
A Clinico-Etiological Study of Cervical Lymphadenopathy in Otorhinolaryngology Practice

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Abstract: Cervical lymphadenopathy is a condition commonly seen in general, paediatric as well as Otorhinolaryngology practice. It is seen across all age groups and both genders. It shows a wide range of clinical features with an equally wide variety of causative factors. As the diagnosis can vary from a simple pharyngeal infection to a malignancy, appropriate investigations and timely diagnosis become a matter of concern to both the family as well as the treating doctor. Therefore a systematic clinical approach with minimal array of investigations is required to avoid unnecessary delay in diagnosis and designing the management protocol. It is essential to keep this in mind while investigating and treating these patients. The aim of this study was to determine the etiological factors in cases of cervical lymphadenopathy seen in Otorhinolaryngology clinic at a tertiary care center. 50 cases of the same, aged between 6 to 70 years attending ENT OPD at Dr. D. Y. Patil Medical College and Hospital, DPU, Pune, India, were studied over a period of 8 months. Reactive lymphadenitis was found to be the commonest cause followed by metastatic neck disease and tuberculosis as causes of cervical lymphadenopathy. There was a male preponderance with adults affected more than children. Chronicity of the condition also helped in pointing to certain etiologies. The variety of etiological factors is huge and clinical diagnosis alone may prove to be inaccurate. Fine Needle Aspiration Cytology proved to be the most reliable tool for definitive diagnosis.

Keywords: Cervical Lymphadenopathy, FNAC, Cervical Lymphadenitis, Cervical Metastasis

1. Introduction

Lymph nodes are small bean shaped clusters of lymphoid tissue scattered throughout the lymphatic system, functioning as a junction for numerous afferent and efferent lymph vessels.

Human body has approximately 600 lymph nodes out of which about 300 are situated in the neck. Out of these, submandibular, axillary and inguinal lymph nodes can be palpable in a healthy person normally. [1]

The enlargement of these lymph nodes is known as lymphadenopathy and is an index of spread of infection and malignancy. [2]

Lymphadenopathy indicates lymph node abnormality of number, size or consistency. It can be

- (1) Generalized
- (2) Localized
- (3) Dermatopathic as per etiology and lymph nodes involved. [3]

Cervical lymphadenopathy is a form of localized lymphadenopathy which can further be classified as per the duration of the disease as follows:

- (1) Acute - duration of less than 2 weeks
- (2) Subacute - duration of 2 to 6 weeks
- (3) Chronic - duration of more than 6 weeks. [4]

Clinical examination of patients with cervical lymphadenopathy comprises of inspection, palpation, ENT examination and more extensive examinations as indicated, including palpation of other lymph node regions (axillary, inguinal etc.) or of the liver and spleen. [5]

Lymph nodes in the submandibular and upper cervical regions tend to be greater in size than the lymph nodes in other regions of the neck therefore submandibular and jugulodiastriac nodes of 1.5 cm or more are considered pathological whereas rest of cervical lymph nodes of size more than 1 cm are taken as abnormal. [6]

In general practice, it has been observed that amongst cases of lymphadenopathy, approximately 25% patients come

with generalized lymphadenopathy whereas 75% come with localized lymphadenopathy. [7, 8]

A Dutch study has found 0.6% incidence of lymphadenopathy in general practice. In this series of 2556 patients, 10% were referred to specialists for further management, 3% required an excisional biopsy but only 1.1% turned out to be malignant. [9]

Epidemiologically, incidence of cervical lymphadenopathy ranges from 38 to 45%. [10]

In pediatric age group, it is common to find reactive cervical lymph nodes as their immune system is less capable of fighting infections and requires producing large quantities of lymphocytes. Because of the immune response in the lymph nodes, there is cellular hyperplasia, tissue edema, vasodilatation, lymphocyte infiltration and capsular distension causing increase in the size and tenderness of the involved lymph node, especially in cases with acute infections. [1]

Depending on the age group, the etiology differs with reactive lymphadenitis being commonest in the pediatric and adult, both the age groups. Tuberculous lymphadenopathy is much more common in children than adults whereas malignancy is seen much more commonly in adults.

