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RESEARCH ARTICLE

HISTOPATHOLOGICAL STUDY OF NON NEOPLASTIC LESIONS OF CERVICAL LYMPH NODES.

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Abstract

Lymph node diseases are showing rising trend worldwide. A number of studies have been done in order to know the magnitude of problem. Cervical lymphadenopathy is one of the commonest clinical presentations. The involvement of lymph node by non neoplastic conditions is much more common than the neoplastic processes. The knowledge of the pattern of lymphadenopathy in a given geographical region is essential for making a confident diagnosis or suspecting a disease. Though fine needle aspiration cytology is commonly used to establish the etiological diagnosis, excision biopsy and histopathology of the lymph node remains the "gold standard" for diagnosis of lymphadenopathy. The present study focuses on most common non-neoplastic lesions of cervical lymph nodes and their histopathological diagnosis.

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Introduction:-

Lymphadenopathy is defined as an abnormality in the size or character of lymph node caused by a vast array of disease processes, whose broad categories are Malignancies, Infections, Autoimmune disorders, Miscellaneous and unusual conditions, and Iatrogenic causes¹. Head and neck lymphadenopathy represents 55% of all lymphadenopathies. It is usually of benign etiology, most commonly viral infections, especially in children².

Cervical lymphadenopathy is one of the commonest clinical presentations. Localized cervical lymphadenopathy is lymph node enlargement that is restricted to cervical area³. The involvement of lymph node by non-neoplastic conditions is much more common than the neoplastic processes¹. Though fine needle aspiration cytology is commonly used to establish the etiological diagnosis, excision biopsy and histopathology of the lymph node remains the "gold standard" for diagnosis of lymphadenopathy⁴.

Non malignant causes of lymphadenopathy are numerous and diverse ranging from infections such as tuberculosis, brucellosis, mononucleosis syndromes and cat scratch disease; extending to connective tissue disease such as systemic lupus erythematosus, rheumatoid arthritis; or it may be iatrogenic as a result of certain drug intake such as phenytoin, carbamazepine, captopril, allopurinol and atenolol⁵.

In patients presenting with peripheral lymphadenopathy, excision biopsy of the most accessible lymph node provides material to establish an early diagnosis, and is important in the management of these patients⁶.

In a large number of patients, the causes of lymphadenopathy remain undiagnosed⁷.

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As there is a paucity of information on the spectrum of diseases affecting lymph nodes from this region. Hence this study was undertaken with the aim of evaluating the spectrum of histopathological diagnosis of non neoplastic lesions in cervical lymph node biopsies.

Materials and Methods:-

This was a prospective study undertaken in the Department of Pathology, D. Y. Patil Medical College, Hospital and Research centre, Kolhapur, from May 2014 to April 2016. From all the cervical lymph node biopsies received at the department of pathology, only Non neoplastic lesions like tuberculosis, acute and chronic nonspecific lymphadenitis, chronic specific lymphadenitis such as bacterial, viral and fungal, reactive lymphadenitis and other specific lesions such as Kikuchi-Fujimoto disease, Castleman disease, Kimura disease, Rosai-Dorfman Disease and Cat scratch disease etc. were included in this study. Neoplastic lesions of cervical lymph nodes both primary and secondary were excluded from this study. Specimens were fixed in 10 % formalin and were processed through series of ascending grades of alcohol for dehydration. Clearing was done with the help of acetone. Tissue embedding was done in molten paraffin wax. Wax blocks were made using Leuckhart's mould. Thin sections of three to four microns were cut, slides were prepared and stained by Haematoxylin and Eosin stain. Special stains such as ZN stain and PAS stain were used wherever required.

