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A CLINICAL, CYTOLOGICAL, HISTOMORPHOLOGICAL EVALUTION OF LYMPHNODES IN CHILDREN

Pathology

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ABSTRACT

Lymphadenopathy is a common clinical presentation of patients attending outdoor patient departments.The etiology varies with a wide spectrum ranging from inflammatory causes on one end to malignant on the other. In the present study, cytological and relevant histopathological diagnoses were done in 200 cases received in Department of Pathology.The present study aimed to find out the percentage of various lesions of lymph node and their prevalence according to age group and sex of patients. It also correlated the histo-cytodiagnosis in cases where both histology and cytology were available and compared the results of present study with similar other studies. It included 200 cases of lymphadenopathies.The cases were selected randomly. Lymph nodes included were of neck region, axilla, groin, from the extremities and the internal . Apart from haematoxylin and eosin (H & E) stain, special stains like Ziehl–Neelsen stain and giemsa stain were done wherever needed. Out of 200 cases, 93 (46.5%) cases were of reactive hyperplasia. Females were affected more commonly than males. Tuberculosis occurred more in younger patients whereas metastases were more common in older age group. Axillary lymph node was the most common lymph node involved. Histopathology gave accurate and confirmatory results than cytology. Lymph node evaluation is an integral part of patient management.

KEYWORDS

Lymph node, Histopathology, Reactive hyperplasia

INTRODUCTION

The immune response takes place in an integrated lymphoid system that includes the lymph nodes, spleen, and mucosa-associated lymphoid tissues (MALT) . The size of a node to which some pathological significance can be attached depends on the site. For instance, in the cervical and axillary regions a lymph node >1cm is considered significant, while in the epitrochlear region a node as small as 0.5cm becomes important. On the other hand, a node should be >1.5 cm in the inguinal region to be considered as abnormal.Superficial lymphadenopathy is a common finding and can be due to inflammation, metastatic malignancy or lymphoma . Lymph nodes less than 1 cm in size are rarely malignant.Lymph nodes are the most common site of metastatic malignancy and sometime constitute the first clinical manifestation of a disease. Axillary and cervical lymph nodes are more likely to be informative in cases of generalized lymphadenopathy. Inguinal lymph nodes are to be avoided whenever possible because of the high frequency of chronic inflammatory and fibrotic changes present in them. Small superficial nodes may show only non-specific hyperplasia, whereas a deeper node of the same group may show diagnostic features. Most enlarged lymph nodes are non-neoplastic and represent reaction to an infinite variety of antigens. In general, medical practice, neoplasia of lymphnodes is infrequent, about 1.1% of biopsies, whereas in referral centres their incidence may be as high as 60%. In patients attending OPDs, reactive lymphoid hyperplasia is probably the most common diagnosis made.

The age of patients is one of the most important factors in determining the nature of enlarged lymph nodes. In children, most lympha-denopathies are benign, whereas in adults, the probability of malignancy increases with age. Cause of Lymphadenopathy can be non-neoplastic which include reactive lymphadenopathy due to rheumatoid arthritis, toxoplasmosis, early stages of infection with HIV, paracortical hyper plasia due to acute viral infections like infectious mononucleosis (IM), sinus histiocy tosis/ reticular hyperplasia due to chronic gastritis caused by Helicobacter pylori, rheumatoid arthritis and granulomatous lymphadenitis like tuberculosis, sarcoidosis. The neoplastic causes include primary as Non-Hodgkin and Hodgkin disease while secondary as metastatic deposits. Other rare entities like silicone lymphadenopathy and dermatopathic lymphadeno-pathy have been described. The present study was done to study neoplastic and non-neoplastic conditions of lymph nodes and their prevalence according to age group and sex, to correlate the histocytodiagnosis in cases where both histology and cytology were available. The importance of this study lies in the fact that FNAC findings are primary diagnostic tools in evaluation of enlarged lymph nodes and hence aid in the early diagnosis of the disease. This can be of utmost importance at the primary health care level. Lymph node biopsy plays an important role in typing of lymphoma and helps in cases, which cannot be diagnosed by FNAC .

