

Evaluation of Cervical Lymphadenopathy by Fine Needle Aspiration Cytology: A Study at a Government Hospital of Uttarakhand, India.

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Abstract

Background: Cervical Lymphadenopathy is one of the most common clinical presentation affecting all age groups. Fine needle aspiration cytology (FNAC) of lymph node is a quick, reliable, cost effective technique and can be used as first line diagnostic test easily carried out in OPD and can be readily used to differentiate between various benign and malignant conditions.

Aims and objectives: This study was conducted with the aim to estimate the overall incidence, demographic profile and various causes responsible for cervical lymphadenopathy in Northern region of the country.

Material and method: A retrospective analysis has been carried out in the department of pathology between December 2011 to December 2015 at Government Doon Hospital, Dehradun. FNAC was done on a total of 3552 patients for various indications out of which 1018 patients were selected for the study who presented with cervical lymphadenopathy.

Result: Total 1018 cases of cervical lymphadenopathy were studied. Out of total cases presented with cervical lymphadenopathy 625 cases were of tuberculosis 335 cases reactive lymphadenopathy, 53 were metastatic, 3 were lymphoma. Maximum numbers of cases were 0-20 years age group. Males were more than the females. Squamous cell carcinoma was the commonest type of metastasis to cervical lymph nodes.

Conclusion: The study concluded the fact that the Tuberculosis is the most common cause of cervical lymphadenopathy followed by reactive lymphadenopathy. FNAC give very important clue to the diagnosis among patients presented with cervical lymphadenopathy particularly in differentiating benign from malignant conditions.

Keywords: Fine Needle Aspiration Cytology (FNAC), Lymph Nodes, Cervical Lymphadenopathy

I. Introduction

The use of fine needle aspiration cytology (FNAC) in the investigation of cervical lymphadenopathy is an acceptable and widely practiced minimally invasive technique, which is safe, simple, rapid and relatively painless. (1,2) FNAC is highly cost effective and accurate technique required as a first line investigation used to differentiate reactive inflammatory conditions, granulomatous disorders and malignancy (3). Cervical lymphadenopathy is very commonly encountered in clinical practice in our Outpatient clinics. The management of these various lesions is very different and hence the determination of the etiology is of paramount importance. FNAC has also emerged as a highly sensitive and specific tool to diagnose cervical lymphadenopathy (4). The most common cause of cervical lymphadenopathy in our setting are inflammatory conditions which are responsible for the majority of lesions. Lymph nodes clinically suspected of malignant metastasis are one of the most common indications for FNAC in the elderly.

II. Material And Method

This retrospective study was carried on archival cases of FNAC from 4 years records between December 2011 to December 2015 in Department of Pathology, Doon Government Hospital, Dehradun. Out of total 3552 cases a total of 1018 patients with cervical lymphadenopathy were studied and subjected to FNAC using 22 gauge needles and a 20 ml syringe. One slide was air dried and stained by May- Grunwald-Giemsa and the other slides were wet fixed and studied using Papanicolau staining method. Cases with purulent aspirate were followed up with Ziehl-Neelsen staining.

III. Results

FNAC was performed on 1018 patients presented with cervical lymphadenopathy. Among these cases 627 cases were of Tubercular Lymphadenitis (61.5%), followed by 335 cases Reactive lymphadenopathy (32.9%), 53 cases Metastatic Lymphadenopathy (5.2%) and 3 cases of Lymphoma (0.2%). Amongst the metastatic cases, 51 were squamous cell carcinoma (5.0%), 1 case of metastatic adenocarcinoma (0.09%) from

CA of breast and 01 case of metastatic malignant melanoma(0.09%). Total 3 cases of Lymphoma were reported (0.29%) Out of which 2 cases were Non Hodgkins lymphoma(0.19%) and 1 case was reported as Hodgkins Lymphoma(0.09%). 412 cases were in the age group 10-20 years (40.4%) followed by 347 cases in the age group 20-40 years (34.0%). The incidence of cervical lymphadenopathy were more common in males (563) than female (455) with male: female ratio 1.23:1.

Table 1: FNAC results of cervical lymphadenopathy in the present study.

AGE(years)	SEX	REACTIVE LYMPHADENOPATHY	TUBERCULOUS LYMPHADENOPATHY	METASTATIC LYMPHADENOPATHY	Hodgkins Lymphoma	Non Hodgkins Lymphoma
0-20	M	129	104	00	01	00
0-20	F	92	85	00	00	01
21-40	M	31	120	00	00	00
21-40	F	46	149	00	00	01
41-60	M	20	97	07	00	00
41-60	F	11	54	01	00	00
61-80	M	04	09	39	00	00
61-80	F	02	08	05	00	00
81-100	M	00	01	01	00	00
81-100	F	00	00	00	00	00

[Reactive lymphadenopathy includes reactive hyperplasia, acute and chronic inflammation and suppurative inflammation .

Tuberculous lymphadenopathy includes granulomatous, caseating and tuberculous abscess]

Table 2: Comparison of current study with other studies for cervical lymphadenopathy.

AUTHOR	TOTAL CASES	REACTIVE LYMPHADENITIS	TUBERCULOUS LYMPHADENITIS	MALIGNANCY (PRIMARY AND METASTATIC)
Current study 2016	1018	335	627	56
Jyoti et al 2015	1195	354	663	141
Bhawani C et al 2014	265	94	112	33
Renuka Khuba 2012	50	10	08	03
Vapi et al 2011	34	08	10	03
Tariq et al 2008	100	18	36	14
V.Koo et al 2006	18	00	05	06
Meera bai 2004	50	03	31	16

IV. Discussion

This study was done to evaluate the role of FNAC in clinically significant cervical lymphadenopathy. In present study male patients outnumbered female patient at a ratio of 1.23:1 representing male preponderance for the disease. Similar findings were reported in other studies. 412 patients were in the age group 10-20 years (40.4%) followed by 347 cases in the age group 20-40 years (34.0%). The study shows high incidence of malignancies particularly metastases in the higher age groups i.e. 61 – 80 years followed by 40-60 years. The results were similar to other studies carried by the age ranges from 9 months which was a case of tuberculous lymphadenitis to 84 years of age, a case of metastatic carcinoma. (5,6,12)

Out of 1018 cases 962 were benign (94.4%) and negative cytological diagnosis included tuberculous inflammation and reactive lymphadenopathy. Among the benign cases 627 cases were of tuberculosis (61.5%) followed by 335 cases of reactive lymphadenopathy (32.9%) which correlates with studies done by various authors (5,7,10,11,13). 56 cases were diagnosed with malignant pathology (5.4%) which is similar to other studies. Metastatic squamous cell carcinoma was present in majority of metastatic cases (94.5%) (8) followed by one case of metastatic malignant melanoma and metastatic adenocarcinoma. 2 cases of Non Hodgkins and 1 case of Hodgkins lymphoma were diagnosed. The results are comparable with other study done. (9)

V. Conclusion

Cervical lymphadenopathy is the commonest clinical presentation with varied etiology. FNAC of lymph nodes is a very useful and reliable technique in the diagnosis of cervical lymphadenopathies. This study was undertaken to evaluate the role of FNAC in diagnosis of the common curable causes of cervical

lymphadenopathy such as tuberculosis especially in context to India where endemicity of tuberculosis is very high. Besides benign lesion it is also highly valuable tool for tracing occult primaries and sometimes surprises the clinicians when they have not suspected any malignancy.

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