Results:-

In present study of 100 cases, 57 cases (57%) were females and 43 cases (43%) were males with male to female ratio of 1: 1.32 suggesting female preponderance (Table 1). Majority of the cases had age between 21-30 years (28 cases, 28%) followed by 31 to 40 years (24 cases, 24%), 11 to 20 years (22 cases, 22%), 41 to 50 years (10 cases, 10%), 01 to 10 years (9 cases, 9%), 51 to 60 years (4 cases, 4%), 61-70 years (2 cases, 2%) and the least being more than 70 years (1 case, 1%)(Table 2). Majority were diagnosed as Tuberculous lymphadenitis (46 cases, 46%), followed by Chronic nonspecific lymphadenitis (36 cases, 36%), Kikuchi lymphadenopathy (8 cases, 8%), Kimura lymphadenopathy (2 cases, 2%), Toxoplasma lymphadenitis (2 cases, 2%), Sinus histiocytosis with massive lymphadenopathy (2 cases, 2%), Human Immunodeficiency Virus Lymphadenitis (1 case, 1%), Castleman lymphadenopathy (1 case, 1%), Cryptococcus lymphadenitis (1 case, 1%) and Dermatopathic lymphadenopathy (1 case, 1%)(Table 3).

Table 1:- Sex wise distribution of Non neoplastic lesions of cervical lymph nodes.

Sex	Distribution(n=100)	
	Number	Percentage
Male	43	43
Female	57	57
Total	100	100

n = Number of cases

Table 2:- Age wise distribution of Non neoplastic lesions cervical lymph nodes.

Age	Non-neoplastic lesions	Percentage
<10	9	9
11-20	22	22
21-30	28	28
31-40	24	24
41-50	10	10
51-60	4	4
61-70	2	2
>71	1	1
otal	100	100

Table 3:- Incidence of Non neoplastic lesions of cervical lymph nodes.

Name of lesion	No. of cases	Percentage
Tuberculous lymphadenitis	46	46
Chronic nonspecific lymphadenitis	36	36
Kikuchi Lymphadenopathy	8	8
Kimura Lymphadenopathy	2	2
Toxoplasma lymphadenitis	2	2
Sinus Histiocytosis with massive lymphadenopathy	2	2
Human Immunodeficiency Virus Lymphadenitis	1	1
Castleman Lymphadenopathy	1	1
Cryptococcus Lymphadenitis	1	1
Dermatopathic Lymphadenopathy	1	1
Total	100	100

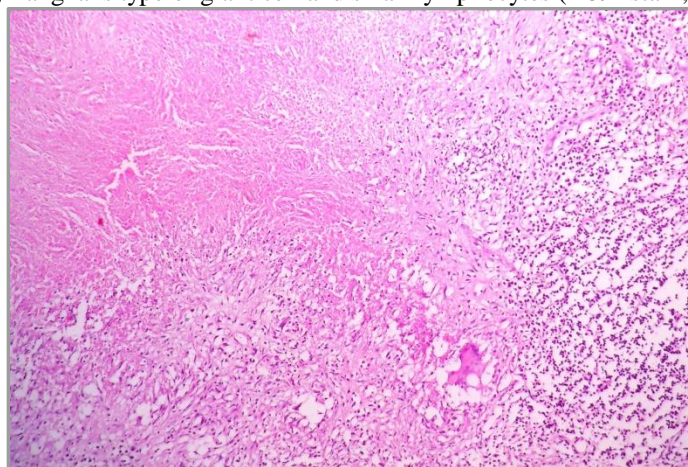
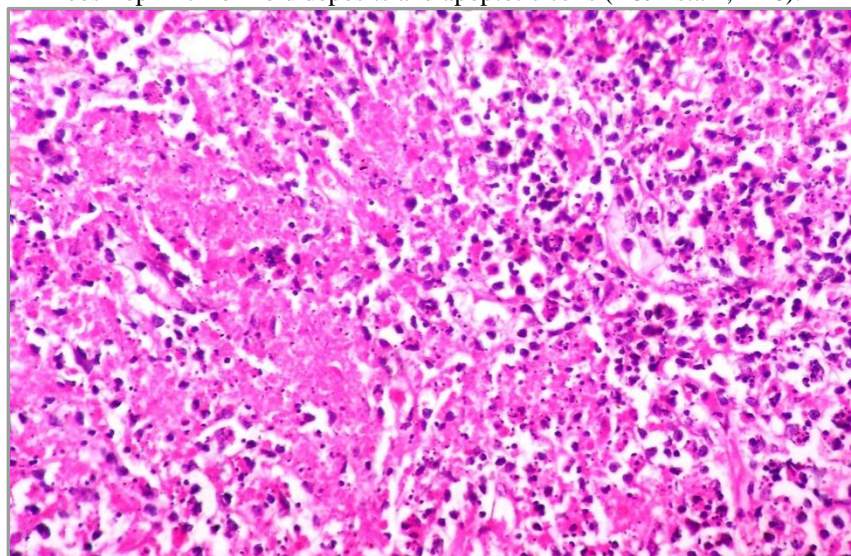
Figure 1:- Tuberculous lymphadenitis: Section shows large area of caseous necrosis surrounded by epithelioid cells, Langhans type of giant cell and small lymphocytes (H&E stain; X10).**Figure 2:- Kikuchi lymphadenopathy:** Section shows irregularly shaped area of necrosis consisting of bright eosinophilic fibrinoid deposits and apoptotic cells (H&E stain; X40).