Now-a-days various diagnostic modalities like fine needle aspiration cytology, ultrasonography (USG), computerized tomography and PET CT neck are available to ascertain the cause of cervical lymphadenitis. Out of these, FNAC remains the gold standard for routine workup of a cervical lymphadenopathy case. [11]

2. Methods and Materials

All cases of cervical lymphadenopathy visiting ENT OPD were considered for the study. Age group was 6 to 70 years and both sexes were included in the study. Patients with generalized lymphadenopathy or chronic morbid conditions like diabetes mellitus, immunocompromised state were excluded from the study.

The details noted were

2.1. History

On history, duration of symptoms was noted to classify them as acute, subacute and chronic lymphadenopathy.

Other associated symptoms like pain in the swellings, fever, loss of weight, loss of appetite, dysphagia and recurrent episodic attacks were also noted. Symptoms suggestive of head and neck malignancy or a systemic illness

were asked for.

2.2. General Examination

Detailed general examination was carried out to rule out generalized lymphadenopathy.

Other systems were also examined to find probable etiological factor.

A detailed clinical examination of oral cavity, pharynx and dentition was also carried out to make a probable clinical diagnosis.

2.3. Clinical Examination of Neck

Neck was palpated standing behind the patient for submental, submandibular, upper/ middle/ lower jugular and posterior triangle lymph nodes. All groups of neck nodes were examined for

- (1) Number – single/ multiple at single level or multiple levels
- (2) Size
- (3) Consistency- soft, firm, hard, matted.
- (4) Tenderness

It was noted whether nodes were unilateral or bilateral.

2.4. Investigations

All the patients were subjected to

- (1) Routine hematological investigations especially hemogram and ESR.
- (2) Fine Needle Aspiration Cytology
- (3) Ultrasonography to check for number, site, size and features of the cervical lymph nodes.
- (4) Chest x ray to rule out a primary Tuberculous complex
- (5) CT scan whenever indicated, mainly in cases of malignancies.
- (6) Excision biopsy of the lymph node if the FNAC proved to be inconclusive.

3. Results

This case series had a total had a total of 50 patients who visited our OPD. These patients had presented with acute, subacute or chronic cervical lymphadenopathy as their chief complaint.

All were examined clinically and underwent the decided set of investigations to reach a diagnosis.

In our study, only 2 patients required excisional biopsy of a cervical lymph node for a confirmed diagnosis.

Table 1. The etiological distribution.

		Pediatric patients	Adult patients
Acute	Tonsillopharyngitis	6	4
	Dental	1	1
	Viral	1	2
	Malignancies	0	3
	Oral ulcers	0	1
	Infectious mononucleosis	0	1
Total		8	12
Subacute	URTI	1	2

		Pediatric patients	Adult patients
Total	Malignancies	0	3
	Dental	1	1
Total		2	6
Chronic	Tonsillitis/ pharyngitis	5	3
	Tuberculosis	3	4
	Malignancies	0	6
	Lymphoma	0	1
Total		8	14
Grand Total		18	32

Out of 50 cases studied in this series, 18 were pediatric (6-12 years of age) and 32 were adults (above 12 years of age).

Among children, 10 were males and 8 were females whereas in adults, male:female ratio was 19:13. Overall, 58% of the patients were males and 42% were females, showing a definite male preponderance.

Acute lymphadenopathy accounted for 40% (20 out of 50) cases, subacute 16% (8 out of 50) cases and chronic for 44% (22 out of 50) cases. In both acute and chronic cases, the

commonest cause proved to be tonsillopharyngitis. In subacute cases, metastasis from head and neck malignancies, dental infections and tonsillopharyngitis were the etiological factors in 3 cases each.

In pediatric age group, majority of cases were of acute or chronic tonsillopharyngitis (12 out of 18) whereas in adults, the commonest cause found was metastatic disease from some head and neck malignancies (12 out of 32).

