IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 16, Issue 1 Ver. VIII (January. 2017), PP 38-41
www.iosrjournals.org

Clinicopathological Study of Neck Masses in Patients Attending ENT out Patient Department of Rajendra Institute of Medical Sciences, Ranchi

Dr. Pradeep Kumar Singh[1],Dr. Amit Kumar[2],Dr. Dheeraj Kumar[3]
[1]*Associate Professor & Head, Department Of Otorhinolaryngology, Rajendra Institute Of Medical Sciences, Ranchi.*
[2]*Senior Resident, Department Of Otorhinolaryngology, Rajendra Institute Of Medical Sciences, Ranchi.*
[3]*Junior Resident, Department Of Otorhinolaryngology, Rajendra Institute Of Medical Sciences, Ranchi.*

Abstract:
Introduction: *The evaluation of a neck mass is a common clinical condition to which an ENT clinician routinely encounters. Fine needle aspiration cytology (FNAC) is a simple, quick and cost effective method to sample superficial masses found in the neck. It causes minimal trauma to the patient and carries virtually no risk of complication. Masses located within the region of head and neck including salivary glands and thyroid masses can be readily diagnosed using this technique.*
Material and Method: *The material consists of 100 patients with neck swellings coming to the ENT OPD at Rajendra Institute of Medical Sciences, Ranchi. The period of study was one year. All the cases of neck swellings was sent to department of pathology where fine needle aspiration biopsy was done with 21-23 gauge needle attached to the 10ml plastic disposable syringe. Air dried smears were stained with Haematoxylin and Eosin and MAYGRUNWALD-GIEMSA stain whereas 95% ethyl alcohol fixed smears were stained by papanicoloau stain.*
Results: *Of the 100 cases clinically evaluated, 48 were lymph node swellings, 41 were thyroid swellings, 5 were salivary gland swellings and 6 were other swelling. Maximum number of patients was between the age group of 11- 40 yrs.*
Lymph node aspiration was carried on in 48 cases, which was the commonest swelling in our study. 35 of these lymph node cytology reports were similar to HPE report. 7 were not similar to HPE and 6 reports were inconclusive.
Of the 41 thyroid swelling aspirates 23 cytological reports were similar to HPE reports and 18 reports did not match with HPE reports.
The sensitivity of Fine needle aspiration cytology was 66.32%, specificity was 70.4% and accuracy 68.5% (p value <0.001)
Conclusion: *Fine needle aspiration is its ability to determine the diagnostic categorization of a mass in the neck independent of the determination of either malignant or benign growth. This is particularly useful for patient presenting first time with neck mass as the only finding.*
Fine needle aspiration cytology offers a simple method of diagnosis of neoplastic and non neoplastic lesions in the neck. It serves as complementary procedure to Histopathological examination. Hence we conclude that Fine needle aspiration cytology is a safe, simple and rapid method that can be done in diagnosing wide range of neck swellings.
Keywords: *Neck swellings, Fine needle aspiration cytology, Histopathology*

I. Introduction

The evaluation of a neck mass is a common clinical condition to which an ENT clinician routinely encounters. Commonly presenting neck masses occur within lymph nodes, thyroid, parotid and other salivary glands. Less common pathologies presenting as neck swellings are from thyroglossal cysts, branchial cleft cysts, carotid body tumors, cystic hygromas, pharyngeal pouch abnormalities and lumps of skin appendages.[1]

Fine needle aspiration cytology (FNAC) is a simple, quick and cost effective method to sample superficial masses found in the neck. The technique is performed in the outpatient clinic. It causes minimal trauma to the patient. Masses located within the region of head and neck including salivary glands and thyroid masses can be readily diagnosed using this technique.[2,3] In the head and neck region, 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 planned treatment.[4] Fine needle aspiration cytology can be performed under local anesthesia and is particularly useful if a neck lump is thought

to be malignant. There is no evidence that the tumor spreads through the skin track created by the fine hypodermic needle used in this technique.[5] FNAC can be both diagnostic and therapeutic in cystic swellings.[6]

Fine needle aspiration cytology is helpful for the diagnosis of salivary gland tumor where it can differentiate between a benign and malignant tumor with 90% accuracy.[7] FNAC is particularly helpful in the workup of cervical masses and nodules because biopsy of cervical lymphadenopathy should be avoided until all diagnostic modalities have failed to establish diagnosis.[8]

FNAC is clearly no substitute for histology, especially in determination of nodal architecture in lymphoma, the malignant pattern of follicular thyroid tumor, intracapsular spread in squamous carcinoma or in the distinction of pleomorphic from monomorphic adenoma.[4]

The purpose of this study was to evaluate the adequacy and accuracy of FNAC in diagnosis of neck mass.

