



EVALUATION OF NECK MASSES WITH FINE NEEDLE ASPIRATION CYTOLOGY (FNAC) IN A TERTIARY CARE SETTING.

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ABSTRACT

BACKGROUND: Fine needle aspiration cytology (FNAC) plays an important role in investigation of neck masses. The objective of our study was to describe ratio of different neck pathologies in our setup with the help of FNAC.

METHODS: This is a study of 215 cases with FNAC performed from February 2014 till august 2016 at MGM Medical College & associated M.Y. Hospital, Indore, India.

RESULTS: Out of 215 patients with FNAC 204 patients had a conclusive result (94.8% diagnostic yield). Inflammatory lesions (58.5%) are the common pathology followed by benign lesions (26.8%) and malignant lesions (14.7%). 5.2 % had inconclusive results on FNAC due to inadequate sample and dry taps. Excision and incision biopsy had 100% tissue diagnostic yield with 33.5% were reactive lymphadenopathy followed by tubercular lymphadenitis which were 21.1%, 17.2% were metastatic cancer, 14.1% were thyroid lesions of which goiter was the most common, 9.4% were cystic swellings and 4.7% were salivary gland lesions including sialadenitis. In this study overall accuracy rate of FNAC was 94.06% with sensitivity of 88.64%, specificity of 94.82%, and positive predictive value of 92% and negative predictive value of 90.92%.

CONCLUSION: Nonspecific reactive lymphadenopathy and tuberculous lymphadenitis were most common condition in patients presenting with neck swellings in our setup, followed by malignant neoplasms. FNAC is an easy and suitable investigation tool for the primary assessment of patients with neck swellings on OPD basis. Its diagnostic accuracy is variable and depends on multiple factors as compared to excision/incision tissue biopsy but still it is a good primary

KEYWORDS : Neck Swellings, Tissue Biopsy, Fine Needle Aspiration Cytology (FNAC)

INTRODUCTION:

Surgeons frequently encounter neck masses as common clinical neck problem. Some of the common pathologies in the neck presenting as a lump are lymphadenopathies, metastatic carcinoma, lymphoma, thyroid and salivary gland swellings. Some less common pathologies are cystic hygroma, bronchial cyst, carotid body tumour, thyroglossal cyst, pharyngeal pouch and skin appendages lumps. [1]

With the help of FNAC proper assessment of the cells aspirated from the swellings can be done. But there is limitation in the form that it does not allow morphological evaluation of the lesion.

False-positive & False-negative results can occur in FNAC thus a definitive diagnosis is necessary for cases with clinical suspicion. Still FNAC has minimal patient trauma and complication rate and is a simple investigation tool. Rapid availability of results as compared to biopsy is there and the cost of the procedure is significantly lower. Hence FNAC is a valuable diagnostic tool and serves as a recommended first line investigation of most of the neck swellings. The objective of our study was to describe ratio of different neck pathologies in our setup with the help of FNAC.

MATERIAL AND METHODS:

This study was conducted from February 2014 till august 2016 at MGM Medical College & Associated MY Hospital, Indore, India. A total of 215 cases were recruited for the study. Fine Needle Aspiration Cytology was performed in all the cases. Immediately Slides were made and evaluation of cytology was done in department of pathology. Patients having other mass than neck masses were excluded from the study. 22–25 gauge, 10ml or 20ml disposable plastic syringe was used as apparatus. The data analysis was performed using SPSS version 20.

RESULTS: The study included 215 patients with neck swellings. There were 129 (60 %) female and 86(40 %) male patients with an age range of 11–69 years. Out of 215 patients with FNAC, 204 patients had a conclusive result (94.8% diagnostic yield).

The most common pathology were Inflammatory lesions (58.5%) followed by benign lesions (26.8%) and malignant lesions (14.7%). 5.2 % had inconclusive results on FNAC due to dry taps and inadequate sample. Excision and incision biopsy had 100% tissue diagnostic yield with 33.5% were reactive lymphadenopathy followed by tubercular lymphadenitis which were 21.1 %, 17.2% were metastatic cancer, 14.1% were thyroid lesions of which goiter was the most common, 9.4% were cystic swellings and 4.7% were salivary gland lesions.

