

Original Research Article


Role of FNAC in head and neck region lymphadenopathy - A tertiary care centre experience

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Abstract

Background: FNAC (Fine Needle Aspiration Cytology) is a well accepted technique and plays an important role in early diagnosis of head and neck lesions. It is a safe and inexpensive outdoor procedure.

Materials and methods: This study was carried out over a period of 9 months (January 2021 to September 2021). A total of 60 patients with head and neck lymphadenopathy were subjected to FNAC at a tertiary care centre in Vadodara, Gujarat. All reports were recorded and data was entered and analyzed using Microsoft excel.

Results: In the present study, the various causes of head and neck lymphadenopathy were classified according to cytomorphological patterns. Among the diagnostic outcome, overall prevalence of granulomatous lymphadenitis was 35% (21 cases), reactive hyperplasia was 26.67% (16 cases), secondary metastases were 18.33% (11 cases), lymphoma was 10% (6 cases) and acute non-specific lymphadenitis was 10% (6 cases).

Conclusion: FNAC is simple, quick, inexpensive and safe diagnostic procedure which also is an useful adjunct to histopathology.

Key words

FNAC, Lymph nodes, Head and neck, Granulomatous lymphadenitis.

Introduction

Lesions of the head and neck region are routinely encountered by clinicians, in patients across all age groups and diagnosis range from reactive hyperplasia of lymph nodes to malignancies. FNAC of head and neck region lymph nodes provides a great opportunity to explore the myriad lesions that involve these lymph nodes. Fine needle aspiration in the investigation of lymphadenopathy has become a standard and frequently practiced technique and it is cheap and accurate first line of investigation in lymphadenopathy [1]. FNAC is a simple, quick and reliable procedure which can be used as a routine outdoor patient department (OPD) procedure for diagnosis of lymphadenopathy [2]. FNAC is also widely used in the head and neck regions, such as in the thyroid, lymph nodes, major salivary glands, and other neoplasias [3-7]. In the head and neck regions, FNAC is of great value because of the multiplicity of accessible organs and heterogeneous pathologies encountered. An early differentiation of benign from malignant pathology greatly influences the treatment plan [8]. The present study was undertaken to assess the utility of FNAC in diagnosis of head and neck lymphadenopathy and to establish the diagnostic accuracy of cytology by comparing with the histopathological diagnosis, in as many cases as possible.

Materials and methods

This study was carried out at a tertiary care centre in Vadodara, Gujarat over a period of 9 months (January 2021 to September 2021). A total of 60 patients with head and neck lymphadenopathy were subjected to FNAC. The palpable lymph node was fixed with one hand and the skin was sterilized and 23-25 gauge -1.5 cm long, needle with 10 ml syringe was inserted into the lymph node and a full suction pressure was applied. The tip of the needle was moved around and to and fro. The pressure was neutralized and the needle was withdrawn. The aspirated material was placed on the glass slides. The slides were then stained with hematoxylin-

eosin, Giemsa and Papanicolaou stains [9-14]. The smears were reported by pathologist. Data was collected and analyzed statistically and presented in tabular format.

Results

In the present study, a total of 60 patients presented with head and neck lymphadenopathy that were clinically assessed and investigated by FNAC. FNAC was found to be convenient and safe test without any complication. Among 60 patients, highest number of patients 22 (36.66%) were between 31-40 years of age group and 35 were males and 25 were females with male to female ratio of 1.4 (**Table – 1**). The various causes of head and neck lymphadenopathy were classified according to cytomorphological patterns (**Table – 2**). Granulomatous lymphadenitis was more common in age group of 21-30 years (35.71%) while metastatic malignant lesions were more common in 41-50 years (20%) (**Figure - 1, 2**).

Granulomatous lymphadenitis and lymphoma were more common among the females, while reactive hyperplasia and secondary metastatic lesions in cervical lymph nodes were more common among males. Among the diagnostic outcome, overall prevalence of Granulomatous lymphadenitis was 35% (21 cases), reactive hyperplasia was 26.67% (16 cases), secondary metastases were 18.33% (11 cases), lymphoma was 10% (6 cases) and acute non-specific lymphadenitis was 10% (6 cases).

Figure – 1: Cellular and granulomatous lesion from cervical lymph node (10 X, H&E Stain).