II. Materials And Methodology

The material consists of 100 patients with neck swellings coming to the ENT OPD at Rajendra Institute of Medical Sciences, Ranchi. The period of study was one year.

Inclusion criteria:

1. All patients attending ENT OPD with neck swelling of both sexes and all age group.

Exclusion criteria

1. Patient who underwent FNAC but did not undergo subsequent histopathological diagnosis.

2. Suspected neck masses of vascular origin on clinical examination.

All the cases of neck swellings was sent to department of pathology where fine needle aspiration biopsy was done with 21-23 gauge needle attached to the 10ml plastic disposable syringe. With full aseptic precaution, needle was inserted to desired depth in all cases and by pulling the piston out firmly a negative pressure is created in the syringe. The needle moved 2-3 times in different directions with piston pulled out to maintain negative pressure. The piston released to allow the pressure to equalize and the needle was then withdrawn. Pressure was applied over the puncture site for 1-2 minutes. The aspirate was injected on to the slide from the needle.

Air dried smears were stained with Haematoxylin and Eosin and MAYGRUNWALD-GIEMSA stain whereas 95% ethyl alcohol fixed smears were stained by papanicoloau stain.

III. Results

Statistical Analysis: The data was analyzed by using SPSS 20 software. The data is presented in percentages, rates and ratios. Chi square test was used to find the association between attributes.

Age distribution: Among 100 subjects within the age group of 11 – 40 years, consists the 74 % of neck swelling presenting the department.

Table – I: Age Distribution

Age Distribution	No. of Patients	Percentage
1 – 10	3	3
11 – 20	15	15
21 – 30	25	25
31 – 40	34	34
41 – 50	10	10
51 – 60	09	9
61 – 70	04	4

Clinical symptoms: Among 100 subjects, 60% of patients does not complain any symptoms other than neck swelling while 20%, 15% and 10% patients complains fever, weight loss and pain associated with neck swelling respectively.

Table – II: Clinical Symptoms

Other Clinical Symptoms	No. of patients	Percentage
Nil	60	60
Fever	20	20
Hoarseness of voice	02	2
Weight loss	15	15
Palpitation	02	2
Upper respiratory tract infection	01	1
Epistaxis	02	2
Dysphagia	01	1
Pain	10	10

Anatomic sites of the swellings: Among the 100 subjects, majority of neck swelling located in anterior part of neck or midline are 36% followed by upper cervical region 31%.

Table – III: Anatomic sites of swelling

Anatomic site	No. of patients	Percentage
Submental triangle	05	5
Submandibular triangle	08	8
Upper cervical	31	31
Middle cervical	04	4
Lower cervical	05	5
Posterior triangle	08	8
Anterior part of neck/Midline swelling	36	36
Lateral part of neck	03	3

Correlation of clinical diagnosis, FNAC report and HPE final diagnosis:

Table – IV: Correlation of clinical diagnosis, FNAC report and HPE final diagnosis

	Clinical Diagnosis		FNAC		HPE	
FNAC Report	No.	%	No.	%	No.	%
Multinodular goitre	35	34	3	3	10	10
Colloid goitre	01	1	20	20	08	8
Nodular goitre	-	-	03	3	02	2
Nodular colloid goitre	-	-	05	5	03	3
Thyroiditis	03	3	-	-	-	-
Lymphocytic Thyroiditis	-	-	02	2	03	3
Hashimoto‘s Thyroiditis	-	-	02	2	01	1
Solitary nodule thyroid	02	2	-	-	-	-
Follicular adenoma	-	-	-	-	04	4
Follicular carcinoma	-	-	-	-	01	1
Follicular neoplasm	-	-	03	3	-	-
Papillary carcinoma	-	-	04	4	05	5
Chronic sailadenitis	05	5	03	3	04	4
Adenoid cystic carcinoma	-	-	01	1	01	1
Acute Suppurative lymphadenitis	13	13	07	7	10	10
Chronic lymphadenitis	03	3	08	8	03	3
TB lymphadenitis	21	21	18	18	23	23
Granulomatous lymphadenitis	-	-	01	1	-	-
Malignant metastasis	06	6	07	7	08	8
Lymphnode abscess	04	4	02	2	-	-
TB abscess	01	1	01	1	-	-
Lipoma	02	2	02	2	02	2
Thyroglossal cyst	04	4	04	4	04	4

