



Original Research Paper

Clinico-pathological profile of Sub acute and Chronic Cervical Lymphadenopathy: A Prospective study

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Abstract

Introduction: Cervical lymphadenopathy (CL) is one of the most common causes of consultations in ENT Out Patient Department. The differential diagnosis of CL is broad and the most common cause of CL, particularly in pediatric age group, is due to benign and self-limiting diseases such as viral infections. The other common causes of CL in children include pyogenic or tubercular lymphadenitis. In adults and elderly patients it may be due to more sinister pathologies such as lymphomas, leukemia and nodal metastasis. Less common causes of CL include autoimmune disorders (SLE and Sjogrens), plasma cell granuloma and histiocytosis.

Materials and Methods: Present study is a prospective cohort study in which 80 patients, above 12 years of age, attending ENT OPD for cervical lymphadenopathy were included on the basis of a pre-defined inclusion and exclusion criteria. A detailed history was taken and clinical examination was done in all the cases. Imaging studies were done whenever needed. FNAC followed by histopathological examination was done in all the cases. Patients in whom lymphadenopathy subsided after 10 days of antibiotics therapy or 14 days of conservative management were excluded from the study. The data was analysed using SSPE 16 software. For statistical purposes P value less than 0.05 was taken as significant.

Results: After excluding the patients in whom cervical lymphadenopathy subsided within 2 weeks the most common cause was found to be tubercular lymphadenitis (52.50 %). The other causes of cervical lymphadenopathy included chronic non-specific lymphadenitis (27.50%) and reactive lymphadenitis (12.50%). Uncommon causes of cervical lymphadenopathy included metastatic spread from primary malignancies and lymphoma (7.50 %). FNAC was found to be fairly reliable in diagnosis of etiology of lymphadenopathy.

Conclusion: Tubercular, non-specific and reactive lymphadenitis were found to be the most common benign causes of cervical lymphadenopathy. In elderly metastatic spread from primary malignant lesions was common cause. FNAC is an excellent diagnostic tool for establishing the etiological diagnosis of cervical lymphadenopathy.

Keywords: Cervical Lymphadenopathy, Etiology, Fine needle Aspiration Cytology, Metastatic Nodes.

Introduction

Lymphadenopathy can be defined as any abnormality in the size, consistency and number of lymph nodes. On the basis of duration of lymphadenopathy it can be divided into acute (2 weeks), subacute (2-4 weeks) and chronic lymphadenopathy (more than 6 weeks)¹. Cervical lymphadenopathy is one of the common causes for ENT consultations and is usually caused by etiologies such as infections, inflammatory process and nodal metastasis of primary malignancies particularly in elderly population². Some other uncommon causes of lymphadenopathy include lymphomas, leukemia and autoimmune disorders such as Sjogren's syndrome. It is important to understand that many of the patients with cervical lymphadenopathy, particular in pediatric age group, are normal and may not need any treatment³. The cervical lymphadenopathy may consist of a single enlarged lymph node or multiple lymph nodes may be enlarged depending upon the etiology of lymphadenopathy. Though the list of differential diagnoses of patients presenting with cervical lymphadenopathy is long the common causes include infections (pyogenic and tubercular) and nodal metastasis particularly in elderly patients⁴. While it is true that in majority of the cases cervical lymphadenopathy is secondary to benign pathologies such as infections and inflammatory process it must not be forgotten that an enlarged cervical lymph node may be the only sign of a serious underlying condition such as non-Hodgkin's lymphoma or nodal metastasis⁵. It is for this reason that every patient presenting with cervical lymphadenopathy and not responding to conservative measures such as oral antibiotics must be investigated thoroughly for presence of more sinister pathologies including malignant neoplastic diseases⁶.

A detailed history regarding onset, progression and associated symptoms along with a thorough clinical examination is essential for accurate diagnosis. In majority of the cases acute cervical lymphadenopathy is usually secondary to benign

pathologies and doesn't require much workup particularly in young individuals⁷. Most of the pediatric patients presenting with acute cervical lymphadenopathy can be managed conservatively and asked to come for follow up. But in cases, particularly in adults and elderly patients, with chronic lymphadenopathy who has not responded to antibiotics and other conservative measures investigations such as imaging (local ultrasound, computerized tomography and magnetic resonance imaging), Fine needle aspiration cytology and excision biopsy may be required⁸. In developing countries including India tuberculosis is one of the common cause of chronic lymphadenopathy which fails to respond to usual antibiotics hence tubercular lymphadenopathy needs to be ruled out by appropriate investigations (Mantoux, ESR and histopathology)⁹. Etiological diagnosis of cervical lymphadenopathy is essential for successful management¹⁰. Delay in exact diagnosis and proper treatment may result into progression of the disease leading to complications¹¹. The management of cervical lymphadenopathy obviously depends upon etiology and may consist of antibiotics in cases of infective lymphadenitis, antitubercular drugs in cases with tubercular lymphadenopathy, steroids and immunosuppressant in cases of autoimmune disorders and surgery and chemotherapy or radiotherapy in cases of metastatic lymphnodes^{12,13}.

