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ANALYSIS OF 10-YEAR EXCISIONAL LYMPH NODE BIOPSY RESULTS

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Keywords

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ABSTRACT

Lymph nodes become enlarged and prominent in the presence of infection or malignant cell infiltration. Lymph nodes that do not regress with treatment or whose findings indicate malignancy should be evaluated for biopsy. This study aimed to analyze lymph nodes considered malignancy suspicion retrospectively and underwent excisional biopsy. Patients who underwent excisional lymph node biopsy between January 2011 and December 2021 were evaluated retrospectively. The patient's age, gender, diameter of the excised lymph nodes, excision area, and histopathological examination results were assessed. It was determined that 174 excisional lymph node biopsies were performed. One hundred fifty-six of these patients were included in the study. The average age of the patients was found to be 49.63+15.16 years. It was determined that 51.28% of the patients were women. The average lymph node diameter was determined as 2.75+1.13 mm. It was observed that lymph node biopsy was most frequently performed from the right axillary region (n:49). Lymphoma was detected in 44 of 156 patients (28.2%). Four metastatic lymph nodes and tuberculosis were detected in 4 patients. Excisional lymph node biopsy remains important as an effective and rapid diagnostic method for diagnosing lymphoma.

INTRODUCTION

Enlarged lymph nodes are a condition that may appear as the first sign of diseases and cause serious concern for patients. After examining these patients, ultrasonography is first performed[1,2]. The necessity of biopsy comes to the fore when the lymph node is evaluated, along with radiological findings, and infection is not considered. In these patients, imaging-guided needle biopsies are performed primarily as a minimally invasive procedure[3,4]. However, these needle biopsies are not always sufficient for diagnosis, and lymph node excision may be required[3,5]. Excisional biopsy is the procedure that should be performed to confirm the diagnosis in granulomatous diseases, hematological malignancies, or in patients whose diagnosis cannot be made by needle biopsy[4,6]. The clinician may first request an excisional biopsy to evaluate hematological pathologies and lymph node capsule invasion. In this study, the results of patients who underwent excisional lymph node biopsy were evaluated and the results were analyzed.

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MATERIALS AND METHODS

Patients who underwent excisional lymph node biopsy between January 2011 and December 2021 were evaluated retrospectively. The patient's age, gender, lymph node diameter, lymph node localization, preoperative diagnosis, and histopathology result of the excised lymph node were evaluated. Lymph node diameter was taken as the largest diameter detected on ultrasonography. Data about the patients were taken from the hospital IT database. Retrospective study approval was received for this study (2021-2681). Patients diagnosed with fine needle biopsy and tru cut biopsy were excluded from the study.

Statistical Analysis

For statistical analysis, SPSS for Windows version 22.0 package software was used. Descriptive statistics include mean and standard deviation for numerical variables and number and percentage values for categorical variables. The Pearson correlation coefficient was used to test relations between numeric variables.

RESULTS

Among the patients who underwent excisional biopsy, seven patients, 11 of whom were diagnosed with malignancy and excised due to suspicion of metastasis, were excluded from the study after being detected in the operating room during the surgical procedures and sent for examination. A total of 156 patients were included in the study. It was determined that an excisional biopsy was planned in these patients to consider and diagnose malignancy. The average age of the patients was found to be 49.63+15.16 years. The average lymph node diameter was found to be 2.75+1.13 cm. The average diameter of malignant lymph nodes was found to be 3.4+0.35 cm. It was determined that 80 patients (51.28%) were women. It was determined that 72 of these 156 patients (46.15%) had a preliminary lymphoma diagnosis; therefore, an excisional lymph node biopsy was requested. As a result of histopathological examination of the lymph nodes removed from these 72 patients, it was determined that 26 (36.11%) had lymphoma. As a result of histopathological examination of all 156 patients, 44 (28.2%) lymphomas were detected. Malignant melanoma metastasis was detected in 3 patients, and Kaposi sarcoma was seen in 1 patient. Chronic Lymphocytic Leukemia (CLL) in 3 patients (1.92%), tuberculosis in 4 patients (2.56%), Ebstein Barr virus (EBV)-related lymphoproliferative disease in 3 patients (1.92%), and one patient (0.64%) Castleman Disease was detected. Granulomatous lymphadenopathy was seen in 17 patients (10.89%). Reactive or nonspecific lymphadenopathy was detected in 80 patients (51.28%) (Table 1). It was determined that the most common biopsy location was the right axilla (n: 49) (31.41%). It was determined that excisional lymph node biopsy was performed second most frequently from the left axilla (n: 40) and third most often from the right inguinal region (n: 30) (19.23%). Excisional biopsy performed from the periauricular area is noteworthy, with the most minor frequency occurring in 1 case (Table 2).