In this study overall accuracy rate of FNAC was 94.06% with sensitivity of 88.6%, specificity of 94.8%, and positive predictive value of 92 % and negative predictive value of 90.9%.

Table 1: Distribution by site

SITE	Cases Number	Percentage %
Lymph Node	158	73.2
Thyroid	32	15.3
Salivary gland	13	5.9
Miscellaneous	12	5.6

Table 2 Distribution of various lesions

Neck Lesion	Cases Number	Percentage %
Reactive lymphadenitis	73	33.5
Tubercular lymphadenitis	45	21.1
Goiter	30	14.1
Metastasis	37	17.2
Sialadenitis	10	4.7
Cystic lesion	20	9.4

DISCUSSION:

Clinicians face challenging diagnostic problem in cases of Head and neck masses. Neck mass is often the first or the only symptom of malignancy which remains an important differential diagnosis. Surgical biopsy, although is the commonest method of tissue diagnosis, However FNAC is in practice since 1930s. This method has emerged as a popular diagnostic step in the evaluation of a head

and neck mass.[2] In index study Reactive lymphadenitis were observed in 33.5% of the cases. Reactive lymphadenopathy may occur purely as non-specific response or as part of specific disease. Results were comparable to the study done by Ahmad et al.[3] Tubercular/granulomatous lymphadenitis was found in 21.1 % cases which was comparable to the study carried out by previous researchers[4,5] A similar study in Saudi Arabia which included 225 patients over 5 years reported reactive/nonspecific lymphadenitis to be the commonest cause of neck masses accounting for 33% of cases. Tuberculous lymphadenitis was found to be the next most common pathology constituting 21% of cases followed by malignant swellings found in 13% of cases.

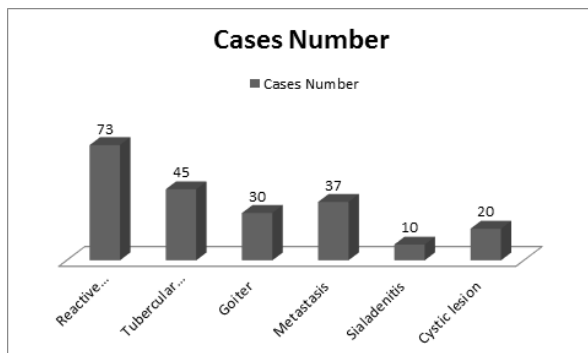
Previous research have shown the importance of the quality of cytological preparation besides the representativeness of the aspirate especially in the diagnosis of reactive lymphadenitis and in the diagnosis and classification of Lymphomas.[6] There is a rising worldwide incidence of cutaneous SCC and it is likely that clinicians may also face regional nodal metastases of this type of skin cancer in the parotid gland and the upper levels of the neck. Thus, high risk areas such as ear and scalp should be examined thoroughly. On finding neck nodes in levels Va and Vb, examination of the skin of the neck and torso should be done as well. Merkel cell carcinoma is another cutaneous aggressive malignancy of which half of the cases presents primarily in the head and neck with a high propensity for neck node metastases.[7] FNAC is a safer choice for initial evaluation of masses suspicious of malignancy as the frequency of needle seeding of tumor cells in the procedure is reported as low as 0.003-0.009%.[8] Thus, tumor risk in FNAC is almost nonexistent in comparison to excision biopsy, considering this range. To avoid or minimize false positive results various factors including metaplasia, regenerative changes, and others should be considered during reporting.

False negative results may be due to cystic change, necrotic and hemorrhagic areas revealing no diagnostic cellular yield.[9] Any technique speeding up the diagnostic process, limiting the trauma to the patient, and saving the expenditure, will be of tremendous value. Surgeons may also be helped to select, guide, and modify surgical planning in patients requiring surgery.[10]

CONCLUSION:

Reactive lymphadenopathy and tuberculous lymphadenitis are still the most common condition in patients presenting with neck swellings in our setup, followed by malignant neoplasms especially metastatic squamous cell carcinoma. FNAC is an easy and suitable investigation tool for the primary assessment of patients with neck swellings. Its diagnostic accuracy is variable and depends on multiple factors as compared to excision/incision tissue biopsy but still it is a good primary investigation keeping in mind its advantages.

Distribution of various lesions



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