



FNAC OF ORAL AND OROPHARYNGEAL MASS – A STUDY IN A TERTIARY CARE HOSPITAL

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Article Received on 05/03/2018

Article Revised on 25/03/2018

Article Accepted on 16/04/2018

ABSTRACT

Fine needle aspiration cytology (FNAC) is a procedure to obtain cells and tissue fragments through a needle introduced into abnormal tissue or mass and its cytological study⁽¹⁾. It was first introduced in 1930 by Martin, Ellis and Stewart. Oral and oropharyngeal mass lesions are commonly diagnosed by biopsy. But FNAC is a less invasive, less traumatic and cheap method for diagnosis of such lesions. Present study was done to know prevalence of different lesion in oral and oropharyngeal lesion and effectiveness of FNAC in their diagnosis. This study was conducted in the tertiary care hospital in Lucknow over a period of two years. A total of 56 cases were studied. Most of the samples were found adequate. Males were more commonly involved than females and Squamous cell carcinoma was most prevalent lesion diagnosed in our study. FNAC was very accurate and diagnostic in almost all cases without any major complication to the patients.

KEYWORD: Fine needle aspiration cytology, Oral & oropharyngeal mass, Prevalence of lesions.

1. INTRODUCTION

FNAC technique was first introduced in 1930 by Martin, Ellis and Stewart as a procedure to obtain cells from mass lesions^[1,2] and has been used sporadically since last century but has been popularized over the last half century mainly as a result of work of Zajicek & Franzen in Sweden.^[3] The test is simple and results are more rapidly available than routine histopathology. The procedure is cost effective and reduces hospital bed occupancy. The clinical value of FNAC is not limited to neoplastic conditions but is also valuable in diagnosis of inflammatory conditions, infections and degenerative conditions^[4] and sample can also be used for microbiological and biochemical analysis in addition to cytological preparation.^[5] Oral and oropharyngeal mass lesions mainly include squamous cell carcinoma, lymphoma, pleomorphic adenoma, tubercular granuloma, ranula, ameloblastoma.^[6,7,8] Traditional biopsy techniques in oral cavity may require anaesthesia and may have diagnostic difficulties particularly for transmucosal lesions. FNAC overcomes these difficulties by providing a less invasive means to fast diagnosis of lesions inside mouth and oral cavity.^[9]

2. MATERIALS AND METHODS

This study was conducted in the tertiary care hospital in Lucknow over a period of two years including total 56

cases that presented with the mass lesion in the oral cavity and were sent to department of pathology for FNAC. The procedure was well explained to patients and due consents were taken from all of them. Patients received topical anaesthesia in form of lignocaine spray. The sample was taken with patients in a supine position with head supported. Visibility was enhanced by using a head mirror. Aspiration was performed with 22 gauge needle attached to a 20ml disposable syringe. The needle was introduced into the target and suction was applied by retracting the syringe plunger to the 1-2 ml mark. The needle moved back and forth four to five times in same plane to ensure minimal bleeding. Aspiration was taken from proliferative or ulcero-proliferative lesions. Smears were air-dried; methanol fixed and May-Grunwald Giemsa (MGG) stained. After staining smears were seen under microscope. The aspirates were considered adequate if the cellular elements were sufficient for rendering diagnosis. Smears with scant cellularity, which were not sufficient to make a precise diagnosis were categorised as inadequate.

2.1 Staining

May-Grunwald Giemsa

Air dried, methanol fixed smears were taken and stained by following method.

- Buffered water was made by adding M/15 Phosphate buffer (pH 6.8) in ratio of 1:20 with distilled water.
- May-Grunwald stain, working solution was prepared by mixing stock solution with equal volume of buffered water.
- Giemsa stain was prepared by mixing stock solution and buffered water in the ratio of 1:9.
- Smears were then covered by working solution of May-Grunwald stain for 5 minutes.
- Stain was allowed to drain by tilting the slide.
- The smears were then covered by working Giemsa stain for 10 minutes.
- Smears then washed with buffered water, making sure that no deposits were left.
- Smears were dried and mounted by DPX mountant and cover slip.