Table 1. *Distribution of diseases.*

Diagnosis	n	%
Lymphoma	44	28,2
Metastatic Lymph Node	4	2,56
Tuberculosis	4	2,56
CLL	3	1,92
EBV-Related Lymphoproliferative Disease	3	1,92
Castleman Disease	1	0,64
Granulomatous lymphadenitis	17	10,89
Reactive/nonspecific lymphadenopathy	80	51,28

** CLL: Chronic lymphocytic leukemia.*

Table 2. *Lymph node biopsy areas.*

Anatomical region	n	%
Right axillary region	49	31,41
Left axillary region	40	25,64
Right inguinal region	30	19,23
Left inguinal region	24	15,38
Right supraclavicular region	2	1,28
Left supraclavicular region	4	2,56
Right cervical region	3	1,92
Left cervical region	3	1,92
Periauricular region (Right)	1	0,64

DISCUSSION

Lymph nodes may enlarge due to viral, bacterial, or neoplastic cell infiltration[7]. Lymph nodes in the inguinal area can often be detected during adult examination. Cervical or submandibular lymph nodes can be seen in the presence of upper respiratory tract infections[8]. Lymphadenopathies that develop due to infectious agents regress with treatment. The need for biopsy arises in lymphadenopathies that do not regress despite the treatment given[9]. Physical examination findings of lymph nodes, radiological evaluation results, and the presence of widespread lymph nodes are the parameters that affect the biopsy decision[6,10].

Needle biopsies are frequently used to evaluate lymph nodes as a minimally invasive method. However, in cases where needle biopsies give insufficient results, especially in diagnosing lymphoproliferative diseases, lymph node excision remains essential. In this study, lymphoma was most frequently detected in the excised lymph nodes, which is compatible with literature data[3,11,12]. Among the patient data included in the study, 46.15% of the patients were referred for biopsy with a preliminary diagnosis of lymphoma, which appears to be a high rate. This may be why the clinician who thinks the patient has lymphoma prefers an excisional biopsy to reach a diagnosis quickly. Histopathology results highly confirm the clinician's suspicions. It allows patients to start early treatment with an accurate diagnosis obtained in a short time. The fact that needle biopsies cannot be diagnosed, especially in the diagnosis of low-grade lymphoma and diffuse large B-cell lymphoma, ensures that excisional lymph node biopsies still maintain their importance as a valuable and rapid diagnostic method in the diagnosis of lymphoma[13,15]. In our study, malignancy was detected in 51 (32.69%) of 156 patients who required excisional biopsy due to enlargement and structural change of lymph nodes. This rate attracts attention as a high malignancy detection rate. Notably, the right axillary region was preferred as the biopsy location.

In their study, Chan et al. highlight the importance of taking enough samples from the lesion for analysis. This is because, in cases of classical Hodgkin lymphoma, about one-third of small biopsy samples may not be diagnosed by Flow cytometry due to the low number of collected cells. Therefore, sufficient material is necessary to ensure accurate diagnosis. Interestingly, fibrosis associated with nodular sclerosis may be partially responsible for the low number of cells collected in some cases[16]. No patient in our study who underwent an excisional biopsy was shown to be unable to diagnose due to tissue insufficiency.

Nixon et al., in their study, multivariate analysis showed that lymph nodes smaller than 3.4 cm, young age, and rheumatological diseases were associated with non-malignant lymph nodes[17]. In a study by Bosch et al., it was found that lymph node size of 1 cm or larger and hard and fixed tissue are associated with a cancer diagnosis. Similarly, Kuhnl et al. reported that older age, male gender, supraclavicular node involvement, and multiple nodal sites were indicative of a malignant diagnosis. On the other hand, extranodal sites were linked to a lower risk. In our study, the average size of all lymph nodes was 2.75+1.13 cm, while the average size of malignant lymph nodes was 3.4+0.35 cm.

CONCLUSION

Excisional lymph node biopsy still maintains its importance, especially in diagnosing lymphoma. It is arguably still the most important diagnostic method in diagnosing low-grade lymphomas. In cases where lymphoma is suspected clinically and radiologically, performing an excisional lymph node biopsy as soon as possible to reach an early diagnosis may provide the advantage of starting early treatment.

Conflict of interest statement

The authors declare that they have no conflicts of interests.

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