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Original Research Paper

Pathology

NON-NEOPLASTIC AND NEOPLASTIC LESIONS IN LYMPH NODE BIOPSIES IN A TERTIARY CARE CENTRE IN KONKAN REGION

Dr Anuja Sunil Jire*	Junior Resident (MBBS, MD Pathology) BKLWRMC, Sawarde,Tal-Chiplun, Dist-Ratnagiri. *Corresponding Author
Dr Amardeep Ajinath Patil	Assistant Professor (MBBS, MD Pathology) BKLWRMC, Sawarde, Tal-Chiplun, Dist-Ratnagiri.
Dr Vijay Dhundiraj Dombale	Professor and Head Of Department (MBBS, MD Pathology , DCP) BKLWRMC, Sawarde, Tal-Chiplun, Dist-Ratnagiri.
Miss Kajal Surendra Pednekar	Technician (ADMLT-Pathology) BKLWRMC,Sawarde, Tal-Chiplun, Dist-Ratnagiri.

ABSTRACT

Objectives: Histopathological examination of lymph node is one of the gold standard test for the diagnosis of neoplastic and non-neoplastic lesions because lymphadenopathy is a common presentation of many disorders. This study aims to study the spectrum of pathological lesions of lymph node biopsies and to study the involvement of lymph node in neoplastic and non-neoplastic conditions. **Materials and Methods:** This retrospective study includes 60 histopathologically diagnosed cases of lymph node biopsies received by the Department Of Pathology, B.K.L. Walawalkar Rural Medical College, Ratnagiri from January 2021 to August 2023. **Results:** Out of 60 cases, neoplastic lesions (32 cases, 53.33%) were more common compared to non-neoplastic lesions (28 cases,46.66%). Non-neoplastic lesions included tuberculous lymphadenitis and non-specific reactive hyperplasia. Neoplastic lesions included metastasis, Hodgkin's lymphoma and Non-Hodgkin's lymphoma. **Conclusion:** Neoplastic diseases were more common than non-neoplastic diseases. Among non-neoplastic lesions, tuberculous lymphadenitis was the most common lesion and among neoplastic lesions, metastasis was more common.

KEYWORDS : Lymphadenopathy, Lymphadenitis, Lymphomas.

INTRODUCTION

Lymph nodes are distinct, ovoid, lymphoid structures. Approximately 600 such structures are spread out throughout the body. They are mainly concentrated in cervical, axillary and inguinal regions in the periphery and along the mesentery and mediastinum internally. Normal immune response in the body leads to proliferation and expansion of cellular components of lymph node causing its enlargement.[1]

The enlargement of the lymph node is common clinical finding, and can be due to neoplastic or non-neoplastic disorders.[2] The causes of non-neoplastic lymphadenopathy include reactive hyperplasia, infections (bacterial, viral, fungal), drug reactions (including certain vaccines), and a variety of miscellaneous non-neoplastic lymphoproliferative disorders. The neoplastic disorders are mainly lymphoid malignancies and metastases.[3,4]

Histopathological examination of lymph node biopsies has been the gold standard investigation for lymphadenopathy. It provides an early definitive diagnosis and plays a pivotal role in the clinical management.[1] Very few studies have studied spectrum of pathological lesion in lymph node biopsies. Hence, this study was conducted with the objectives - To study the spectrum of pathological lesions of lymph node biopsies and to study the involvement of lymph node neoplastic and non-neoplastic condition.

MATERIAL AND METHODS

This was a retrospective study conducted in Department Of Pathology from Jan 2021 to August 2023 after taking approval from institutional ethical committee, which included 60 cases of lymph node biopsies in this study.

Inclusion criteria:

All lymph node biopsy specimen which were adequate for opinion were included.

Exclusion criteria:

Histopathologically inconclusive results excluded.

Study procedure

Relevant clinical history was noted from the histopathological requisition forms and case notes. Macroscopic findings were noted and the biopsies were totally submitted for routine processing. 3 to 4 micron thick sections were obtained from the paraffin blocks and routinely stained with Haematoxylin and Eosin. The stained slides were examined under light microscope and findings were noted.

The statistical analysis of data was expressed as numerical and percentages. All biopsies were divided into 2 broad categories: non-neoplastic and neoplastic, and sub-grouped into specific diagnosis based on histopathological examination.

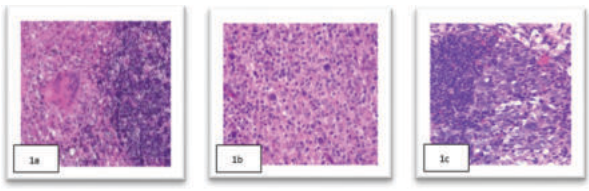

Figure 1a,1b,1c: Tuberculous Lymphadenopathy, Hodgkin's lymphoma, Metastatic Carcinoma

RESULTS

A total of 60 cases of lymph node biopsy, were considered in the present study, which was carried out in the Department Of Pathology. It was observed that overall, neoplastic lesions (32 cases, 53.33%) compared to non- neoplastic lesions (28 cases,46.66%).

Out of 60 biopsies received, 24 (40%) were from cervical region, 12(20%) from axillary region, 6(10%) from inguinal region, 10(16.6%) from supraclavicular lesion, 1(1.6%) from Auricle lesion, 1(1.6%) from submandibular lesion and 6(10%) from other regions.