We conducted this study to analyze clinic-pathological profile of the patients attending ENT outpatient department for the cervical lymphadenopathy and in whom lymphadenopathy didn't subside even after 10 days of antibiotics therapy or 14 days of conservative management.

Materials and Methods

This was a prospective observational study conducted in the department of otorhinolaryngology in a tertiary care medical college situated in an urban area. All the patients attending ENT outpatient department with complaints of enlarged or swollen lymph nodes in

the neck were included in this study on the basis of a predefined inclusion and exclusion criteria. A through history with regards to onset, progression and associated symptoms was noted. Past history of tuberculosis or history of Koch's contact was also specifically asked. History of any associated symptoms which may point towards a particular etiology was also noted down.

Local examination was done and site, size, number, presence of matting, and involvement of other groups of adjacent lymph nodes such as axillary or inguinal lymph nodes was noted. Complete blood count, erythrocyte sedimentation rate and mantoux test was done in all the cases. Imaging of lymph nodes by ultrasonography, CT neck or magnetic resonance imaging was done in selected cases. In case of clinical suspicion of malignancies primary area of drainage was examined and appropriate imaging was done to find out the primary malignant growth. Fine needle aspiration cytology was done in all the cases. In cases where fine needle aspiration cytology was found to be inconclusive excision biopsy was done. FNAC or excision biopsy was followed by histopathological examination. The treatment was done on the basis of diagnosis. For tubercular lymphadenopathy antitubercular treatment was advised and such patients were asked to come for regular follow up. In cases of malignant diseases patients were referred to the concerned department for further management including chemo or radiotherapy.

Microsoft word was used for manuscript preparation. Statistical analysis was done using SSPE 16 software. For all statistical purposes p value less than 0.05 was taken as significant.

Inclusion criteria

- 1) All the patients attending ENT OPD for cervical lymphadenopathy and who had not responded to conservative treatment for 14 days.
- 2) Those who gave informed consent to be part of the study.

Exclusion Criteria

- 1) Patients who refused consent.

- 2) Patients less than 12 years of age
- 3) Patients or parents refused consent.

Results

This was a prospective cohort study in which 80 patients with cervical lymphadenopathy who had not responded to conservative treatment for 14 days were included on the basis of a predefined inclusion and exclusion criteria. Out of 80 patients there were 58 males and 22 females with a M:F ratio of 1:0.37.

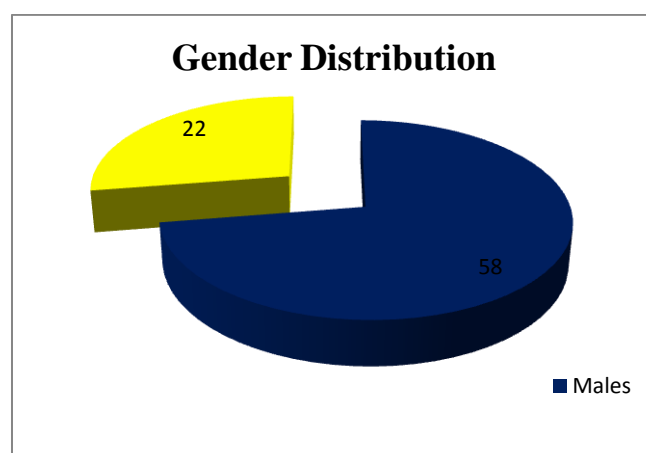


Figure 1: Gender Distribution of the studied cases

The analysis of the age groups of the patients showed that the patients most commonly belonged to age group of 12-30 years followed by 31-40 years and more than 60 years. There were 3 patients who were elder than 70 years of age.

Table 1: Age groups of the studied cases

Age Group	No of Patients	Percentage
12-30	48	60.00%
31-40	12	15.00%
41-50	3	3.75%
51-60	5	6.25%
61 -70	9	11.25%
71 and above	3	3.75%
Total	80	100%

The Gender-wise distribution of the studied cases showed that the mean age of males in the studied cases was 29.87 +/- 19.31 whereas the mean age of the studied cases in females was 28.92 +/- 17.82. There was no statistically significant difference of age in males and females and age in both the groups was found to be comparable (P=0.841).

