diseases, unrecognized infection or malignancy. The presence of fever is commonly associated with infections.⁵Cold abscess is a clinical feature of tuberculosis.⁶

The list of important investigative tools used to reach to the conclusion of cervical lymphadenopathy are ultrasound, FNAC, CT scan/MRI and excisional biopsy. Ultra sound is an excellent first line investigating tool for enlarged lymph nodes,using Grey ultrasound scale and avoids invasive procedures.⁷Fine needle aspiration cytology is minimal invasive procedure usually used to diagnose the cervical lymphadenopathy. To confirm the histopathological diagnosis, an excision biopsy is performed on the palpable and largest and easily excisable lymph nodes.⁸Computed tomography (CT) of the neck, chest, abdomen and pelvis is the most appropriate initial investigation following FNAC diagnosis of metastatic adenocarcinoma in cervical lymph nodes with unknown primary.⁹

METHODOLOGY

This descriptive study was undertaken from 1st July 2014 to 30 June 2017 in ENT and head and neck department Naseer Teaching Hospital and Town Teaching Hospital, Peshawar. Total of 270 patients with enlarged cervical lymph nodes, of either sex and of any age were approached for inclusion into the study. Patients with suspected acute inflammation were given a trial of antibiotic and followed for two weeks were excluded from the study. Excisional biopsy of the lymph nodes was performed in all these patients with six weeks or more duration. Written informed consent for recruitment into the study was obtained from all patients.

Detailed history and physical examination were performed as part of routine clinical care. Lymph nodes were examined for site, size, number, whether matted or discrete, presence of tenderness, consistency, and their relation to underlying structures. Relevant investigations were carried out in all cases including screening for Hepatitis B and Hepatitis C infection, complete blood picture, erythrocyte sedimentation rate (ESR) and chest x-ray. Excision biopsy was performed.

Statistical analysis was done using SPSS version 12.

RESULTS

Out of 270 patients, 186 (68.9%) were males and the majority of patients had ages from 12-40 years. Tuberculous cervical lymphadenopathy was diagnosed in 141 (74.5%) patients, reactive hyperplasia in 30 (11.1%), metastasis to cervical lymph nodes in 18 (6.7%), lymphoma in 12 (4.4%) and Kikuchie's lymphadenitis in 9 (3.3 %) cases. About 146 (80%) of the patients had involvement of multiple lymph nodes while 36 (20%) had single swelling. 189 (70%) of the patients had matted lymph nodes whereas discrete lymph nodes were found in only 36 (20%) cases.

A single lymph node group was involved in 54 (60%) patients and more than 2 lymph node groups were involved in 11 (12.2%) patients. In 61 (67.8%) cases, there were matted lymph nodes, whereas 16 (17.8%) of the patients were having discrete lymph nodes.

The posterior triangle (level V) was the most common site of lymphadenopathy in 45 (50%) patients, followed by upper deep cervical (level II) in 28 (31.1%) and submandibular region (level I) in 8 (8.9%) patients. Cold abscesses were present in 7% as shown in table 2.

Tuberculous cervical lymphadenopathy was the most common histological diagnosis in 141/270 (52.2%) patients followed by reactive hyperplasia in 50/270 (18.5%), lymphoma 33/270 (12.2%), metastatic 29/270 (10.7%), other rare diseases like Kawasaki disease, Rosi Dorfman and Kikuchie's were found in 1/270 (0.4%) each as shown in table 3.

Table;1, Demographic presentation

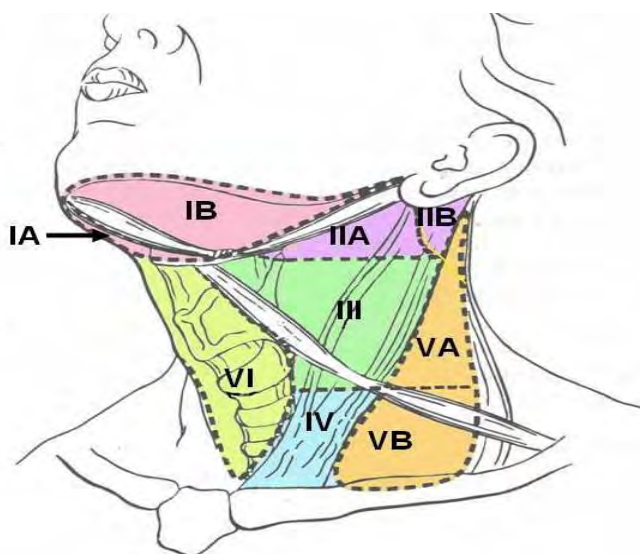
Characteristics	Number of patients	Percentage
Male	158/270	58.5%
Female	112/270	41.5%
Less than 10 years	47/270	17.4%
11-40 years	171/270	63.3%
More than 40 years	52/270	19.3%
Single lymph node group	134/270	50.4%
Multiple lymph node groups	136/270	49.6%
Matted lymph nodes	162/270	60%
Discrete lymph nodes	108/270	40%