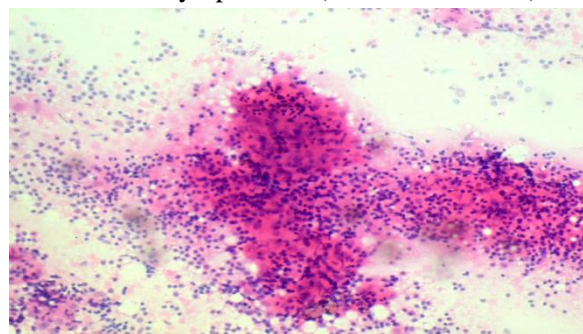
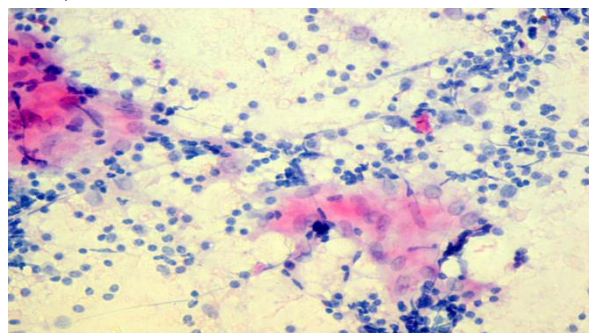


Figure – 2: Smear with epithelioid cells in granulomatous lymphadenitis (40 X, H&E Stain).



histopathological correlation wherever possible were evaluated by us and the findings compared with other studies.

In this study, FNAC was performed in swellings of the head and neck regions of the 60 patients. All procedures performed in this study were done in an outpatient clinic basis executed by resident doctor of pathology department. The procedure was performed without complication as per the standardized operating procedures [15]. The complications of this procedure may be bleeding, infection, nerve injury, swelling, and bruising of the area in aspiration and the inability to obtain a sufficient amount of material for the cytological analysis, which interfered with the interpretation by the pathologist. Lesions with high blood content, presence of necrosis and fibers with scattered atypical cells also proved difficult to analyze cytologically. There was presence of a pathologist at the time of sample collection, as well as during the staining for the interpretation. This can, therefore, help to minimize the rate of inconclusive cases. Maximum number of cases in present study was recorded in the age group of which the procedure was performed. We noted that in fibrous lesions, there was difficulty with 31- 40 years, which is comparable with those of other studies by P. Bhargav, et al. [16] and S. Rajshekaran, et al. [17]. In these studies, maximum cases of granulomatous lymphadenitis were found in this age group which is also true for our study [18, 19]. In the study performed by Bhattacharya, et al. [18], FNAC was found to be very useful adjunct in the diagnosis of Granulomatous lymphadenitis which can be made by the demonstration of epithelioid granuloma (with or without caseation) even in the absence of acid fast bacilli (AFB) [18]. In our study, the incidence of reactive lymph node enlargement fell steadily as the age is increasing and malignant lesions took over. Hence, the pressing need for FNAC of neck node is significant in the elderly that can provide an early clue to the diagnosis. Reactive nodes were mostly small and less than 1 cm in size in 80% cases whereas granulomatous and malignant nodes were larger and over 1 cm in size in 84.8%

Table – 1: Age and sex distribution of cases.

Age group (Years)	Number of cases		Total	%
	Male	Female		
<10	4	3	7	11.67
11-20	4	2	6	10
21-30	6	6	12	20
31-40	13	9	22	36.66
41-50	5	2	7	11.67
51-60	3	2	5	8.33
>60	0	1	1	1.67
Total	35	25	60	100

Table – 2: Distribution of causes of lymphadenopathy according to FNAC findings.

FNAC findings	No of cases	%
Reactive hyperplasia	16	26.67
Acute non-specific lymphadenitis	6	10
Granulomatous lymphadenitis	21	35
Metastatic tumors	11	18.33
Lymphoma (Hodgkin's and non-Hodgkin's)	06	10
Total	60	100

Discussion

FNAC is a valuable diagnostic test in the initial assessment of the patients presenting with a mass in the head and neck region or when a recurrence is suspected after previous treatment. Various parameters like age distribution, sex predilection, site wise distribution, nature of the lesion and

and 83.1% cases respectively [19]. In metastatic lesions, FNAC is not only helpful to detect the lesion but also gives clue to the clinician about the primary tumor. Metastasis of unknown origin (MUO) is a clinical diagnostic challenge and often manifest as cervical lymphadenopathy [20]. Diagnostic accuracy of metastatic carcinoma found in this study is comparable with other studies [21, 22]. The diagnostic accuracy of FNAC in cases of lymphoma is variable, but accuracy increases in higher grade lesions [23, 24].

Conclusion

FNAC stands as a rapid, convenient and accurate outpatient method of diagnosis of accessible lesions especially of the head and neck, besides being safe and relatively free from complications. Cytological findings help in differentiating benign from malignant lesions and are an essential tool in planning treatment of the patient. FNAC serves as a complementary diagnostic procedure to histopathological examination. It also helps as a guide to the appropriate therapeutic management to either locally excise a benign tumor or plan radical surgery or other alternative treatment modalities in case of malignancy. Hence, we conclude that FNAC is an excellent preliminary test and a useful adjunct to histopathology.

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