Table 2: Gender wise distribution of age groups in the studied cases

Age Groups	Males		Females	
	No Of Cases	Percentage	No Of Cases	Percentage
12-30	35	43.75%	13	16.25%
31-40	8	10.00%	4	5.00%
41-50	1	1.25%	2	2.50%
51-60	4	5.00%	1	1.25%
61 -70	7	8.75%	2	2.50%
71 and above	3	3.75%	0	0.00%
Total	58	72.50%	22	27.50%

The analysis of etiological diagnosis showed that the most common cause of cervical lymphadenopathy not responding to conservative management for 2 weeks was tubercular lymphadenitis (52.50%) followed by chronic non-specific lymphadenitis (27.50%), reactive

lymphadenitis (12.50%). Malignant diseases such as lymphoma or metastatic spread from primary lymphnodes were found in 6 (7.50%) patients. All cases with malignant or metastatic lymphadenopathy were seen in patients above 60 years of age.

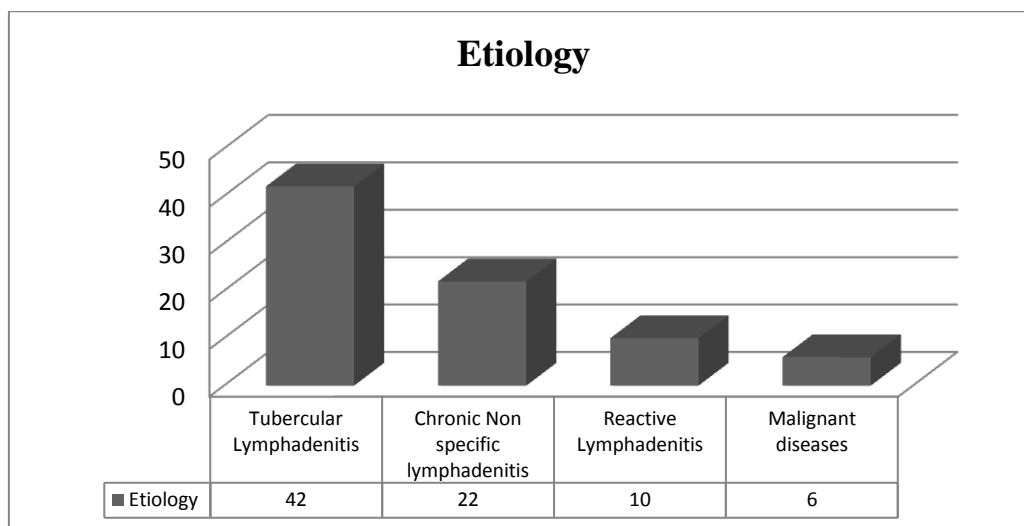


Figure 2: Etiology of the cervical lymphadenopathy in studied cases

The age wise distribution of the studied cases showed that the most common pathology in the age group of 12-30 years was tubercular lymphadenopathy (29/48) followed by non-specific lymphadenitis (15/48) and reactive lymphadenitis (4/48). In the age group of 31-40

years tubercular lymphadenitis, nonspecific lymphadenitis and reactive lymphadenitis was present in 4 patients each. Malignant pathologies such as lymphoma and nodal metastasis were seen exclusively in patients of more than 60 years of age.

Table 3: Age distribution of the various etiologies of cervical lymphadenopathy

Age Group	Tubercular lymphadenitis	Non-specific lymphadenitis	Reactive lymphadenitis	Malignant Disease	Total
12-30	29	15	4	0	48
31-40	4	4	4	0	12
41-50	1	2	0	0	3
51-60	3	1	1	0	5
61 -70	4	0	1	4	9
71 and above	1	0	0	2	3
Total	42	22	10	6	80

The analysis of malignant conditions causing cervical lymphadenopathy showed that out of 6 patients with malignancies 3 patients was found to be having squamous cell carcinoma of buccal

mucosal origin. Papillary carcinoma of thyroid, carcinoma larynx and metastasis of unknown primary was found in 1 patient each.

