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Original Research Article

To evaluate the role of fine needle aspiration cytology in the initial assessment and the clinical management of patients of palpable mass lesions in anterior triangle of neck with the respect to the age & sex

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Abstract:

Background & Method: The aim of the study is to evaluate the role of fine needle aspiration cytology in the initial assessment and the clinical management of patients of palpable mass lesions in anterior triangle of neck with the respect to the age & sex. This palpation governs the placement of the needle tip. In small lesions (l cm in diameter), it is generally desirable to aim for the center of the lesion. In very large lesions (>5 cm in diameter), there may be central necrosis, and thus the periphery is more likely to yield diagnostic material.

Result: Out of total 516 patients, 122 patients of thyroid lesions came for FNAC. Female were more affected than males with male:female ratio of 1:4.9. Most commonly affected age group was 16-30 years of age.

Conclusion: Thyroid Lesions – Out of these 122 patients, there were 20 males (16.8%) and 102 females (83.2%). The male:female ratio was 1:4.95, which shows that female comprised the majority of our patients. 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.

Keywords: FNAC, clinical, mass lesions & neck.

Study Designed: Observational Study.

1. Introduction

Lymph node is a major anatomic part of immune system. It is a bean shaped organ, size measuring 2.0 mm – 20.0 mm in diameter. It is divided into three major regions as cortex, paracortex and medulla[1].

The cortex is situated beneath the capsule and contains largest number of follicles. Medulla is rich in lymph sinuses, arteries and veins with only minor lymphocytic component.

Primary follicles appear round aggregates of small, dark staining inactive (naïve) B lymphocytes, usually near the capsule, within a network of follicular dendritic cell processes. Secondary follicles arises from primary follicle that develops germinal centres due to antigenic stimulation of B cells and production of antibodies and contains pale staining germinal centre which may be polarized towards site of antigen entry[2]. Germinal centres: comprise of centrocytes, centroblasts, macrophages and follicular dendritic cells. The paracortex is a zone situated between the cortex and medulla[3].

Lymph node enlargement is one of the most common clinical conditions with various etiological predispositions[4]. It is one of the most frequent organ to be aspirated in the head and neck region[5].

2. Material & Method

The study consists of 516 patients with palpable anterior triangle neck massses coming to the Department of Pathology at Index Medical College Hospital & Research Centre, Indore from June 2020 to May 2021. Outdoor as well as indoor patients from Department of Surgery, ENT, Medicine, CNBC, TB hospital & Cancer Hospital with palpable anterior triangle neck swellings were referred to Department of Pathology for FNAC.

This palpation governs the placement of the needle tip. In small lesions (l cm in diameter), it is generally desirable to aim for the center of the lesion. In very large lesions (>5 cm in diameter), there may be central necrosis, and thus the periphery is more likely to yield diagnostic material. In medium-sized lesions (2 to 4 cm

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in diameter), it is often advantageous to collect samples from two different areas: one to the side of the center, and another one in the mirror-image position of the previous aspiration.

Inclusion criteria-

- All patients with palpable anterior triangle neck masses of both sexes and all age group.

Exclusion criteria-

- Suspected masses of vascular origin / pulsatile swelling.
- Swelling in other parts of neck.
- Patients with bleeding disorders.

3. Results

Table 1: Gender Distribution of Anterior triangle neck mass lesions

Gender	Number of patients	%
Females	298	58
Males	218	42
Total	**516**	**100**

In the present study, which comprised of 516 patients, 218 were males & 298 were females. The numbers of female patients were more than male giving a male : female ratio of 1:1.36.

Table 2: Organ wise distribution of cases of anterior triangle neck masses

Organ	**No. of Cases**	**%**
Lymph Node	360	69.86
Thyroid	122	23.64
Others	34	6.50
Total	**516**	100

In the present study, out of 516 patients, maximum numbers of cases were from lymph nodes consisting of 360 cases, 122 were thyroid lesions, 34 were others from submandibular salivary gland, soft tissue & subcutaneous tissue of anterior triangle neck masses.

Table 3: showing age wise prevalence of thyroid lesions

Age Group (in yrs)	**Male**		**Female**	
	No. of Patients	**%**	**No. of Patients**	**%**
0-15	02	10.0	01	1.0
16-30	04	19.0	44	43.0
31-45	06	32.0	35	35.0

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46-60	05	27.0	17	16.0
>60	03	12.0	05	5.0
Total	**20**	100	**102**	100

Out of total 516 patients, 122 patients of thyroid lesions came for FNAC. Female were more affected than males with male:female ratio of 1:4.9. Most commonly affected age group was 16-30 years of age.

4. 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 20ml disposable syringe attached to 22 or 24 gauge needle[6]. The procedure also provides the information about the next best step in clinical workup of patients. This procedure can easily distinguish between non-neoplastic and neoplastic conditions and can diagnose conditions like tuberculous and reactive lymph node from malignant and metastasis thus preventing unnecessary surgery[7].
The reliability of the method has been shown in several studies for neck masses. The result of cytology of aspirated enlarged lymph nodes indicates that inflammatory lymphadenopathy constitutes a significant proportion of findings. It is also proved that cytological examination may not only help to distinguish between inflammatory and malignant types, but may also suggest the nature of the inflammatory process[8].
Of the 721 patients with lymphadenopathy, 108 cases (14.97%) showed evidence of metastases. Out of the 108 cases, 84 were males and 24 were females. The male: female ratio was 3.5:1. Most of the patients in the present study were in the age group of 46 to 60 years[9]. 102 (94.5%) out of the 108 cases in our study with metastases were diagnosed to have metastatic squamous cell carcinoma[10-11].

5. Conclusion

Thyroid Lesions – Out of these 122 patients, there were 20 males (16.8%) and 102 females (83.2%). The male:female ratio was 1:4.95, which shows that female comprised the majority of our patients. 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.

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