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Cytopatholgical Study of Anterior Triangle Neck Masses in Patients at Tertiary Care Centre - City Hospital Beijing China

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Abstract

Background: A lump is the most likely clinical problem to be encountered in the neck. Fine needle aspiration cytology (FNAC) is a simple, rapid and cost effective method to sample superficial masses found in the head and neck. It causes minimal trauma to the patient and involve virtually no risk of complications. Aim of the study is to determine the prevalence of anterior triangle neck lesions and evaluate the role of FNAC with the respect to the age, sex & site.

Material and methods: The study consists of 1032 patients with palpable anterior triangle neck masses coming to the Department of Pathology at city hospital Beijing china, Beijing. The period of study was two years. Aspirations were done by using 20 ml syringe and 22/24 gauge needles. Smears were stained with Papanicolaou stain.

Observation and Results: Out of 1032 patients of anterior triangle of neck lesions studied, 437 were males and 595 were females, giving a male: female ratio of 1:1.36. Lymph node was the predominant site aspirated, constituting 721 cases (69.86%) with tuberculous lymphadenitis being the most common lesion. Thyroid lesions constituted 23.64% and miscellaneous were 6.50%.

Conclusion: FNAC is important diagnostic test for differentiating inflammatory from malignant lesions so that unnecessary surgical biopsy can be avoided and helps in proper management of the patients.

Key words: anterior triangle neck masses, FNAC, tubercular lymphadenitis, thyroid lesions.

1. Introduction

A lump is the most likely clinical problem to be encountered in the neck.[1] Fine needle aspiration cytology (FNAC) is a simple, rapid and cost effective method to sample superficial masses found in the head and neck. [2] Over a period of years, FNAC has established as an accurate, safe, and minimally invasive procedure and one of the preferred first-line diagnostic tool. It causes minimal trauma to the patient and involve virtually no risk of complications. Commonly clinically presenting neck masses occur within lymph nodes, thyroid and salivary glands. An early differentiation of benign from malignant condition is beneficial in planning the treatment.[3] It can be both diagnostic and therapeutic in cystic swellings.[4] FNAC is particularly helpful in the examination of neck masses and neck nodules because biopsy of neck swelling should be avoided unless all other diagnostic modalities have failed to establish a diagnosis.[5].

2. Material and methods

The study consists of 1032 patients with palpable anterior triangle neck masses coming to the Department of Pathology at city hospital Beijing china, Beijing. The period of study was two years, October 2013 to September 2015. Palpable anterior triangle neck.

3. Observations and results

The present study included 1032 cases palpable anterior triangle neck lesions from various departments as an OPD as well as IPD patients. Age group of patients ranged from 1 year to 80 years. 595 were female, and 437 were male constituting M:F ratio of 1:1.36 [Table 1]. Maximum number of patients was in the age group of 16-30 years (39.82%) and least number of patients was seen in age group of above 60 years [Table 1]. Anterior triangle neck lesions FNAC shows lymph nodes lesion (69.86%) as the predominant site of FNAC followed by thyroid lesions (23.64%) and others (6.5%) cases. Out of 721 cases of lymph node lesions, tuberculous lymphadenitis was the predominant cause of masses was aspirated using 22-24 G needle and 20 ml syringe. Aspirated material stained with Papanicolaou stain. Cytopatholgical diagnosis was given and evaluation of lesions was done with the respect to the age, sex & site. Lymphadenopathy, constituting 261 cases (36.19%) followed by reactive lymphadenitis in 171 (23.71%) cases [Table 2]. In malignant lesions, metastatic malignancies were the predominant lesions, constituting 108 cases (14.97%). Amongst 244 (23.64%) cases of thyroid lesions, 16 (6.55%) were of inflammatory origin and 223 (91.39%) were of benign origin and 5 (2.04%) were of malignant origin [Table 3]. Out of 1032 aspirations 67 (6%) cases were miscellaneous lesions which include 26 cases (39%) of lipoma, 20 cases (30%) epidermal inclusion cysts, 10 cases (15%) of cystic lesion, 6 cases (9%) of pleomorphic adenoma from aspiration of submandibular salivary gland and 5 cases (7%) of abscess on FNAC [Table 4].