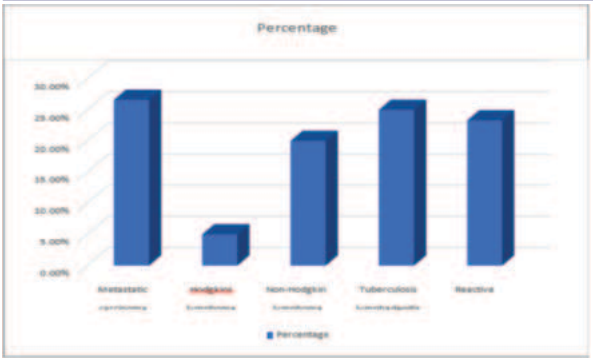

Figure 2: Percentage histopathological finding wise distribution of cases in the study of lymph nodes.

Table 1. Incidence of various etiological factor with sex distribution.

Sr No	Etiology	Male	Female	Total
1	Metastatic	9(56.2%)	7(53.8%)	16
2	Hodgkins"s lymphoma	3(100%)	-	03
3	Non-Hodgkin"s lymphoma	8(61.5%)	5(38.4%)	13
4	TB lymphadenitis	7(46.6%)	8(53.4%)	15
5	Reactive	5(38.4%)	8(61.5%)	13

Table 2. Age wise distribution of cases in the study of lymph nodes.

Age Group	Metastatic	TB	Reactive	Non-Hodgkin"s lymphoma	Hodgkin Lymphoma
0-10	-	1(6.6%)	1(7.1%)	-	-
11-20	-	4(26.6%)	4(28%)	1(8.3%)	-
21-30	-	4(26.6%)	6(42.8%)	-	1(33.3%)
31-40	01	2(13%)	-	1(8.3%)	-
41-50	5(31.25%)	3(20%)	1(7.1%)	1(8.3%)	-
51-60	6(47.5%)	-	-	1(8.3%)	-
61-70	1(6.25%)	1(6.6%)	1(7.1%)	8(58.3%)	-
71-80	3(18.75)	-	-	1(8.3%)	2(66.6%)
Total	16	15	13	13	3

DISCUSSION

Lymphadenopathy is a common medical problem, and cervical lymphadenopathy in particular may present in 56% of patients examined. Palpable lymph nodes offer an important diagnostic clue to the aetiology of the underlying condition. 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.[5]

In the present study, out of 60 cases of lymphadenopathy, it was observed that majority of lesions were neoplastic (32 cases,53.33) compared to non-neoplastic (28 cases, 46.66).These finding were consistent with studies by Kamat GC et al. (88.92%)[6], Saraswat A et al.[7] (90.9%), Vacchani A et al. (75%)[8], Rao MN et al. (56%)[9] and Rahman Md A (70.2%)[10].

In this study, out of 60 biopsies received, 24 (40%) were from cervical region, 12(20%) from axillary region, 6(10%) from Inguinal region, 10(16.6%) from supraclavicular lesion, 1(1.6%) from Auricle lesion, 1(1.6%) from submandibular lesion and 6(10%) from other regions. Similar findings were obtained in a study by Yadav et al.[11], in which cervical lymph nodes were involved in 56 cases (56%), mesenteric in 23 cases (23%), inguinal in 8 cases (8%), axillary in 8 cases (8%), supraclavicular in 3 cases (03%), right iliac node in 1 case (1%) and 1 case (1%) of pelvic node. Similarly in a study by Patel K et al.[12]cervical region was the commonest sites involved followed by mesenteric, axillary, inguinal and other regions.

In our study, among neoplastic lesions, majority of patients showed metastatic lesions 16 (26.66%). 13(20%) patients had Non- Hodgkin Lymphoma and 3(5%) were of Hodgkin lymphoma. Similarly, in a study by Rajan et al.[13] which was conducted with the objective to determine the histo pathological spectrum in lymph node biopsies it was shown that among the neoplastic lesions, lymphomas predominate 61.5 % over metastatic lesions 38.5 %. Of the neoplastic lesions, NHL constituted 58 cases, which accounted for 16.2 % of lymph node biopsies and constituted 80.5 % of all lymphomas. Among non -neoplastic lesions, TB lymphadenitis was seen in majority 15 (25%) of patients and reactive hyperplasia of lymph nodes was seen in 13(23.3%) of patients. In relation with these findings in a study by Shrestha et al.[14] the most common cause of lymphadenopathy was tubercular lymphadenitis (42 percent), followed by reactive lymphadenitis (23 percent). Many other studies concluded that tuberculosis is the common cause of superficial lymphadenopathy in developing countries like India.[1,15] In contrast, few studies conducted by Pagaro et al.[16] and Damle et al.[17] reported non-specific reactive hyperplasia as the most common cause. This regional discrepancy could be probably explained by the differences in socio-economic status, standard of living of people from whom the study material is taken.[1] In a study by Rajan et al.[13], among the non-neoplastic lesions, reactive lymphoid hyperplasia was the most common cause of lymphadenopathy (60 %) trailed by granulomatous lesions (82 cases, 34.2 %).

In our study, metastatic lesions, Hodgkin's lymphoma and non-hodgkin's lymphoma were predominant in males. TB and reactive hyperplasia was predominant in females. Similarly in a study by Pallavi et al.[1], it was shown that among tuberculous lymphadenitis patients, females outnumbered males with a ratio of 1.1:1.

In this study, TB and reactive hyperplasia were predominant in young patients whereas metastatic and lymphoma were predominant in elderly patients. In consistency with our findings, in a study by Pallavi et al.[1], it was reported that younger age group of patients was more commonly affected with TB. These findings are consistent with other studies by Rahman et al.[10]and Vacchani et al.[8]

CONCLUSION

Lymph node biopsy plays an important role in establishing the cause of lymphadenopathy. In our study, in non-neoplastic lesions tuberculous lymphadenitis was the most common cause of lymphadenopathy followed by reactive hyperplasia mostly affecting younger population. Among malignancies, metastatic lesions predominate over lymphomas commonly affecting elderly population. The study highlights the importance of lymph node biopsy for establishing the etiology and early diagnosis of lymphadenopathy.

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