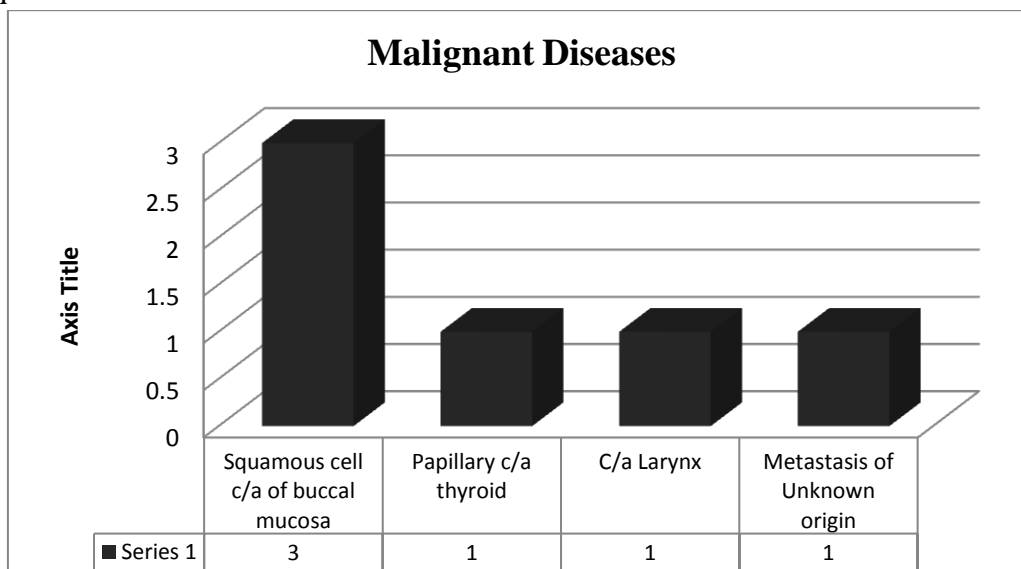


Figure 3: Malignant cervical lymphadenopathy in studied cases

Fine needle aspiration cytology was found to be highly sensitive and specific for the confirmation of diagnosis in cases of cervical lymphadenopathy. Out of 80 cases FNAC could confirm the diagnoses in 73 cases and in all the cases diagnosed on the basis of FNAC the diagnosis was correct bringing the sensitivity and specificity of FNAC to be 91.25% and 100%. 7

cases where the diagnosis could not be confirmed on the basis of FNAC and further workup such as excision biopsy or imaging was required included 3 cases of malignant etiologies, 2 cases of non-specific lymphadenitis, 1 case of tuberculous lymphadenopathy and 1 case of reactive lymphadenopathy.

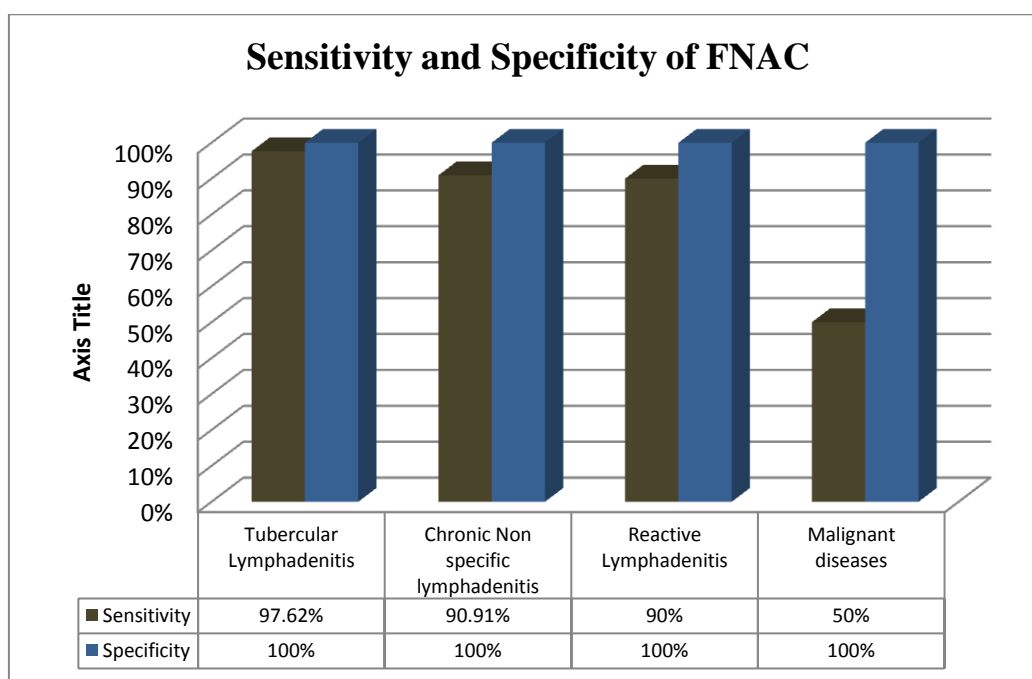


Figure 4: Sensitivity and specificity of FNAC in studied cases

All the patients were treated in accordance with the standard guidelines for management of the particular disease. Antitubercular drugs were started in all patients with tuberculous lymphadenitis. Nonspecific and reactive lymphadenitis was treated by antibiotics and analgesics if needed. Patients with malignant diseases were treated by surgery, chemotherapy or radiotherapy or a combination of surgery and chemotherapy and radiotherapy on the basis of histopathology and stage of the disease determined on the basis of imaging.