The causes found are shown in the following table:

Table 2. Etiological factors for cervical lymphadenopathy as per our study.

Sr. No.	Etiology	Percentage of patients
1	Tonsillitis/ pharyngitis/ Upper respiratory Tract Infection	42%
2	Metastatic disease from Head and neck malignancies	18%
3	Tuberculosis	14%
4	Dental infections and caries	8%
5	Viral infections	6%
6	Oral ulcers	2%
7	Infectious mononucleosis	2%
8	Lymphoma	2%

4. Discussion

In our study, the commonest cause was reactive lymphadenitis due to tonsillopharyngitis (42%) followed by cervical metastasis of head and neck malignancies (18%) and tuberculosis (14%). The age group studied was 6 to 70 years.

A recent study by Mohammed Ali Motiwala, Deepak Dalmia and Sanjaya Kumar Behara showed male preponderance (70%) with Tuberculosis (55%) as the most common cause of cervical lymphadenopathy followed by reactive lymphadenitis (23%). They concluded that tuberculosis, reactive lymphadenitis and malignancy are the most important cause of cervical lymphadenopathy and Fine Needle Aspiration Cytology is extremely sensitive and highly specific investigation for early diagnosis. [12]

In a study by Gaurav Batni et al, more than half (51%) cases of cervical lymphadenopathy were reactive non-specific lymphadenitis, 28% cases were due to tuberculosis, and 17% were due to metastatic carcinoma. 34 male patients and 30 female patients participated in the study, the range of age was 2 to 80 years [12] whereas of 29 male patients and 21 female patients were considered for our study, the age range was 6 to 70 years.

Another study done by Shakya et al [13] showed 50.4 % cases as non-specific and 22.4 % cases to be tuberculosis. In their study 51.4 % cases were male, 48.6 % cases were females and mean age was 25.7 years.

In their study of 112 patients attending ENT OPD, Mili MK et al found tuberculosis as the most frequent cause (58%), metastatic disease in 31%, lymphoma in 7 % and reactive in only 5% of the cases. Like in our study, male preponderance was noted. [2]

Jaffar A. Al-Tawfiqa and Wasim Raslanb did an extensive study over a period of 11 years of 452 patients suffering from cervical lymphadenopathy to find reactive disease (52.2%) as the most common histopathological diagnosis followed by granulomatous disease (15.5%). They detected carcinoma in 14.6% of the patients and Hodgkin's lymphoma in 8.8% and non-Hodgkin's disease in 8.8%. [14]

Thus most of the studies found reactive disease and tuberculosis as leading causes of cervical lymphadenopathy, a finding similar to our observations.

Fine Needle Aspiration Cytology proved to be the most important and consistent tool for definitive diagnosis in all the studies including the present one. [15]

5. Conclusions

Cervical lymphadenopathy is a common condition seen in general as well specialized practice. The common causes are infections of pharynx in acute cases and metastatic disease from head and neck malignancies in chronic cases. Also, the etiology changes with age with tonsillopharyngitis being the commonest cause in pediatric age group and metastatic disease in adult age group. The array of etiological factors is

vast and the actual diagnosis can be confirmed only after investigations like Fine Needle Aspiration Cytology. Excisional biopsy is occasionally required.

Given the myriad of possible differential diagnoses and possibility of malignant diseases, there must be a structured algorithm in the diagnostic steps and therapeutic strategies so that unnecessary delays in further diagnosis and overhasty and too invasive diagnosis and therapy are avoided.

Clinical Significance

Cervical lymphadenopathy, a common occurrence in Otorhinolaryngology can be due to a variety of causes. Age group as well as duration of the symptoms needs a special consideration while streamlining the diagnosis. Clinical diagnosis often is inadequate and inaccurate, although age of the patient, duration of symptoms and findings of clinical examination of the patient provide valuable clues towards probable diagnosis. A confirmed diagnosis can be made only after Fine Needle Aspiration Cytology and occasionally an excisional biopsy. Accurate diagnosis is important, as treatment plan will completely depend on it.

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