

ANALYSIS OF FNAC OF CERVICAL LYMPH NODES: EXPERIENCE OVER A TWO YEARS PERIOD

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ABSTRACT

Background: Cervical lymphadenopathy is a common clinical presentation across patients of all age group. The aetiology may range from a benign nonspecific inflammation to lymphoproliferative disorders and metastatic malignancy.

Aims & Objective: The present study was undertaken to study non neoplastic and neoplastic lesions of enlarged lymph nodes by Fine needle aspiration cytology (FNAC) in patients presenting with cervical lymphadenopathy referred to cytopathology department from the OPD/IPD of Civil Hospital, Ahmedabad over a period of two years (November 2011 to November 2013).

Materials and Methods: A total of 2018 patients were subjected to FNAC of cervical lymph nodes over two years period (November 2011 to November 2013). Since in 113 patients, either the aspirate was inadequate or the opinion equivocal, the remaining 1905 cases were analysed.

Results: Overall tuberculous lymphadenitis was the most common finding (898/1905, 46%), followed by reactive hyperplasia (624/1905, 33%). Malignant pathology accounted for 16% (306/1905) of cervical lymph node enlargement, most of which was due to metastatic squamous cell carcinoma (179/306, 58%).

Conclusion: FNAC is an excellent first line of investigation and when used with a proper combination of experience and diligence, it can efficiently help at arriving in exact diagnosis.

Key Words: FNAC; Cervical Lymph Nodes; Tuberculous; Squamous Cell Carcinoma

Introduction

Cervical lymphadenopathy is a common clinical presentation across patients of all age group. The aetiology may range from a benign nonspecific inflammation to lymphoproliferative disorders and metastatic malignancy. FNAC is widely used as first line investigation for the diagnosis of lymphadenopathy. This simple, easy and quick technique can diagnose reactive, infective and malignant conditions. Several studies in the past have documented the diagnostic accuracy of FNAC with reference to cervical lymphadenopathy among patients presenting to tertiary care institution to evaluate the diagnostic efficacy of FNAC and to dissect the catches in diagnosis.^[1-4]

Materials and Methods

This study was carried out over a period of two years (November 2011 to November 2013) at BJ Medical College, Ahmedabad a tertiary care institute in western India. A total of 2018 patients with cervical lymphadenopathy were subjected to FNAC using 22 G needle and a 10ml disposable syringe. The slides were both air dried and wet fixed in alcohol for May-Grunwald & Giemsa and Papanicolaou stain respectively. Documentation of age, sex, site, size, duration, involvement of other lymph nodes and other investigations were done. In 113 cases, either the material was inadequate or the cytological opinion was

equivocal. These cases were excluded from the study, hence only 1905 cases were available for analysis.

The cases were divided into following groups, viz.: (a) Reactive hyperplasia: Smears were very cellular, showing a polymorphous population of lymphoid cells and histiocytes. (b) Tuberculous lymphadenitis: showed epithelioid cell granulomas with or without caseous necrosis and giant cells. Smears showing only caseous necrotic material and lymphocytes were also grouped as tuberculous inflammation. (c) Metastatic malignancy: revealed malignant cells in clusters or scattered discretely along with other lymphoid cells. Metastatic carcinoma was subdivided (e.g. Squamous cell carcinoma, adenocarcinoma, etc.) according to cytological features. (d) Lymphoma: cases with a mixed cell population and the characteristic Reed-Sternberg giant cell were categorised as Hodgkin's lymphoma. Non - Hodgkin's lymphoma showed a monomorphous population of small lymphoid cells or lymphoblasts. (e) Miscellaneous group: showed features which conform to none of the above mentioned groups (e.g. Rosai Dorfmann disease).

Results

In this study 2018 patients were subjected to FNAC for cervical lymphadenopathy. Among these patients, in 71 cases, the aspirate was inadequate despite repeated

endeavors, and in 42 cases the opinion offered was equivocal. Hence these 113 cases were excluded from study and we proceeded to analyse the remaining 1905 cases.

The male:female ratio in this study was 1.3:1, the mean age of presentation being 30.9 years and 26.8 years for male and female patients respectively. The age at presentation ranged from 1.5 months to 70 years. We received the maximum number of patients (28.67%) in the 21-30 years age group, and the least (4.4%) in the >60 years age category (Table 1).

