

Original Article

Role of FNAC in Non-Metastatic Non Hormonal Neck swellings

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ABSTRACT

Background: Neck swelling is one of the common symptoms of a patient coming in ENT department. They require proper evaluation and they could present diagnostic challenge. FNAC is widely acceptable and recognized technique in the diagnosis of head and neck swelling.

Aims: The aims of this study are to establish the role of FNAC in benign, non-metastatic, non-hormonal swelling and to determine its accuracy and comparison with HPE (histopathology examination).

Material: It is a prospective study of 50 cases that came to ENT department at P.D.U medical college Rajkot. All the patients of neck swelling undergone FNAC after proper clinical evaluation.

Results: In this study there were 28 female and 22 male patients with age range of 8-60 years. In our study sensitivity of FNAC was 75% while specificity was 96%. In this study benign lesion of neck was found in 48% which includes pleomorphic adenoma and cystic lesion. Infective etiological factor remain second cause and constitutes for 38% which includes tuberculosis Lymphadenitis, reactive lymphadenitis and siladenitis. Malignant neoplasms constitute 14% which is of primarily origin in the neck includes lymphoma, salivary gland tumors and idiopathic etiology.

Conclusion: It is concluded that in this study benign etiological lesions remain first followed by infective and malignant. We conclude that FNAC is safe, easily available and accurate technique, well suited to all neck masses of different causes. It could differentiate benign and malignant lesions very effectively and at very early stage helping us for the management of the patients.

Key words: FNAC [fine needle aspiration cytology], neck swelling, metastasis

INTRODUCTION

The differential diagnosis of neck swelling covers broad spectrum of diseases with its different means of management. FNAC has become standard for making treatment decision and confirming clinical diagnosis. FNAC is minimally invasive diagnostic method, smear evaluation is immediate, safe, less time consuming, can be repeated to obtain specific detailed diagnosis. After the FNAC, it helps the clinicians to discuss the plan of management to the patient.

MATERIAL AND METHODS

The prospective study was carried out in otorhinolaryngology and head and neck surgery department at P.D.U medical college- Rajkot, from April 2012 to March 2013. Total of 50 patients were enrolled in the study who presented with chief complain of neck swelling, irrespective of sex, occupation and socioeconomic status. All the

patients were undergone to detailed history, general examination and through clinical ENT examination. Inclusion criteria- Patients having neck swelling which was clinically found to be non-metastatic and non-hormonal origin.

Exclusion criteria- Patients with proven thyroid and metastatic lesions, burst opened abscess, terminally ill were excluded from this study.

Procedure

FNAC procedure is usually carried out with the patient lying supine on an examination couch in such a way there is easy access from either side. The skin was cleaned with antiseptic solution and the tumor mass was immobilized with thumb and fingers of one hand, then 22-23 gauge needle, which is attached to disposable syringes was thrust into neck swellings, when the thumb was reached, the plunger of the syringe was drawn out, thus creating a negative pressure in syringe and needle lumen. The needle was moved back and forth

several times and moved in different directions so as to collect sample from different areas around. Then the plunger was slowly released up to equalize the pressure in the syringe, the needle was then withdrawn. The syringe was then disconnected from the needle, filled with air and reconnected. The contents of the needle were then carefully taken on to clean slide and smears of adequate density were prepared by giving a gentle pressure with the flat surface of another side. The smear were immediately fixed with 90% ethyl alcohol and dried and stained with Haematoxyline and eosin stain and mounted in D.P.X. and then seen under the light microscope.

From each patient 5 to 7 slides prepared. Patients with inconclusive report with FNAC on 1st attempt had undergone 2nd attempt to reach diagnosis. After the FNAC report arrived, clinical judgment was taken whether to manage medically or surgically. Those cases which had been managed surgically, their specimen was sent for histopathological examinations. Comparison between FNAC reports and HPE reports done on the basis of the accuracy, sensitivity and specificity of FNAC were calculated.

The study was aimed to find out diagnostic accuracy of FNAC and comparison with Histopathology examinations, to find sex distribution and to know the common etiology of non-metastatic non-hormonal neck swellings.

RESULTS AND DISCUSSION

In our study there were 28 female (56%) and 22 males (44%). The patients were between 8-60 years of age group.

