HISTOPATHOLOGICAL PATTERN OF LYMPH NODE LESIONS IN AGENCY HEAD QUARTER HOSPITAL MIRANSHAH NORTH WAZIRISTAN AGENCY KPK, PAKISTAN.

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ABSTRACT

Objective: To know the histopathological pattern of lymph node lesions in Agency Head Quarter Hospital Miranshah, North Waziristan Agency, KPK Pakistan.

Materials and methods: This reterospective descriptive study of lymph node biopsy was conducted in Agency Head Quarter Hospital Miranshah,NWA, KPK in collaboration with a private laboratory. The duration of study was four years (June, 2005 To May,2009).

Results: A total of seventy two lymph nodes biopsies were received in laboratory with male to female ratio of 1.25:1, age range was 07 to 65 years. The result recorded are such that non neoplastic lesions were 80.56% and neoplastic lesions were 19.44 %. Tuberculo¬sis was the commonest lesion noted and accounted for 44.4%, followed by reactive lymphoid hyperplasia (36.11%),non Hodgkin lymphoma 11.11%, Hodgkin lymphoma 4.16% and metastatic carcinoma was 4.16% respectively.

Conclusion: Lymph node biopsy have a key role in diagnosis of different causes of lymphadenopathies especially separating non neoplastic lesion from neoplastic lesions and further categorization of diseases in both cases.

Keywords: Lymphadenpathy, tuberculous lymphadenitis, lymphomas.

INTRODUCTION

Lymph nodes are bean shaped organ and ranges in size from a few millimeters to about 1–2 cm. Each lymph node is surrounded by a fibrous capsule which extends to the core to form trabeculae. The substance of the lymph node is divided into the outer cortex and the inner medulla. The cortex is continuous around the medulla except at the hilum, where the medulla comes in direct contact with the hilum. They are found deep in viscinity of all solid organs such as stomach, intestine, lungs etc and superficially head and neck, axilla, groin etc[1,2,3]. The lymph nodes function as filters of lymph that enters from several afferent lymph vessels. The reticular fibers of the lymph node act as a net to catch any debris or cells that are present in the lymph. Macrophages and lymphocytes attack and kill any microbes caught in the reticular fibers. Lymph nodes are part of immune system of the body. They increase in size in response to infections, tumor or inflammation etc. This increase in size is primarily due to an elevated rate of trafficking of lymphocytes into the node from the blood, exceeding the rate of outflow from the node[4,5]. They may also be enlarged secondarily as a result of the activation and proliferation of antigen-specific T and B cells (clonal expansion). In some cases, where there is no infection they may still feel enlarged due to a previous infection. Enlarged lymph nodes in response to minor infections or insect bites typically do not require medical attention and resolve spontaneously, where as persistent enlargement may needs further pathological evaluation including biopsy to look for type of infection, lymphoproliferative disorder and metastesis[6,7,17].

Unexplained lymphadenopathies are not common (less than 1% of the general population). 75% of all lymphadenopathies are localised and often caused by a specific pathology in the area of drainage. 25% of lymphadenopathies are generalised and are often a sign of a significant underlying disease. A diagnosis of lymphoma, malignancy, HIV infection or tuberculosis should not be missed. Lymphadenopathy is a common clinical problem, and biopsies are usually undertaken to determine the cause of nodal enlargement[8,9].

Considering the various diseases that may cause lymphadenopathy, it is essential to define the pattern of disorders presenting primarily as lymph node enlargement in a particular environment.[9-11] Pattern of lymph node enlargement is different in different age groups. Metastatic deposit is common in adults whereas it is rare in children.[12] Reactive hyperplasia to minor stimuli has been reported as a significant cause of lymphade-

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nopathy in children. There is a wide variation in the spectrum of the Lymph node diseases and the epidemiology in various countries or ethnic grpou[13,14,15]. The aim of this study is to find out etiological factor involved in lymphadenopathy in Agency Head Quarter Hospital Miranshah NWA.KPK, Pakistan.