MATERIAL AND METHODS

This prospective study was carried out on 200 cases of lymphadenopathy in the Department of Pathology. Excision biopsy samples of lymph nodes were received in 10% formalin. The cases were selected randomly. It was taken into account that maximum cases with both cytological and histopathological examination were included. Age, sex,site of lymph node, duration oflymph node enlargement, history of fever and weight loss was noted. The cases in which more than one group of lymph nodes were enlarged, were put under the site from which excision biopsy was taken. Patients who returned with recurrence of enlarged lymph nodes were excluded from the study and were counted as a single case. All relevant history, except the cytological diagnosis was provided during the examination of excision biopsy specimens, to remove any observer bias. Gross findings included size, colour, consistency and cut section . Special stains like Zeihl Neelsen and Giemsa stain were applied wherever needed.

RESULTS

Out of 200 cases of lymph nodes, 93 cases were of reactive etiology (46.5%) and 23 cases of tuberculous lymphadenitis (11.5%). Malignancy, both primary (7.0%) and secondary(32.5%) constituted 39.5%. Rest of the 2.5% amounted to inconclusive sections. There were 14 cases (7%) of primary malignancy and 65 (32.5%) of metastatic deposits. In 5 cases (2.5%), the diagnos is was inconclusive, only description was given. Maximum number of females, 41(20.5%) were in the 4th decade followed by 36(18%) in 5th decade. Maximum number of males, 15(7.5%) were in the 2nd decade and over 60 years of age followed by 10(5%) patients in 3rd decade. Out of 34 cases diagnosed as reactive on histopathological examination, all the cases were found reactive on cytological examination and similar in tuberculous lesions also but in case of lymphoma, 2 cases were benign on cytological examination. In case of metastatic malignancy, 1 case was benign on cytological examination .Out of 200 cases, 77 (38.5%) cases presented with axillary lymph node enlargement, 39 (19.5%) with cervical node, 28 (14%) with mesenteric node, 13 (6.5%) with inguinal lymph node, rest of the cases with other nodal enlargement .

DISCUSSION

The present study comprised of 200 cases of lymphadenopathy

referred to the department of pathology.The results of histolopathology and cytological findings were compiled, scrutinized and compared with other studies. Out of total 200 cases, 68 were males and 132 were females, revealing a female preponderance with female to male ratio of 1.9:1. The age of patients ranged from 4 years to 100 years. The study conducted by Dandapat et al (1990)had a ratio of 1.2:1 while Shrestha et al (2007) reported a female to male sex ratio of 1.04:1, also showing female preponderance . The study conducted by Lee Bet al (1999) reported a ratio of 1.5:1 . In the present study, age ranged from 4 to 100 years with mean of 40.9 years. In the study of Dandapat et al, the ranged from 1-65 years with the mean of 33 years. In our study, out of 200 cases of lymph nodes, 116 (58%) cases were classified as benign, 79 (39.5%) cases as malignant and 5 (2.5%) cases were inadequate. Out of 116 cases of benign, 93 (46.5%) cases were reactive and 23 (11.5%) cases were of tubercular etiology. Out of 79 cases, 14 cases i.e.,7% were of primary malignancy and 65 i.e., 32.5% were of metastatic deposits. The most common cause of lymph node enlargement in all studies was reactive hyperplasia. In a study conducted by Zahir et al (2009) the most common cause of lymph node enlargement was reactive hyperplasia followed by malignancy than infectious disease . In a study by Thomas et al (1995), most common cause was reactive hyperplasia followed by granulomatous pathology than malignancy . Out of 200 cases, the most common lymph node involved was axillary in 77 cases (38.5%) followed by 39 cases of cervical lymph node (19.5%) and 28 cases of mesenteric lymph node (14%) along with 13 cases inguinal lymph node. The most common lymph node involved was axillary which was in concordance with previous studies conducted by Ojo et al (2005) and Lee B et al (1999) . In present study metastatic deposits were most common cause for axillary lymph node enlargement. Also Lee Bet al and Ojo et al showed the same results. In the present study, age ranged from 4 to 100 years, in the study of Hirachand et al (2009) , age ranged from 3-85 years, in the study of Shaikh et al (2010) , age ranged from 10-70 years, in the study of Dandapat age ranged from 1-65 years. In the present study 39.5% cases were found as neoplastic lesions, which constitute both primary malignancy as well as metastatic malignancy.

CONCLUSION

It was concluded from the present study that histopathology gave definitive diagnosis as compared to cytology. Lymphadenopathy is a common clinical presentation with >50% cases being benign. Females were affected more commonly than males. In the present study, female to male ratio was 1.9:1. Tuberculosis being more common in younger age group warrants the need for definite treatment and management process. Metastases, particularly adenocarcinomatous deposits are more common in elderly age group. Simple examination of lymph node cytology/ histopathology can help in clinical diagnosis of many cases.

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