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Original Research Article

Evaluation of fine needle aspiration cytology among lymphadenopathy patients in Ambedkarnagar, Uttar Pradesh, India

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ABSTRACT

Background: Surgical fine needle aspiration cytology is most popular diagnostic aid in patients with lymphadenopathy.
Methods: This one year observational study comprised of aspirate collected from lymph nodes of patients attending Mahamaya Rajkiya Allopathic Medical College and Hospital, Ambedkarnagar, Uttar Pradesh, India. Fine needle aspiration was performed in all the patients and slides were stained with H and E, PAP and Ziehl Neelsen stains. SPSS was used for data analysis. Fischer's Exact test was applied.
Results: Out of the 51 patients, the most common site of lymph node aspirated was cervical (72.5%). A higher proportion of cases were diagnosed as chronic nonspecific lymphadenitis (23.5%) followed by granulomatous abscess (23.5%), tubercular lymph node (21.6%) and reactive (17.6%). A significant association found between FNAC diagnosis and age was found ($p \leq 0.05$).
Conclusions: FNAC is a simple and useful procedure in patients with lymphadenopathy.

Keywords: FNAC, Lymphadenopathy, North India

INTRODUCTION

Fine needle aspiration cytology (FNAC) is the study of cellular samples obtained through a fine needle under negative pressure. The technique is relatively painless and inexpensive. When performed by well-trained pathologists/surgeons/clinicians and reported by experienced pathologists, it can provide unequivocal diagnosis in most of the situations.[1]

FNAC is also useful in diagnosis of tuberculosis and other infections which include viral, fungal and protozoa infections as well as in diagnosis of primary lymphoid malignancies and secondary metastatic tumors.[2,3] The present study was undertaken to find out the pattern of lymph node disorders diagnosed by FNAC.

METHODS

This retrospective study comprises of aspirate from lymph nodes done at Mahamaya Rajkiya Allopathic Medical College and Hospital, Ambedkarnagar, Uttar Pradesh, India during a period of one year from 1 January 2015 to 31 December 2015. It consists of 51 lymph node aspirates from different patients. FNAC was performed using a 23G needle by the first author himself. Four smears were prepared on glass slides. One slide was air dried and was stained by May-Grunwald Giemsa stain whereas 2 slides were fixed in alcohol, one of which is stained by Hematoxylin and Eosin stain whereas other was stained by Papanicolaou stain. One slide was left unstained for performing special stains like Ziehl-Neelson stain and periodic acid schiff (PAS) stain

wherever necessary. SPSS was used for data analysis. Fischer's Exact test was applied. P value <0.05 was considered significant.

RESULTS

Out of the 51 patients, 27 (52.94%) patients were males and 24 (47.06%) were females leading to a M:F ratio of 1.125:1. Majority of the patients were aged between 0-20 years. (51.0%) followed by 21-40 years (31.4%). The most common site of lymph node aspirated was cervical (72.5%) followed by submandibular (9.8%) and axillary (5.9%). A higher proportion of cases were diagnosed as chronic nonspecific lymphadenitis (23.5%) followed by granulomatous abscess (23.5%), tubercular lymph node (21.6%) and reactive (17.6%) (Figure 1).

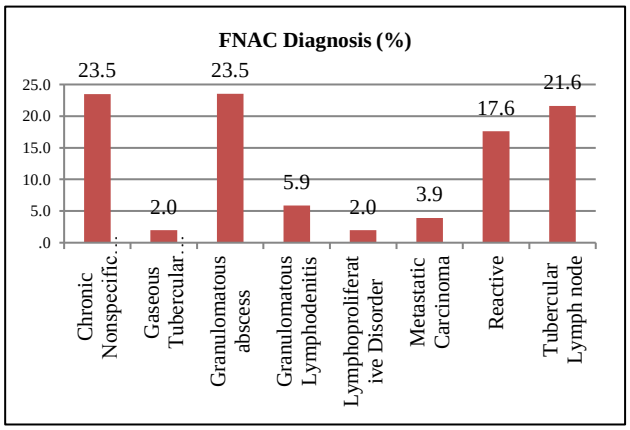

Figure 1: Percentage of cytological diagnosis in lympadenopathy patients.

There was no significant association between type of lymph node and gender (F=6.38, p=0.803) (Table 1).

A significant association found between FNAC diagnosis and age group (F=28.96, p=0.041) (Table 2).

Table 1: Gender wise distribution of patients with lympadenopathy.

Type of lymph node		Sex		Total
		Female	Male	
Axillary	N	2	1	3
	%	66.7%	33.3%	100.0%
Cervical	N	17	20	37
	%	45.9%	54.1%	100.0%
Cubital	N	1	0	1
	%	100.0%	.0%	100.0%
Inguinal	N	0	1	1
	%	.0%	100.0%	100.0%
Postauricular	N	1	0	1
	%	100.0%	.0%	100.0%
Subhyoid	N	0	1	1
	%	.0%	100.0%	100.0%
Submandibular	N	2	3	5
	%	40.0%	60.0%	100.0%
Submental	N	1	0	1
	%	100.0%	.0%	100.0%
Supraclavicular	N	0	1	1
	%	.0%	100.0%	100.0%
Total	N	24	27	51
	%	47.1%	52.9%	100.0%

Fisher's Exact F = 6.38, p=0.803.