RESULTS AND DISCUSSION

Present study had subjects ranging from 2-80 years. Study by Gupta N et al and Mondal et al also found similar age group involvement in their study.^[10,11] Maximum number of cases fell between 31-40 years and 51-60 years i.e. 23.2% each group. Minimum numbers of cases were from age range 0-10years, 11-20 years, 71-80 years i.e. 3.6% each group. It inferred that maximum cases were between 3rd and 5th decade of life. Males were more prone to oral and oropharyngeal mass lesions according to present study with 80.4% and females accounted for only 19.6%. As oral malignancy is a major problem in India and accounts for 50 to 70 percent of all cancers diagnosed malignancy among males. Similarly studies done by Singh D et al and Sakarwall N also found male were more frequently involved than females.^[9,12] It may be due to smoking and tobacco chewing habits of Indian males. 54 out of 56 (96.4%) aspirates were sufficient for rendering diagnosis. 2 out of 56 cases (3.6%) were inadequate for diagnosis due to

paucity of material and excessive haemorrhage. These findings also correlate with results obtained by Sakarwall N et al in year 2015. Majority of cases i.e. 34 out of 56 were squamous cell carcinoma (60.9%) and 32 of them were male. Besides that wide range of lesions (14 others) were encountered in oral and oropharynx region. Squamous cell carcinoma was most common malignant and over all common lesion in oral and oropharyngeal region in almost all studies done before.^[13, 14, 15] Pleomorphic adenoma was the most common benign lesion encountered in the present study.

Table 1: Distribution of cases according to age.

S. No.	Age group (in yrs)	No. of cases	Percentage (%)
1	0 – 10	02	3.6
2	11 – 20	02	3.6
3	21 – 30	09	16.1
4	31 – 40	13	23.2
5	41 – 50	12	21.4
6	51 – 60	13	23.2
7	61 – 70	03	5.3
8	71 – 80	02	3.6
Total		56	100

Table 2: Distribution according to gender.

S. No.	Gender	No. of cases	Percentage (%)
1	Male	45	80.4
2	Female	11	19.6
Total		56	100

Table 3: Distribution according to adequacy.

S. No.	Adequacy	No. of cases	Percentage (%)
1	Adequate	54	96.4
2	Inadequate	2	3.6
Total		56	100

Table 4: Distribution of different lesion on cytology in oral cavity and oropharynx.

S. No.	Lesions	No. of cases	Percentage (%)
1	Squamous cell carcinoma	34	60.9
2	Small cell carcinoma	01	1.7
3	Spindle cell carcinoma	01	1.7
4	Malignant spindle cell neoplasm	01	1.7
5	Large cell NHL	02	3.5
6	Undifferentiated carcinoma	01	1.7
7	Paraganglioma	02	3.5
8	Giant cell granuloma	02	3.5
9	Tuberculosis	01	1.7
10	Mucocele	01	1.7
11	Acute/ subacute inflammation	01	1.7
12	Hematoma/ hemangioma	01	1.7
13	Pleomorphic adenoma	03	5.3
14	Mucoepidermoid carcinoma	02	3.5
15	Dedifferentiated PLGA	01	1.7
16	Inadequate	02	3.5
Total		56	100

NHL- Non Hodgkin's Lymphoma, PLGA- Polymorphous low grade adenocarcinoma

CONCLUSION

FNAC serves as an important tool to screen and diagnose oral and oropharyngeal mass lesions and provides sufficient information for the initiation of treatment without need for an open biopsy in most cases. Awareness of cytological findings goes a long way in classifying most of these lesions. Thus FNAC is quite useful in the evaluation of oral and oropharyngeal mass lesions.

ACKNOWLEDGEMENT: None.

CONFLICT OF INTEREST: None.

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