Table 1- Age and gender wise distribution

Age Group (in yrs)	Male	Female Total (%)	Total (%)
0-15	80	79	159 (15.41)
16-30	121	290	411 (39.82)
31-45	92	137	229 (22.19)
46-60	96	61	157 (15.22)
>60	48	28	76 (7.36)
total	437	595	**1032 (100)**

Table 2- Distribution of Various Lymph Node Lesions

Lymph Node Lesions	No. of Cases	%
Tuberculous lymphadenitis	261	36.19
Reactive hyperplasia of lymph node	261	23.71
Acute suppurative lymphadenitis	103	14.28
Metastatic squamous cell carcinoma	102	14.14
Chronic granulomatous lesion	44	6.1
Tuberculous abscess	13	1.80
Abscess	12	1.66
Metastatic Adenocarcinoma	06	0.8
Non Hodgkin's lymphoma	06	0.8
Calcified lesion	02	0.3
Hodgkin lymphoma	01	0.1
Total	**721**	100

Table 3- Distribution of various Thyroid lesions

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Thyroid lesions	No. of Cases	%
Benign lesion thyroid	88	36.0
Benign cystic lesion thyroid	58	23.7
Colloid Goiter	44	18.0
Follicular Neoplasm	33	13.5
Granulomatous thyroiditis	10	4.1
Lymphocytic thyroiditis	05	2.0
Papillary carcinoma thyroid	02	0.8
Hashimoto thyroiditis	01	0.4
Anaplastic carcinoma thyroid	01	0.4
Medullary carcinoma thyroid	01	0.4
Poorly differentiated carcinoma	01	0.4
Total	**244**	**100**

Table 4- Distribution of various miscellaneous lesions

Lesion	No. of Cases	%
Lipoma	26	39
Epidermal Inclusion Cyst	20	30
Cystic lesion	10	15
Pleomorphic adenoma	06	9
Abscess	05	7

4. Discussion

Cervical lymph node prompts a thorough examination as they are common site for reactive lymphadenopathy, inflammatory lymphadenopathy and metastatic deposits from various primary carcinoma. Aspiration cytology can easily pick up the pleomorphic cells helping pathologist to differentiate between non-neoplastic and neoplastic conditions and so differentiate conditions like tuberculous and reactive lymph node from malignant lesions, thus preventing unnecessary surgery. [6,7] There were no contraindications in patients with other complaints and the procedure was performed without complications .[8] However, rare complications includes bleeding, infections, nerve injury, swelling, and bruising.[9,10] Total 1032 cases with anterior triangle neck lesions were examined cytologically.The most frequent cause of anterior triangle neck swelling is lymphadenopathy in this study (69.9%) and is similar to study of Chauhan S. et al (67.7%). [11]In the present study, out of 721 lymph nodes aspirated, most common diagnosed lesion was of tuberculous lymphadenitis- 261 cases (36.19 %). Results are similar to Bhagat VM et.al (35.66 %). [12]Of the 721 patients with lymphadenopathy, 108 cases (14.97%) showed evidence of metastasis. Jasmin H. Jasani et.al. [13] and Setal chauhan et.al. [14] reported 11.3% and 25 % cases of metastatic lymph node respectively. 102 (94.5%) out of the 108 cases in our study with metastasis were diagnosed to have metastatic squamous cell carcinoma.There were 244 cases of thyroid lesions out of 1032 anterior triangle neck mass lesions. Out of these 244 cases, 16 (6.55%) were of inflammatory origin and 223 (91.39%) were of benign origin and 5 (2.04%) were of malignant origin. Russ et.al. [15] have reported 90.58% benign lesions and 9.4% of malignant lesions. In the miscellaneous lesions, lipoma (39%) were the most common lesion followed by epidermal inclusion cysts (30%).

5. Conclusion

Fine needle aspiration cytology (FNAC) is a simple, rapid and cost effective method to diagnose different types of neck swellings.Lympha - denopathy is most common cause of anterior triangle neck mass. Tuberculous lymphadenitis is the most common diagnosis followed by reactive hyperplasia of lymph node. FNAC is important diagnostic test for differentiating inflammatory from malignant lesions and it is helpful to avoid unnecessary surgeries and in general clinical management such as antibiotic treatment or neoadjuvant chemo-therapy [16].

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