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ORIGINAL RESEARCH

A histopathological Evaluation of spectrum of lymphadenectomies RT: spectrum of lymphadenectomies

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ABSTRACT

Introduction: The primary aim of this study therefore was to examine the frequency of nodal in situ neoplasmsof the ISFN type, as well as ISMCN, in an unselected pediatric population by retrospective analysis of surgical lymph node specimens. **Materials and Methods:** Sections from formalin fixed, paraffin embedded blocks and stained with H and E, stains were studied in all cases. Special stains including Ziehl Neelsen, periodic acid Schiff and Gomori's methenamine silver were used where indicated. Immuno histochemistry (IHC) was performed using relevant antibodies according to the histomorphological features. Results were assessed statistically. **Results:** Hodgkin lymphoma was seen in 34, non-hodgkin lymphoma in 48, follicular hyperplasia in 18, sinus histiocytosis in 12, paracortical hyperplasia in 19 and tuberculosis in 3 cases. The difference was significant ($P< 0.05$). **Conclusion:** Authors found that lymph node biopsies were found to be hodgkin lymphoma, non-hodgkin lymphoma,follicular hyperplasia and sinus histiocytosis.

Keywords: lymph node, biopsies, hodgkin lymphoma, non-hodgkin lymphoma,

INTRODUCTION

The neoplastic disorders are mainly lympho-hematogenous malignancies and metastases while the causes of non-neoplastic lymphadenopathy are more varied such as infections (bacterial, viral, fungal), drug reactions (including certain vaccines), lipid storage disorders and a wide variety of miscellaneous non-neoplastic lymphoproliferative disorders such as Castleman disease, Rosai Dorfman disease, Kimura disease, Kikuchi Fujimoto disease and systemic lupus erythematosus (SLE).[1,2] Lymphadenopathy is defined as abnormal size or structure of lymph node. It is a common problem in allage groups.[3] It is mostly caused by benign disorders and shows transient responses to the local or general infections but sometimes it is due to malignant disorders. Studies consider age,location of lymphadenopathy, duration of disease, being local or generalized, other signs and symptoms like fever and splenomegaly.[4] Among the peripheral nodes, those in the upper part of the body (cervical, supraclavicular axillary) are preferentially biopsied than lower limb nodes (popliteal, inguinal or femoral) as the former are more likely to yield definitive diagnosis, whereas the latter are often characterized by nonspecific reactive or chronic inflammatory and fibrotic changes.[5]

The incidence and prevalence of ISFN in the adult population have been described and they appear to be low.[6-8]Similarly, ISMCN is an exceptionally rare event, as described by Adam et al.[9] Although it is to be expected that ISFN and ISMCN are a very rare event in the pediatric population, this has not been studied systematically before. The primary aim of this study therefore was to examine the frequency of nodal in situ neoplasmsof the ISFN type, as well as ISMCN, in an unselected pe diatric population by retrospective analysis of surgical lymph
node specimens. In light of the detailed evaluation necessary to rule out (incidental) in situ neoplasms,

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the secondary aim was to more closely categorize the reactive lymph node changes observed.

MATERIALS & METHODS

The present study was conducted in the department of general pathology. It comprised of 114 lymph node biopsies of both genders. Ethical approval for the study was obtained before starting the study.

Sections from formalin fixed, paraffin embedded blocksand stained with H and E, stains were studied in all cases. Special stains including Ziehl Neelsen, periodic acid Schiff and Gomori's methenamine silver were used where indicated. Immuno histochemistry (IHC) was performed using relevant antibodies according to thehistomorphological features. Results were assessed statistically. P value less than 0.05 was consideredsignificant (P< 0.05).

RESULTS

Table 1 shows that out of 124 cases, 108 were seen in males and 16 in females.

Table 1 Distribution of patients

Total- 124		
Gender	**Males**	**Females**
Number	108	16

Table 2 shows that Hodgkin lymphoma was seen in 34, non-hodgkin lymphoma in 48, follicular hyperplasia in 18, sinus histiocytosis in 12, paracortical hyperplasia in 19 and tuberculosis in 3 cases. The differencewas significant (P< 0.05).

Table 2 Distribution of different types of lesions on lymph node biopsy

Type	Number	P value
Hodgkin Lymphoma	34	0.05
Non-Hodgkin lymphoma	48	
Follicular hyperplasia	18	
Sinus histiocytosis	12	
Paracortical hyperplasia	19	
Tuberculosis	3	

Table 3 shows that clinical features were cough in 74, fever in 47, weight loss in 82, night sweat in 34, lymph node pain in 60 and splenomegaly in 17 patients. The difference was significant (P< 0.05).