Figure 3:- Castleman lymphadenopathy: Section shows small germinal centre with concentric rings of small lymphocytes giving onion skin pattern (H&E stain; X40).

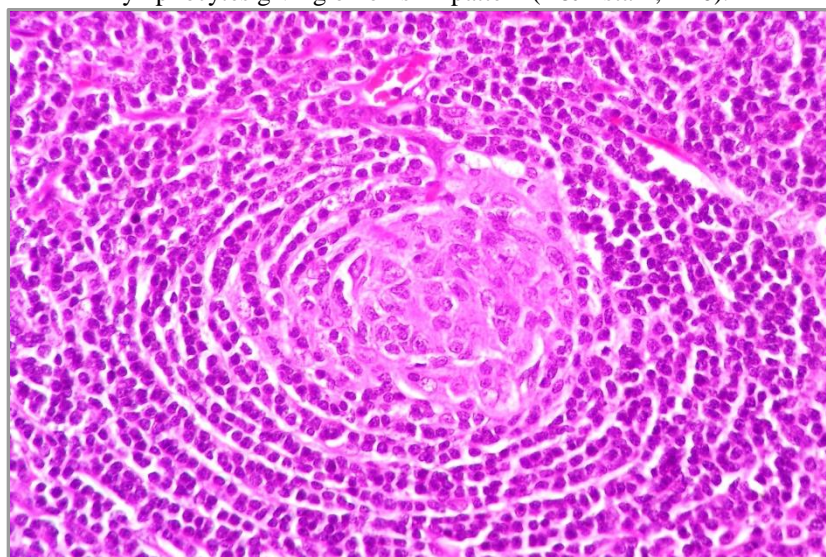
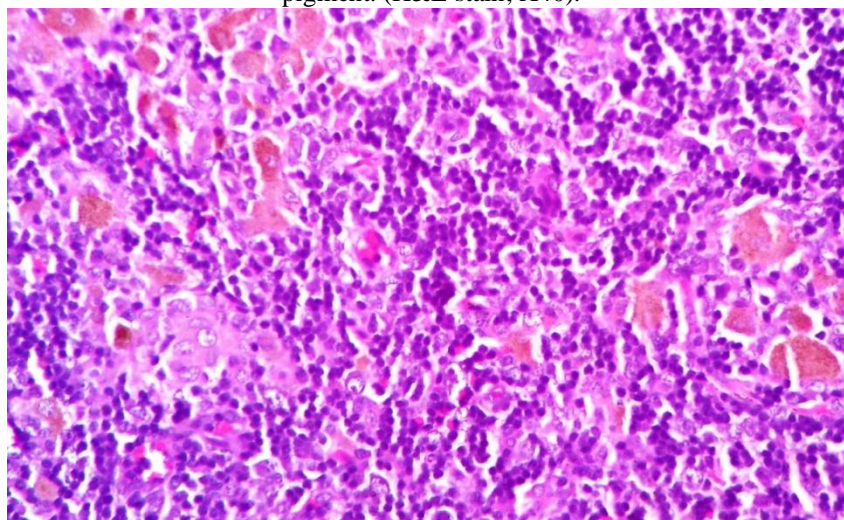


Figure 4:- Dermatopathic Lymphadenopathy: Section shows histiocytes containing phagocytosed melanin pigment. (H&E stain; X40).