Table 2: Age wise distribution of patients according to cytological diagnosis.

FNAC Diagnosis		Age group				Total
		0-20	21-40	41-60	>60	
Chronic nonspecific lymphadenitis	N	9	3	0	0	12
	%	75.0%	25.0%	0%	.0%	100.0%
Caseous tubercular lymphadenitis	N	1	0	0	0	1
	%	100.0%	0%	0%	.0%	100.0%
Granulomatous abscess	N	7	2	3	0	12
	%	58.3%	16.7%	25.0%	.0%	100.0%
Granulomatous lymphadenitis	N	1	1	1	0	3
	%	33.3%	33.3%	33.3%	.0%	100.0%
Lymphoproliferative disorder	N	0	0	0	1	1
	%	.0%	.0%	.0%	100.0%	100.0%
Metastatic carcinoma	N	0	0	1	1	2
	%	0%	0%	50.0%	50.0%	100.0%
Reactive lymphadenitis	N	4	4	1	0	9
	%	44.4%	44.4%	11.1%	.0%	100.0%
Tubercular lymphadenitis	N	4	6	1	0	11
	%	36.4%	54.5%	9.1%	.0%	100.0%
Total	**N**	**26**	**16**	**7**	**2**	**51**
	%	**51.0%**	**31.4%**	**13.7%**	**3.9%**	**100.0%**

Fisher's Exact F = 28.96, p=0.041.

Table 3: Gender wise distribution of patients according to cytological diagnosis.

FNAC diagnosis		Sex		Total
		Female	Male	
Chronic nonspecific lymphadenitis	N	3	9	12
	%	25.0%	75.0%	100.0%
Gaseous tubercular lymph lymphadenitis	N	1	0	1
	%	100.0%	.0%	100.0%
Granulomatous abscess	N	7	5	12
	%	58.3%	41.7%	100.0%
Granulomatous lymphodenitis	N	3	0	3
	%	100.0%	.0%	100.0%
Lymphoproliferative disorder	N	0	1	1
	%	.0%	100.0%	100.0%
Metastatic carcinoma	N	1	1	2
	%	50.0%	50.0%	100.0%
Reactive lymphadenitis	N	5	4	9
	%	55.6%	44.4%	100.0%
Tubercular lymphadenitis	N	4	7	11
	%	36.4%	63.6%	100.0%
Total	N	24	27	51
	%	47.1%	52.9%	100.0%

Fisher's Exact F = 8.78, p=0.212.

There was no significant association between FNAC diagnosis and gender (F=8.78, p=0.212) (Table 3).

DISCUSSION

FNAC is a simple, safe, reliable, rapid, and inexpensive method of establishing the diagnosis of lesions and masses in various sites and organs.[4] Lymph node aspiration is of great value in diagnosing lymphadenitis, lymphomas, and metastatic carcinoma. The value of FNAC also lies in the early direction of appropriate investigations, other than making the diagnosis. Out of the 51 patients, 27 (52.94) patients were males and 24 (47.06) were females leading to a M: F ratio of 1.125:1. Among the 51 cases of lymphadenopathy studied maximum number of case were seen in the first two decades of life (51.0%) followed by those aged between 21-40 years (31.4%). This is similar to the study done by Bharadwaj et al, where maximum number of cases were seen in 0-10 years age group.[5] In another study by Chawla N et al, a maximum incidence in the third decade of life was reported.[6]

The male to female ratio in our study is 1.125:1. Males also outnumbered females in the study done by Chawla et al.[6] A higher proportion of cases were diagnosed as chronic nonspecific lymphadenitis (23.5%) followed by granulomatous abscess (23.5%), tubercular lymphadenitis (21.6%) and reactive (17.6%). . Similar findings were observed by Kataria et al where 30.3% patients each were found to have abscess and chronic nonspecific reactive lymphadenitis and 24.25% patients had tuberculous lymphadenitis.[7] Our findings are also comparable to Bargotra et al who diagnosed nonspecific reactive lymphadenitis (42.8%) and tuberculous lymphadenitis (30%), metastasis (14.3%) by FNAC.[8] Higher prevalence (31.7%) of tuberculosis was reported in another study by Chawla N et al among lymphadenopathy patients diagnosed by FNAC.[9] We observed that the peak incidence of benign lesions was among those aged between 0-20 years while the peak incidence of malignant lesions was among those aged 40 years and above. This is comparable to the findings of Hafez et al who 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.[10] In the present study, out of total 51 cases, 2 cases (3.93%) were malignant and 49 cases (96.07%) were benign. Similar findings were observed in other studies.[11-13]

CONCLUSION

FNAC is a simple, useful and reliable procedure for diagnosis in patients with lymphadenopathy.

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Ethical approval: The study was approved by the institutional ethics committee

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