Table 2; Involvement of lymph node groups and abscess

Node groups/abscess	Number of patients	Percentage
Posterior triangle nodes	131/270	48.5%
Upper deep cervical nodes	97/270	35.9%
Submandibular nodes	25/270	9.3%
Pretracheal	17/270	6.3%
Cold abscess	19/270	7%

Table 3: Etiology of cervical lymphadenopathy

Causes	Number of patients	Percentage
Tuberculosis	145/270	53.7%
Reactive	53/270	19.6%
Lymphoma	32/270	11.8%
Metastatic	30/270	11.1%
Sarcoidosis	7/270	2.6%
Kickuchie's disease	1/270	0.4%
Rrosi dorfman	1/270	0.4%
Kawasaki disease	1/270	0.4%

Figure 1; levels of cervical lymph nodes

Grey Ultra Sound Scale

Size	The largernodes tend to have a higher incidence of malignancy (reactive nodes can be as large as metastatic nodes),
Shape	Metastatic nodes tend to be round with a short to long axes ratio greater than 0.5, while reactive or benign lymph nodes are elliptical in shape,
Borders	Metastatic lymph nodes tend to have sharp borders whilst benign lymph nodes usually show un-sharp borders (metastatic nodes with extra cellular spread may demonstrate ill-defined borders),
Echogenecity	Metastatic lymph nodes are predominantly hypoechoic relative to the adjacent musculature, (metastatic nodes from papillary carcinoma of the thyroid are usually hyperechoic),
Necrosis	Intranodal necrosis may be found in metastatic and tuberculosis nodes,
Calcification	Metastatic cervical nodes from papillary carcinoma of the thyroid tend to show calcification.

DISCUSSION

Cervical lymphadenopathy is a manifestation of a spectrum of diseases ranging from infective process to malignant diseases, thereby invasive diagnostics procedure are required to reach to the proper diagnosis¹⁰. In most of the studies, the most common diagnosis in adults was malignancy while in children infections and benign masses were common. Although infectious causes of lymphadenopathy are more prevalent in the pediatric population compared with adults, neoplasms should also be considered.¹¹ Imaging studies, like ultrasound, can provide valuable information for accurate diagnosis.¹² Fine needle aspiration cytology (FNAC) of lymph nodes is a simple and cost effective, out-patient procedure used for diagnosis of various causes of lymphadenopathy, without serious complications. Overall fine needle aspiration cytology accurately predicted the histological findings (89%) with a sensitivity of 93.1%, specificity of 100%.¹³ In our study tuberculous cervical lymphadenopathy was the most common histological diagnosis in 141/270 (52.2%) patients followed by reactive hyperplasia in 50/270 (18.5%), lymphoma 33/270 (12.2%), metastatic 29/270 (10.7%), Kawasaki disease In Uganda the major causes of cervical lymphadenopathy were: tuberculosis (69.4%), Kaposi's sarcoma-KS (10.2%) and reactive adenitis (7.4%).¹⁴ Our study also found very similar findings to a study conducted in Kathmandu¹⁵. Lymphadenopathy in HIV/AIDS patients may reflect a serious condition, most likely tuberculosis and lymphoma. Since patients might underestimate lymphadenopathy, physicians would rather list these entities for diagnosis.¹⁶

In a study at University Medical Center Homburg/Saar, the distribution of the most common pathological conditions was as follows: Non-specific reactive hyperplasia (35.5 %), metastases (34.3 %), lymphoma (16.3 %), granulomatous lesions (6 %), abscess formations (2 %), necrotic lymphadenitis and Castleman's disease one case of each.¹⁷ In a study in Kolkata, tuberculous lymphadenitis was the most common finding (46.7%), while reactive hyperplasia (45%) in patients less than 20 years of age. Malignant pathology accounted for 13.7% of cervical lymph node enlargement, most of which was due to metastatic squamous cell carcinoma (67.7%).¹⁸

CONCLUSION

- In children, usually cervical lymphadenopathy is reactive or infective while in older age mostly metastatic.
- Tuberculosis is still the commonest cause of cervical lymph node enlargement in our setting in Pakistan, usually involving multiple lymph nodes.
- Lymph node excision biopsy is a well-established diagnostic procedure practiced worldwide.

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