

ORIGINAL RESEARCH

Role of FNAC in the Diagnosis of Cervical Lymphadenopathy

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ABSTRACT

Background & Method: The aim of the study is to study the role of FNAC in the Diagnosis of Cervical Lymphadenopathy. Cervical lymphadenopathy was subjected to FNAC using 22 gauge needle and a 10 ml syringe. The slides were wet fixed and studied using Hematoxylin and Eosin staining. Cases with purulent aspirate were followed up with ZiehlNeelsen staining.

Result: The chi-square statistic is 18.1276. The p-value is .045021. The result is significant at $p < .05$.

The chi-square statistic is 78.6268. The p-value is 0.037801. The result is significant at $p < .05$.

Conclusion: FNAC combined with clinical correlation can be used as a first line investigation in work up of lymph node lesions. Further management depending upon the cause can be suitably guided by this simple, cost effective procedure.

Key words: FNAC, Diagnosis, Cervical & Lymphadenopathy

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Introduction

A neck mass in an adult, when present for longer than a week is pathological until proven otherwise [1-3]. Enlarged lymph nodes are by far the most common neck masses encountered. In our country, tubercular lymphadenitis is not uncommon but even so, a large percentage of all persistent adult neck masses in adults turn out to be malignant [4].

Lymphadenopathy is one of the first sign of malignancy in a patient. FNAC not only confirms the presence of metastatic disease, but also gives clues regarding the nature and origin of the primary tumour. The number of lymph nodes involved, the size of the lymph nodes or the lymph node metastasis, or the regional lymph node basin involved also has been shown to have prognostic value [5]. In patients with enlarged lymph nodes and previously documented malignancy, FNAC can obviate further surgery performed merely to confirm the presence of metastasis. However, regional lymphadenopathy is not always due to metastatic tumour, and not every nodule represents a lymph node. Cysts (congenital or acquired), abscesses, subcutaneous benign and

malignant tumours may also raise the question of lymph node metastasis, especially in patients with a known tumour [6-8].

Fine Needle Aspiration cytology (FNAC) is a procedure that involves passing a thin hollow needle through the tissue to be studied, to sample cells for microscopic analysis.

Fine needle aspirations can be performed on palpable swellings or impalpable lesions which are image detected. For impalpable lesions, imaging is done to see the nature of the lesion and localize it. Then if aspiration is warranted, needle is passed under image guidance. Needle is ensured to be in the lesion before aspiration. Ultrasound is the most frequently used, but CT, PET-CT can also be used [9].

Materials & Methods

Study conducted at Tertiary Care Centre for 01 Year on total of 150 patients with cervical lymphadenopathy was subjected to FNAC using 22-gauge needle and a 10 ml syringe. The slides were

wet fixed and studied using Hematoxylin and Eosin staining. Cases with purulent aspirate were followed up with ZiehlNeelsen staining. 35 cases in which cytological material was inadequate or diagnosis was equivocal were excluded from the study.

The FNAC procedure was done without radiological guidance for palpable lymph nodes of cervical, axillary, and inguinal regions. After palpation, two to three passes were performed.

Results

Table1:Age and topographic distribution among the different groups of cervical lymphadenopathy

	0-20	21-40	41-60	61-80	> 80	Total
Upper deep	15	19	14	8	0	56
Supraclavicular	2	12	16	10	3	43
Lower deep cervical	0	8	9	5	0	22
Submandibular	0	1	5	4	0	10
Preauricular	0	8	0	0	0	8
Mid cervical	0	1	3	3	0	7
Occipital	0	4	0	0	0	4
Total	17	53	47	30	3	150

The chi-square statistic is 18.1276. The p-value is .045021. The result is significant at p <0.05

Table2:Size and cytological diagnoses of the 157 studied cases with cervical lymphadenopathy

Cytological diagnoses	No. of cases	Size	
		≤2cm	≥2cm
Benign cases	47	41	6
Reactive lymphoid hyperplasia	19	19	0
Chronic necrotizing lymphadenitis	17	14	3
Chronic granulomatous lymphadenitis 10	09	7	3
Malignant and suspicious cases	108	23	83
Metastatic malignant tumors	30	2	28
Diagnostic of NHL	08	3	6
Suspicious for NHL	51	9	42
Diagnostic of HL	04	1	3
Suspicious for HL	14	8	6
Total	150	62	88

The chi-square statistic is 18.1276. The p-value is .045021. The result is significant at p <0.05

Discussion

In our study, we observed that the categorization of the cause of lymphadenopathy into reactive, inflammatory, metastatic, and lymphoproliferative could be reliably done by FNAC. A high sensitivity (71.4%) and specificity (91.5%) of FNAC was reported in previous studies for the evaluation of lymphadenopathy [10]. For patients with a known histologically proven malignancy in whom a subsequent enlargement of lymph node occurs, a cytological diagnosis of metastasis helps in avoiding unwanted surgical biopsy for confirming metastasis. In patients without a previous diagnosis of malignancy, FNAC not only confirms metastasis but in most circumstances gives a clue regarding the site of the primary [11-13]. Furthermore, if cell block material is sufficient, immunohistochemical (IHC) studies can reliably identify the primary site of origin. In cases of lymphoproliferative diagnosis on FNAC, the cytological diagnosis should be followed by histological evaluation for accurate classification of lymphoma and grading. In our study, 19 cases were

diagnosed with a lymphoproliferative disorder, all of them were finally diagnosed with either Hodgkin's or non-Hodgkin's lymphoma on histology [14-16]. The lesion arising in lymph nodes can be found in patients ranging from an early to advanced age [17, 18]. This was correlated with our findings where we found that the youngest patient in the present study was 4.5 years old and the oldest one was 82 years old, the mean age was 46 years. These figures came in close comparison to other workers [1]. We observed that the peak incidence of benign lesions was in the 3rd decade while the peak incidence of malignant lesions was in the 5th decade. These findings correlated with that cause of the presence of more malignancy in older age to the fact that adult or elderly patients often react to the infection with only slight to moderate lymph node enlargement; therefore, distinct lymphadenopathy in an elderly patient would arouse suspicion of malignancy and justify immediate needle biopsy.

Conclusion

A lesions causing cervical lymphadenopathy can be successfully identified on FNAC. In the current

study, the most common causes were tuberculosis, reactive hyperplasia and metastatic malignancies particularly squamous cell carcinoma deposits. FNAC combined with clinical correlation can be used as a first line investigation in work up of lymph node lesions. Further management depending upon the cause can be suitably guided by this simple, cost effective procedure.

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