Discussion:-

Lymph node enlargement may occur because of proliferation of cells of the lymphocyte and monocyte-macrophage system usually in response to antigenic stimulus or infiltration by inflammatory cells in infections involving lymph nodes (lymphadenitis). Analysis of lymphadenopathy in primary care practice has shown that more than two-third of patients have non-specific causes or upper respiratory illnesses (viral or bacterial), and less than 1% have malignancy¹.

In Present study, out of 100 cases 43 were males (43 %) and 57 were females (57 %). Female predominance was observed with male to female ratio of 1:1.3, (Table 1; Graph 1). Other studies such as Rehman A et al⁸ and Vemulapalli N K et al⁹ also recorded female preponderance except Paliwal U K et al¹⁰ which shows slight male preponderance with male to female ratio of 1.04:1.

In the present study of 100 cases, majority (28 cases, 28%) of the cases belonged to 21 to 30 years of age group. Rehman A et al⁸, also found similar result, with most of the patients between 2nd and 3rd decade. While Paliwal U K et al¹⁰ and Vemulapalli N K et al⁹ reported 1st and 2nd decade as the commonest age group in their studies.

In present study, Tuberculous lymphadenitis was the predominant lesion, (46 cases, 46%). This observation is nearly comparable with Rehman A et al⁸ and Vemulapalli N K et al⁹ who reported highest incidence of tuberculous lymphadenitis in their study as 50.61 % and 68% respectively. While Moor J W et al¹¹ reported incidence of chronic nonspecific lymphadenopathy as highest being 50.83%.

In present study, incidence of chronic nonspecific lymphadenitis was 36 cases (36 %). We also reported 8 cases (8 %) of Kikuchi lymphadenopathy. This finding is nearly comparable with Moor J W et al¹¹ and Rehman A et al⁸ who reported 4.16% and 3.70% respectively.

In present study, incidence of toxoplasma lymphadenitis was 2 cases (2%), which nearly comparable with study done by Moor J W et al¹¹ being 1.66%. Other studies did not report any cases of toxoplasma lymphadenitis.

In present study we also reported Kimura lymphadenopathy and Sinus histiocytosis with massive lymphadenopathy amounting 2% each, Human Immunodeficiency Virus Lymphadenitis, Castleman lymphadenopathy, Cryptococcus Lymphadenitis and Dermatopathic lymphadenopathy amounting 1% each. These lesions were not seen in other studies. Other lesions found in their studies, which were not reported in present study, were Sarcoidosis, SLE, foreign body reaction, abscess, Cat-Scratch Lymphadenitis.

Conclusion:-

Cervical lymphadenopathy is one of the commonest clinical presentations of patients, attending the outpatient and inpatient departments. Etiology varies various infectious agents such as viruses and microbes to inflammatory conditions and malignant conditions. Though FNAC is the first choice of cervical lymphadenopathy biopsy remains gold standard for the complete diagnosis because FNAC at some times may be inconclusive or sometimes antibiotic therapy does not resolve the patient condition.

Of the 100 non-neoplastic cases studied majority were diagnosed as Tuberculous lymphadenitis even though geographical distribution and socio economic status are better in this area. This was followed by chronic nonspecific lymphadenitis, Kikuchi lymphadenopathy which was more common in females. Other lesions were Kimura lymphadenopathy, Sinus histiocytosis with massive lymphadenopathy, Toxoplasma lymphadenitis, HIV lymphadenitis, Castleman lymphadenopathy, Cryptococcus lymphadenitis and Dermatopathic lymphadenopathy.

To conclude, we came across various Non neoplastic cervical lymph node lesions in biopsy specimens and definitely biopsy is useful in management of various Non neoplastic diseases of cervical lymph nodes.

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