MATERIAL AND METHODS

Study design: This retrospective descriptive study was conducted in Agency Head Quarter Hospital Miranshah North Waziristan Agency, KPK, Pakistan.

Duration: The duration of this study was four year (June,2005 To May,2009).

Specimen Selection: All lymph node specimen from different locations of the body were collected. A total of 72 cases were obtained. **Inclusion criteria was** all excised lymph nodes of any size, age, sex and location which were subjected to histopathology diagnosis were included. **Exclusion Criteria was** only autolysed lymph node specimen which were not included in this study. All the specimens were received in 10% buffered formalin, labeled, representative sections taken and processed in ethanol, xyelene and paraffin wax, block prepared, freezed microtome sections 5 micron thick taken, slides prepared, stained with Hematoxylin and Eosin, mounted with DPX, labeled and reported by Histopathologist. Statistical package SPSS version 16 were applied for percentages, mean and standered deviation where needed and results recorded in figure and tabels.

RESULTS

The results recorded are as follow. The number of lymph node received were 72. The age range was from 07 to 65 years with 40 male patients and 32 female patients and male to female ratio was 1.25:1. Figure-1. Non neoplastic lesions were 80.56% and neoplastic lesions were 19.44 %. Tuberculosis was the commonest lesion noted and accounted for 44.4% of all the cases, followed by reactive lymphoid hyperplasia (36.11%),non Hodgkin lymphoma 11.11%, Hodgkin lymphoma 4.16% and metastatic carcinoma was 4.16% respectively (Table-1).

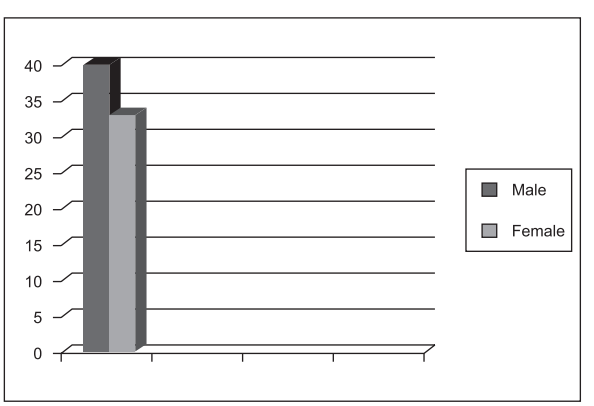

Figure 1: Male to female ratio in lymph node lesions (n=72)

Table 1: Morphological pattern of lymph node lesions(n=72).

S.NO	DISEASE	NO OF CASES	PERCENTAGE(%)
1	TUBERCULOUS LYMPHADENITIS	32	44.4%
2	REACTIVE LYMPHOID HYPERPLASIA	26	36.11%
3	NON HODGKIN LYMPHOMA	08	11.11%
4	HODGKIN LYMPHOMA	03	4.16%
5	METASTESIS	03	4.16%
TOTAL		72	100%

DISCUSSION

Lymphadenopathy is one of the common problem in clinical practice. The cause of lymphadenopathy cannot be diagnosed on clinical grounds, most of the time excision biopsy is required for diagnosis. Lymph node diseases are showing a rising trend worldwide. A number of studies have been done in order to know the magnitude of the problems[16,17].

The evaluation of lymph node histopathology remains one of the most challenging task for the pathologist[15]. There is often a confusing over-lap of non neoplastic and neoplastic lesions which may require information from studies other than H&E light microscopy especially immune and genetic markers. Morphologic examination of paraffin sections, however still remains the standard method of lymph node diagnosis[18].

This study show age range of 07 to 65 years. Other studies have age range of 1-84 years,5-68 years and 2-85 years by Roya, Maula and Rehman et al respectively. In this study male to female ratio is 1.25:1. The almost same male dominant ratio of 1.7:1 and 1.2:1 is shown by Roya and Maula et al respectively, where as Khan and Rehman et al show female dominant ratio of 0.6:1 and 1:2.1 respectively.