Table 3 Clinical features in patients

Clinical features	Number	P value
Cough	74	0.01
Fever	47	
Weight loss	82	
Night sweat	34	
Lymph node pain	60	
Splenomegaly	17	

DISCUSSION

Though fine needle aspiration cytology is commonly used to establish the etiological diagnosis, excision biopsy of the lymph node remains the "gold standard" for diagnosis. Physicians should consider level of referral and conditions of patient and epidemiologic background of that area for better approach to lymphadenopathy.[10] Indications of lymph node biopsy is not so clear and it depends on physician opinion and it should be performed considering all patient conditions, clinical features and epidemiologic information about different causes of lymphadenopathy.[11] The present study was conducted to evaluate histopathological spectrum of lymphadenectomies.

In present study, out of 114 cases, 103 were seen in males and 11 in females. We found that hodgkin lymphoma was seen in 32, non-hodgkin lymphoma in 46, follicular hyperplasia in 16, sinus histiocytosis in 10, paracortical hyperplasia in 18 and tuberculosis in 2 cases. Roy et al[12] found that neoplastic lesions were more common comprising 53% (535 cases) and included 32.1% (324 cases) of non-Hodgkin lymphoma, 12.4% (125 cases) of Hodgkin lymphoma and 8.5% (86 cases) of metastatic lesions. The non-neoplastic lesions were 47% (475 cases), which included 21.6% (218 cases) of non-specific reactive lymphoid hyperplasia, 6.8% (69 cases) of other reactive or specific lymphoid hyperplasia, 18% (182 cases) of tuberculous lymphadenitis, 0.6% (6 cases) of other granulomatous lesions.

We found that clinical features was cough in 72, feverin 45, weight loss in 80, night sweat in 32, lymph node pain in 58 and splenomegaly in 15 patients. Zahir et al[13] found that there were 208 specimens, 98 women (47.1%) and 110 men (52.9%). Mean age was 32.94 years. There were 45 cases (21.6%) of malignancy, 33 cases (15.9%) of infectious diseases and 130 cases (62.5%) of reactive lymphadenopathy. The most common histopathologic finding in all ages was reactive lymphadenopathy. Clinical signs and symptoms had significant relationship with pathologic findings. For a decision of lymph node biopsy attention to patients symptoms and signs especially B signs, size of the lymph node >2cm, generalized lymphadenopathy, mobility of lymph node and splenomegaly seems to be the useful guide lines for physician. In this study it seems that decision to take biopsy was correct in 75% of the cases.

Damle et al[12] in their study a total of 331 lymph node biopsies were studied. Age distribution varied from 4 to 81 years with male to female ratio of 1:1.4. Non – neoplastic lesions comprised of maximum cases (80.06%) while neoplastic lesion were present in (19.93%) cases. Reactive lymphadenitis was the predominant non-neoplastic finding followed by granulomatous lymphadenitis. Neoplastic lesions were included 3.61% cases of lymphoma and 16.31% cases of metastatic lesions.

In addition to providing insight into the presence – or in this case the absence of in situ lymphocytic neoplasias in a pediatric population, our study also provides inter- esting information on the distribution of reactive lymph node changes in lymphadenectomy

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specimens. The spec- trum of reactive lymph node changes was broad, with het- erogeneous distributions possibly determined by region- al variations in geography, demographics, catchment area, season, and year, respectively. As such, in pediatric lymph node samples lacking overt infiltration by malig- nant lymphoma, the results of the current study support the necessity for a detailed workup to exclude treatable infectious or inflammatory alterations responsible for the observed reactive changes and to 'exempt' the pathologist from undertaking extensive studies to exclude the unlike- ly event of ISFN or ISMCN. Interestingly, in a longer fol- low-up, 1 patient was diagnosed with DiGeorge syn- drome and 4 with autoimmune lymphoproliferative syn- drome, 2 siblings of whom developed B-cell lymphopro- liferations during the course of the follow-up. Also in these select cases, however, no early in situ lesions wereobserved.

CONCLUSION

Authors found that lymph node biopsies were found to be hodgkin lymphoma, non-hodgkin lymphoma, follicular hyperplasia and sinus histiocytosis.

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