Discussion

Cervical lymphadenopathy is a common occurrence and a sizeable portion of patients attending ENT outpatient department consist of patients with cervical lymphadenopathy. In majority of the cases this is secondary to common pathologies such as scalp infection, acute pyogenic lymphadenitis, viral fever and respiratory tract infections. In some cases cervical lymphadenopathy may be the presenting complaint of more sinister pathologies such as primary malignant disease or metastatic spread from primary malignant tumors of pharynx, larynx, buccal mucosa and thyroid. Distant metastases from other organs are also known to cause cervical lymphadenopathy. In our study majority of the patients presenting with cervical lymphadenopathy had non malignant diseases (92.50%) and 6 patients were found to have either primary malignancy or metastasis from primary malignant tumors from buccal mucosa, thyroid and larynx. Overall the most common cause of cervical lymphadenopathy not responding to conservative treatment was found to be tuberculous lymphadenopathy which was seen in 48 (60%) patients.

Batni G et al conducted a study 64 patients with enlarged cervical lymph nodes. FNAC was done to make the diagnosis¹⁴. Out of 64 patients (51.5 %) was reactive non-specific, 28 % tubercular, 3.1 % lymphoma and 17 % were malignant. The authors found that the FNAC was

one of the most dependable diagnostic tools in case of cervical lymphadenopathy for early diagnosis and detection for the better management. Similar conclusions were reported by the authors such as Mili MK et al¹⁵ and Shakya G et al¹⁶.

Another study conducted by Narender NR et al showed that out of 46 cases studied for cervical lymphadenopathy tuberculosis lymphadenopathy (n=25,54.3%) was the most common etiology followed by nonspecific chronic lymphadenopathy (n=16,34.7%) followed by some relatively rare cases and unusual presentation Schwannoma, pleomorphic adenoma, Kikuchi disease, non-Hodgkin's lymphoma and secondaries from carcinoma tongue. The authors concluded that tuberculous lymphadenopathy and nonspecific chronic lymphadenopathy were the common causes of lymphadenopathy in the studied cases¹⁷. In our study fine needle aspiration cytology was found to be highly sensitive and specific for the confirmation of diagnosis. Similarly in a study conducted by Shas et al the authors performed 140 needle aspirations¹⁸. Adequate specimens were obtained in 97 percent of the patients and the diagnostic accuracy was found to be 96 percent. Overall, 45 percent of the patients had the diagnosis of a malignant tumor established whereas others had benign tumors. Metastatic squamous cell carcinoma was diagnosed accurately in all of the patients. Other malignant tumors reported accurately included lymphoma, adenocarcinoma, and metastatic thyroid carcinoma. Among the benign conditions, accurate diagnoses could be established in patients with tuberculosis, chronic lymphadenitis, and hyperplastic lymph nodes. The findings of fine-needle aspiration are helpful in directing subsequent workup. The authors concluded that fine-needle aspiration is a safe, accurate, and valuable tool for the evaluation of cervical adenopathy. Similar findings were reported by the authors such as Chau I et al¹⁹.

Qadri SK et al conducted a retrospective study of to analyze the clinical profile and causes of

cervical lymphadenopathy in different age-groups and the diagnostic utility of FNAC in the studied cases. In this study a total of 790 patients were selected. Upper deep cervical lymph nodes were involved most frequently (38.9%); reactive lymphadenitis (39.4%) followed by metastasis (38.2%) were the commonest causes, in general. In addition, reactive lymphadenitis was the most common cause of lymphadenopathy in all age groups less than 40 years and at all topographic sites of cervical lymph node. However, in more than 40 years age-groups and at supraclavicular region, metastasis was the commonest cause of enlargement. Squamous cell carcinoma (36.4%) followed by adenocarcinoma, (25.8%) were the most common metastatic tumors. The authors concluded that cervical lymphadenopathy can be effectively evaluated by FNAC without the need for surgical biopsy²⁰.

Conclusion

The common causes of sub-acute and chronic cervical lymphadenopathy were found to be tubercular lymphadenitis followed by chronic nonspecific lymphadenitis. Possibility of malignant disease must be kept in mind in patients presenting with lymphadenopathy not responding to conservative measures particularly in elderly patients. FNAC is found to be having high sensitivity and specificity in specific diagnosis of cervical lymphadenopathy and must be done for confirmation of diagnosis.

Conflict of interest: None

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