In our study cervical lymph nodes is the commonest site of the biopsy i.e. 39(54.1%) cases followed by supraclavicular, abdominal, axillary and inguinal 15(20.83%), 11(15.27%),4(5.55%) and 3(4.16%) cases respectively. In Khan et al the supraclavicular lymph node yield was was high i.e 64.85% followed by cervical lymph nodes i.e.46.64% followed by fewer cases of axillary and inguinal lymph nodes.

In this study non neoplastic lesions are more common 58(80.56%) as compared to neoplastic

lesions 23 (26.24%).The same is true in other studies conducted by Rehman et al where neoplastic lesions were 134(70.16%) and neoplastic lesions were 57(29.84%) cases, in Khan et al non neoplastic lesions were 63(73.26%) and neoplastic lesions were 23 (26.24%) cases, in Maula et al non neoplastic were were 62(82.66%) and neoplastic lesions 13(17.33%) cases and in Naseem et al non neoplastic lesions were 1555(87.11%) and neoplastic were 202(11.36%) were neoplastic.Where is in study conducted by Roya et al in India show high incidence of neoplastic lesion 535(53%) than non neoplastic lesions 475(47%), the reason may be that the hospital in which this study was conducted have the availability of immune markers and other specialized techniques and is working as referral histopathology laboratory.

In this study chronic granulomatous inflammation (tuberculosis) 32(44.4%) cases is the commonest lesion followed by Reactive Lymphoid Hyperplasia 26(36.11%), Lymphomas (both Hodgkin 3(4.16%) cases and Non Hodgkin Lymphomas 8(11.11%) cases) combined 11(15.37%) cases and Metastetic lesion 03 (4.16%) cases. Almost the same descending picture is present in other studies conducted by Rehman et al which show tuberculosis as 64(33.5%), reactive lymphoid hyperplasia 59(30.89%),lymphomas both Hodgkin 11(5.76%) and non hodgkin 22(11.52%) cases and combined 33(17.28%) cases, metastetic lesions 24(12.5%) other 9(4.7%) cases.

In study conducted by Khan et al show tuberculosis 32(37.2%) followed by reactive lymphoid hyperplasia including acute lymphadenitis 23(26.7%) cases where is no case of acute lymphadenitis is present in our study, lymphomas(both Hodgkin 6(6.9%) and non Hodgkin 3(3.5%) cases and combined 9(14.3%) cases, metastatic lesions present were 8(9.3%) cases.

In another study conducted by Maula et al at Bannu show tuberculosis as 39% followed by reactive lymphoid hyperplasia 33%, lymphoma 19% and metastesis as 06%.

In another study conducted by Roya et al in South India; 2013, show more neoplastic lesion 535(53%) as compared to non neoplastic lesions 475(47%), also this study show increased incidence of reactive lymphoid hyperplasia 218(21.6%) cases followed by tuberculosis 182(18%) which is different from this study as well as other studies conducted locally in Pakistan.

CONCLUSION

Lymph node biopsy have a key role in diagnosis of different causes of lymphadenopathies especially separating non neoplastic lesion from neoplastic lesions and further categorization of diseases in both non neoplastic where possible as well as neoplastic cases.

RECOMMENDATIOS

Standered fixation procedure in 10% buffered formal saline or B-5 fixative is mandatory for good slide preparation and histopathological examination. Also use of immunohistochemical marker are essential in categorizations of different benign and malignant lesions of lymph node as per requirements of the current classification of lymphomas.

Further it is suggested that fine needle aspiration biopsy whish is less invasive and less time consuming procedure must be adopted in lymphadenopathy especially suspecting tuberculosis where specificity and sensitivity is almost near to 100%.

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