In majority of the non-metastatic non-hormonal neck swellings etiology was the benign lesions 48%(n=24), which consist of pleomorphic adenoma 26%(n=13), Dermoid 10%(n=5), Thyroglossal cyst 6% (n=3), Lipoma 4%(n=2), Branchial cyst 2% (n=1) (table 1).

Second most common etiology was infective lesions 38% (n=19), which consist of tuberculosis lymphadenitis 14% (n=7), reactive lymphadenitis 12% (n=6), Sialadenitis 12% (n=6%) (Table 1).

Primary malignant lesion of neck was found in 14% (n=7), which consist of lymphoma 6% (n=3), Adenocystic carcinoma 2% (n=1), synovial sarcoma 2% (n=1), spindle cell carcinoma 2% (n=1), Mucoepidermoid carcinoma 2% (n=1) (table 1).

Overall the most common diagnosis in non-metastatic non-hormonal neck swelling was pleomorphic adenoma of salivary glands, tuberculosis lymphadenitis, reactive lymphadenitis and Sialadenitis, 26%, 14%, 12% and 12% respectively (table 1). Salivary gland plays a major role in non-metastatic non-hormonal neck swellings total 38% which includes pleomorphic adenoma 26% and Sialadenitis 12% (table 1).

Out of 50 cases, 28 (56%) cases were undergone for surgical treatment in which histopathological examinations was done and compared with FNAC results.

FNAC results of 2 cases were changed after the histopathology report. Histopathological report was compared with cytology report and the rate of true positive, false positive, true negative and false negative were calculated. In our study sensitivity of FNAC was 75% while specificity was 96%. (Table 2) The result suggested that FNAC alone may not be sufficient in some cases to rule out final diagnosis.

Table 1: Results of FNAC of neck swelling (n=50)

Etiology	Diagnosis	No. of Cases (%)	Treatment
Benign lesions 24(48%)	Pleomorphic adenoma	13 (26%)	Surgical resection (comparison of HPE and FNAC done)
	Dermoid	5 (10%)	
	Lipoma	2 (4%)	
	Thyroglossal	3 (6%)	
	Branchial cyst	1 (2%)	
Infective lesions 19(38%)	Tuberculous lymphadenitis	7 (14%)	Referred to TBCD dept.
	Reactive lymphadenitis	6 (12%)	Conservative Management
	Sialadenitis	6 (12%)	
Malignant lesions 7(14%)	Lymphoma	3 (6%)	Referred to Oncologist
	Adenocystic carcinoma	1 (2%)	Surgical resection (comparison of HPE and FNAC done)
	Synovial sarcoma	1 (2%)	
	Mucoepidermoid Carcinoma	1 (2%)	
	Spindle cell carcinoma	1 (2%)	

Table 2: Comparison of FNAC & histopathology examinations

	Benign final pathologic diagnosis	Malignant final pathologic diagnosis	Total
Malignant in FNAC	F.P.=1	T.P.=3	4
Benign in FNAC	T.N.=23	F.N.=1	24
Total	24	4	28

(F.P. = false positive, F.N. = false negative, T.P. = true positive, T.N. = true negative)

In table no 3 the calculated sensitivity and specificity of our study were compared with similar studies.

There were changes in the FNAC results because of the certain results like histopathology examination includes whole specimen or part of specimen which showing wide histopathological details as compared to FNAC in which there is only few cells showing cytological details. So it was noted that diagnostic results can be improved with more standardization of FNAC technique with good knowledge of cytopathology.

On overall results specificity and sensitivity is sufficiently high for FNAC in diagnosis of benign neck swelling as well as also in malignancy. FNAC is cost effective; obviate risk of anesthesia, tumor seeding, post-operative complication and scarring.

Table 3: Comparison with similar studies

Authors	Specificity (%)	Sensitivity (%)
Our study	96	75
Bardales et al	93	86
AL-Khafaji et al	86	82
Cheng et al	89	81
Djupesland et al	91.2	92.5
Oyafuso et al	97.9	90.6
Gertner et al	99	81.1
Shintain et al	94.1	88.9

(All Figures in percentage)

CONCLUSION

In our study the benign lesion is the commonest finding followed by inflammatory lesions and malignant lesions. In addition FNAC is reliable diagnostic tool in evaluation of benign non-metastatic non-hormonal lesion. Also help to screen the patient benign and malignant cases. It is minimally invasive, time sparing technique, quick method to use to sample superficial masses in the neck usually performed in outpatient study.

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