Reactive lymphoid hyperplasia was the most common finding (136/150; 90.6%) in children aged less than 10 years. Tuberculosis accounted for most of the cases (470/548; 85.77%) in the 21-30 years age bracket. As expected, the percentage of malignant cases rose steadily with age and accounted for 40.05% cases of cervical lymphadenopathy in patients more than 50 years of age. Malignant pathology accounted 16.06% cases of cervical lymphadenopathy (Table 1). Of these cases, metastatic squamous cell carcinoma topped the chart with 58.4% (179/306) cases as opposed to metastatic adenocarcinoma found in only 3% cases. Other than these, there were 3 cases of metastatic nasopharyngeal carcinoma (0.09%), 21 (6.08%) cases of Hodgkin's and 19 cases of (6.20%) Non - Hodgkin's lymphoma and a single case of metastatic malignant melanoma. Besides the above mentioned causes of lymph node affliction, we noted three cases of Kimura's disease, two cases of Rosai Dorfman disease (sinus histiocytosis with massive lymphadenopathy) and a single case of Kikuchi's disease. All 3 patients were less than 15 years of age. Malignant lesions were more in the >50 years age group whereas in all other age groups tuberculous lesions predominated.

Table-1: Age distribution of patients with cervical lymphadenopathy

Age Group	TB	Reactive Hyperplasia	Hodgkin's Lymphoma	NHL	Metastasis	Others	Total
<10	4	136	4	1	2	3	150
11-20	260	135		3	2	4	404
21-30	470	67		1		10	548
31-40	101	26	3	4	11	25	170
41-50	33	130	11	6	94	82	356
51-60	30	66	2	2	145	63	308
>60	0	64	1	2	12	5	84
Total	898	624	21	19	266	122	1905

Discussion

FNAC of cervical lymph nodes provides a great opportunity to explore the myriad lesions that involve these lymph nodes. Since infections from oral cavity, ears, nose, and para nasal sinuses drain into these nodes, reactive lymphoid hyperplasia is a common finding. However, in

this study tuberculous lymphadenitis emerged as commonest (898/1905, 46%) cause of cervical lymphadenopathy, followed by reactive hyperplasia (624/1905, 32.76%), and malignant causes (306/1905, 16.06%). This may be explained by the fact that in a developing country like ours, all cases of granulomatous lymphadenopathy were considered to be due to tuberculosis.^[4] Though the duration of protection of BCG vaccination is supposed to be 15-20 years, the high incidence of tuberculosis in patients less than 20 years of age is alarming. This corroborates with other studies that find a rising trend of extrapulmonary tuberculosis in BCG vaccinated children.^[5,6]

The incidence of reactive lymph node enlargement fell steadily the 6th decade onwards and malignant lesions took over. Hence the pressing need for FNAC of neck nodes is significant in the elderly that can provide an early clue to the diagnosis.^[7] Metastatic cutaneous/subcutaneous deposits can pose diagnostic hurdles in the absence of previous or simultaneous malignancy. FNAC is a quick and cost effective tool for the evaluation of such nodules.^[8]

FNAC aided by ultrasound with its high sensitivity and specificity is a useful initial investigation to differentiate lymphoma from metastasis. The ultrasonographic features found consistently useful in differentiating non-Hodgkin's lymphoma from other metastasis were the distribution of the nodes, distal enhancement and lack of infranodal necrosis.^[13] We noted two cases of Rosai Dorfman syndrome. It is a benign condition and a rare cause of cervical lymphadenopathy.^[14] It usually occurs in the first decade of life and manifest as massive enlargement of cervical lymph nodes. Extranodal involvement is rare.

Our single case of Kikuchi's disease was a 14-year old girl who presented with high fever, swelling in the neck, anorexia, weight loss and night sweating. Kikuchi-fujimoto disease, a rare clinicopathological entity, is a benign self-limiting disease, first described in 1972 by Kikuchi and Fujimoto in Japan independently. The disease is self-limiting and has excellent prognosis. Its recognition is crucial, because it can be mistaken for systemic lupus erythematosus, malignant lymphoma, tuberculous lymphadenitis or even metastatic adenocarcinoma.¹⁵ Awareness of clinicians or pathologists regarding the disease may help prevent misdiagnosis and inappropriate treatment.

Conclusion

The present study highlights the usefulness of Fine needle aspiration cytology that fulfilled the primary aim to help

the clinician in arriving at early diagnosis in cases presenting with cervical lymphadenopathy. It is also realised that FNAC not only offers tissue diagnosis but also serves as a preliminary screening procedure for number of clinical conditions e.g. Reactive and Tubercular Lymphadenitis, lymphoma and metastatic lesions. Exact early diagnosis can save the patient from high mortality and morbidity especially in malignant diseases.

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