IV. Discussion

Of the 100 cases clinically evaluated, 48 were lymph node swellings, 41 were thyroid swellings, 5 were salivary gland swellings and 6 were other swelling. Maximum number of patients was between the age group of 11 – 40 yrs. Lymph node aspiration was carried on in 48 cases, which was the commonest swelling in our study. 35 of these lymph node cytology reports were similar to HPE report. 7 were not similar to HPE and 6 reports were inconclusive. Of the 41 thyroid swelling aspirates 23 cytological reports were similar to HPE reports and 18 reports did not match with HPE reports. Our study evaluated 100 patients and found the overall sensitivity of FNAC in the diagnosis of neck masses to be 66.32% and specificity to be 70.4%. Study by Soni et al had sensitivity of 83.01% and specificity of 78.94%. Out of the 59 patients, 28 were of neck nodes, 14 were thyroid, 13 were of salivary gland masses and 4 were other types of neck masses[9]. Howlett, D.C., et al., studied a total of 276 patients and found FNAC of neck nodes to have a sensitivity of 89% and a specificity of 57%; for thyroid masses, the sensitivity was 62% and specificity was 86%; and for salivary glands, the sensitivity was 64% and specificity was 100%.[8]

Tilak, V., Dhaded, A.V., et al., studied 550 patients and found the overall sensitivity of FNAC for neck masses to be 90.91% and specificity to be 93.18% which is greater than that observed in our study.[10] James Edward M., et al, observed an overall accuracy for FNAC of 94.5%. Thyroid metastasis or benign node lesion had an accuracy of approximately 95%. The diagnosis of lymphomatous lesion had a lower accuracy of 75%.[11]

V. Conclusion

Fine needle aspiration cytology offers a simple method of diagnosis of neoplastic and non neoplastic lesions in the neck. It serves as complementary procedure to Histopathological examination.

Fine needle aspiration cytology of neck masses with clinical co relation can provide most useful information to surgeon to determine the further mode of management.

Hence we conclude that Fine needle aspiration cytology is a safe, simple and rapid method that can be done in diagnosing of neck swellings.

References

[1]. Lumley JSP, Chan S, Harris H, Zangana MOM. Physical signs. 18th edition. Oxford: Butterworth-Heinemann, Oxford, 1997.
[2]. Celeste NP, Williams JF. Fine needle aspiration biopsy of the head and neck. USA: Butterworth Heinemann; 1996. p 1–13.
[3]. Gamba PG, Messineo A, Antoniello LM, Boccato P, Blandamura S, Cecchetto G, Dall'Igna P, Guglielmi M. A simple exam to screen superficial masses: fineneedle aspiration cytology. Med Pediatr Oncol. 1995 Feb;24(2):97-9.
[4]. Watkinson JC, Wilson JA, Gaze M, Stell PM, Maran AGD. Stell and Maran's Head and neck surgery, Butterworth-Heinemann, Oxford, 4th edition, chapter 2; 2000. p 20-21
[5]. Russel RCG, William NS, Bulstrode CJK. Bailey and Love's short practice of surgery. 24th edition. London: Arnold; 2004
[6]. Afridi S, Malik K, Wahed I. Role of fine needle aspiration biopsy and cytology in breast lumps. J college of Physicians and Surgeons Pakistan. 1995; 5:75-7.
[7]. Burnand KG, Young AE, Lucas J, Rolands BJ, Scholefield J. The new Aird's companion in surgical studies. 3rd edition. China: Elsevier; 2005.
[8]. Howlett DC, Harper B, Quante M, Berresford A, Morley M, Grant J, Ramesar K, Barnes S. Diagnostic adequacy and accuracy of fine needle aspiration cytology in neck lump assessment: results from a regional cancer network over a one year period. J Laryngol Otol. 2007 Jun; 121(6):571-9. Epub 2006 Nov 30.
[9]. S Soni, S K Pippal, Yashveer B, P Srivastava,Efficacy of fine needle aspiration in diagnosis of neck masses.World articles of Ear Nose and Throat.
[10]. Vijay Tilak, A V Dhaded, Ragini Jain, Indian J pathol Microbiol. 45(1): 23- 30 2002.
[11]. Edward J, Young MD, et al. Needle aspiration cytologic biopsy in head and neck masses. The American Journal of surgery. 1981 Oct;142(4).