



ORIGINAL RESEARCH PAPER

Medical Science

VARIETY OF NON-NEOPLASTIC AND BENIGN SWELLINGS IN NECK AND IMPORTANCE OF FINE NEEDLE ASPIRATION IN DIAGNOSIS

**KEY WORDS:** Fine needle aspiration, Lymph node, Salivary Gland, Tuberculosis

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ABSTRACT

**Aim and objective:** Importance of FNAC in diagnosing non-neoplastic and benign neck lesions.  
**Material and methods:** This retrospective study was done in our laboratory from 1/1/2015 to 31/12/2016 in patients having swelling in head and neck region. Total cases were evaluated in the cytopathology section and aspiration was done using 10ml syringe and 22-23 gauge needles.  
**Results:** Cytodiagnostic yield was 90% while in only 10% cases, no diagnosis was given. Lymph node lesions were most common with granulomatous/tuberculous lesions being the commonest variety. In salivary gland lesions Pleomorphic adenoma were commonest. Other common lesions were lipomas.  
**Conclusion:** FNAC provides a reliable, cost effective, convenient, easily accessible and non-traumatic method as the best initial work up and management of swellings of sensitive head and neck region.

Introduction

FNA was first introduced by Martin & Ellis (1930).<sup>[1]</sup> Any superficial organ or tissue can be sampled through this procedure. Easily targeted organs include thyroid, breast, or lymph nodes. Whereas deep organs like lungs, liver, kidney, mediastinum, and retroperitoneum are aspirated with the guidance of ultrasound or computed tomography, swellings in head and neck region can arise from various structures like, lymph node, salivary gland, thyroid, soft tissues, vessels and nerves and being easily accessible. FNAC is now a prerequisite for various neck swellings as the procedure is non-traumatic, easily accessible.<sup>[2,3]</sup> FNAC has been found to be highly accurate in head and neck region in various studies.<sup>[5, 6, 7, 8, 9]</sup> FNAC can easily differentiate non neoplastic conditions from neoplastic conditions thus eliminating the need for surgical intervention. The objective of our study is to find the spectrum of non-neoplastic lesions in this wide and sensitive area.

Material and methods

The target population of the study was the patients that presented as neck swellings. The aspiration was performed by using 10 ml syringe and 22-23 gauge needle. After convincing the patient and taking written and informed consent for the procedure, detailed clinical history was taken and the area of interest was properly exposed. The mass was first cleaned using betadine and spirit, fixed between index finger and thumb and then needle was introduced. To and fro motion was performed along with continuous negative pressure. After that the pressure was released and needle was withdrawn. Repeat aspirations were performed in some cases where aspirate was poor. For cystic lesions, cyst content was aspirated and smears were prepared after cytocentrifugation. Air dried smears were stained with Giemsa stain and smears fixed in 95% alcohol were stained with Papanicolaou and haematoxylin and eosin.

Results

Total 159 cases were of head and neck. 90% aspirations were satisfactory. In satisfactory smears, maximum numbers of cases were of lymph node region, second common site was that of salivary gland and remaining cases were of other sites including neck, maxillary region. Results are depicted in following tables (table I, II, III).

Discussion

Fine Needle Aspiration Cytology is a procedure where by small amount of tissue or cells are aspirated from a pathological lesion with the help of 10ml disposable syringe attached to 22 or 23 gauge needle. The procedure also provides guidance for clinical workup of patients. This procedure can easily distinguish between non-neoplastic and neoplastic conditions and can diagnose conditions like tuberculosis and reactive lymph node from malignant and metastasis.<sup>[3,4]</sup> Also, this is a procedure which can easily be performed at peripheral health care center. The reliability of the method has been shown in several studies.<sup>[5,6,7,8,9,10]</sup>

A well trained experienced individual can easily perform and therefore FNAC has gained universal acceptance as in most instances it is inexpensive, safe, quick and accurate. The spectrum of lesion observed in our study from the various regions in head and neck confirms its importance as an effective tool in the diagnostic Work up of this area. Various factors affect the accuracy of cytological diagnosis including the experience of aspirator, sampling method, the adequacy of sample and others. The false positive diagnosis is rarely made by experienced and well trained individuals. The cytologist may make a certain false negative diagnosis. The false negative and false positives are pointers towards limitations and pitfalls in cytological interpretation of the material.

The cyto-diagnostic yield was 90% and in 10% of cases no diagnosis could be made because either the material was unsatisfactory due to very small size of swelling or not representative of the concerned area.<sup>[11,12]</sup> The normal range for non-diagnostic smears in lymphoid lesions is less than 10-15%.<sup>[13]</sup> The spectrum of lymph node lesions in this study showed maximum cases of granulomatous/tuberculous lesions 65 cases. (Table 1) This may be due to higher incidence of tuberculosis. This was very similar to the result of study on western population by Lawrence and the Indian study by Gupta et al.<sup>[14,15]</sup> The Salivary Gland lesions were the least within a total of 14 cases which included sialadenitis, sialadenosis, cysts and pleomorphic adenoma. In other lesions, epidermal cysts were commonest lesion. Lipomas constituted as most common benign tumours followed by other benign soft tissue lesions.

Table 1

Lymph-node	Number of cases
Granulomatous/Tuberculosis	65
Chronic Reactive Hyperplasia	34

Table 2

Salivary Gland	Number of cases
Non neoplastic conditions	Number of cases
Sialadenosis	3
Sialadenitis	2
Mucous retention cyst	1
Cystic lesion	1
Neoplastic conditions	
Pleomorphic Adenoma	7

Table 3

Other lesions	Number of cases
Non neoplastic conditions	Number of cases
Epidermal cysts	20
Abscess	8
Cystic Lesion	5
Benign conditions	
Lipomas	12

Lipomas	12
skin adnexal tumour	1

**Conclusion**

In spite of the limitations and pitfalls, FNAC provides a reliable, cost effective, convenient, easily accessible, non-traumatic and highly accurate method as the best initial work up and management of swellings of head and neck region. Limitations and Pitfalls

False positive aspirations may be due to regenerative changes, metaplasia and various other factors while false negative aspirations may be due to wrong technique, cystic areas, haemorrhage, and necrosis containing no viable diagnostic cells, small foci of neoplastic lesion nearby large reactive non-neoplastic mass and fibrotic lesions.

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