Section: Pathology

Original Research Article

CYTOLOGICAL STUDY OF HEAD AND NECK FNAC IN GWALIOR, MADHYA PRADESH POPULATION

Saurabh Srivastava[1], Surabhi Mishra[2], Yash Saxena[2]

[1]Assistant Professor, Department of Pathology, Gajra Raja Medical College Gwalior, Madhya Pradesh, India
[2]Post-graduate, Department of Pathology, Gajra Raja Medical College Gwalior, Madhya Pradesh, India.

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Corresponding Author:
Dr. Surabhi Mishra,
Email: saurabhpatho@gmail.com

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Abstract

Background: Fine Needle Aspiration technology (FNAC) with its minimally invasiveness has been well accepted procedure in the initial diagnosis of various pathological swellings. It is non-toxic, cost-effective procedure hence useful in all age groups. **Materials and Methods:** 200 patients aged between 5 to 60 years having enlargement of lymph node in the head and neck region were studied with FNAC techniques. Before FNAC invasion concerned previous clinical history was noted in every patient. Apart from Routine blood examination CBC, AFB test was also carried (whenever necessary) and various clinical manifestations were noted and classified with percentage. **Result:** Out of 200 patients, 70 (357%) enlargement of lymph nodes in neck region, 55 (27.5%) thyroid lesions, 48 (24%) salivary lesions, 27 (13.5%) were noted and every lesions were evaluated and classified accordingly. **Conclusion:** FNAC technique is simple rapid method to study cytology of head and neck region to diagnose various pathologies. It helps to clinician to diagnose the proper clinical manifestation to avoid morbidity and mortality in the concerned patients.

INTRODUCTION

Fine-needle aspiration cytology (FNAC) was first time conducted by Martin and colley from New York in 1930.[1] FNAC is a simple quick and cost-effective method to sample superficial masses found in the head and neck.[2] FNAC is also widely used in the head and neck regions. A lump is the most likely clinical problem to be encountered in the neck. The evaluation of neck mass is a common clinical dilemma and a condition to which clinicians routinely encounters. The common pathologies observed in the neck lump are lymphadenopathies (specific and non-specific acute and chronic), metastatic carcinoma, lymphoma thyroid swelling (goitre nodules, and cysts) and salivary gland swellings (sialadentitis, cysts, adenoma and carcinomas). The less common pathologies presenting as swelling in the neck are carotid body tumour, bronchial cyst, thyroglossal cyst, cystic hygroma, pharyngeal pouch appendages.[3,4] FNAC can be performed in the outpatient clinic. It causes minimal trauma to the patient and carries virtually no risk of complications hence attempt is made to study the frequency of distribution of various pathological conditions detected on FNAC in patients presenting with head and neck swelling at different age groups of the patients in both sexes.

MATERIALS AND METHODS

200 (Two Hundred) patients of different age groups regularly visited to pathology department of Gajra Raj, Medical College Hospital, Gwalior, MP-474002 were studied.

Inclusive Criteria

Patients aged between 5 years to 60 years having enlargement of lymph nodes in the head and neck region referred by surgery, medicine, paediatric departments were selected for study.

Exclusive Criteria

Patients already undergone surgery for malignancy and under the treatment of anti-malignancy. Immune compromised patients were excluded from study.

Method

Clinical based study was conducted in the department of pathology, prior to FNAC every patient was examined in detailed with relevant clinical history. Routine and other special investigation (if required) blood examination was carried local examination of mass was carried out FNAC was performed using 22/23-gauge needle attached to 10 ml plastic disposable syringe. Air dried smears were stained with May Grunewald Giemsa (MCG) and 95% of ethanol fixed smears were stained with papanicolaou (PAP) stain: Zheil Nelson stain for AFB was done whenever required.

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The duration of study was January-2022 to February-2023

Statistical Analysis

Various lesions of Head and neck were studied and classified with percentage. The statistical study was carried out SPSS software. The ratio of male and female was 2:1.

RESULTS

[Table 1] Study of different organs / parts by FNAC technique 70 (35%) Lymph nodes of Neck region, 55 (27.5%) thyroid lesions, 48 (24%) salivary gland lesion, 27 (13.5%) soft tissue lesion.

[Table 2] Study of lymph nodes region - Out out of 70 – 25 (35.7%) tuberculosis lymphadenitis, 14 (20%) reactive lymphadenitis, 11 (15.7%) supparative lymph nodes, 20 (28.5%) metastasis.

[Table 3] Study of Thyroid lesions Out of 5 – 5 (32.7%) had benign nodular goitre, 6 (10.9%) follicular lesion, 19 (34.5%) Hashimoto thyroiditis, 12 (21.8%) malignant.

[Table 4] Study of lesion in salivary gland – 23 (47.9%) polymorph adenoma, 9 (18.7%) muco-epidermoid carcinoma, 16 (33.3%) chronic sialadentitis.

[Table 5] Study of lesion in soft tissue Out of 27, 17 (62.9%) Lipoma, 8 (29.6%) haemangioma, 2 (7.4%) Basal cell carcinoma.

Table 1: Study of different organs / parts by FNAC technique.

Different organs	No. of patients (200)	Percentage (%)
Lymph nodes of Neck region	70	35 %
Thyroid lesion	55	27.5 %
Salivary lesion	48	24 %
Soft tissue lesion	27	13.5 %

Table 2: No. of patients- 70. Study of lymph nodes of Neck region with different clinical manifestations

Lesions	No. of patients (70)	Percentage (%)
Tuberculosis lymphadenitis	25	35.7
Reactive lymphadenitis	14	20
Suppurative lymph nodes	11	15.7
Metastasis	20	28.5

Table 3: Study of Thyroid lesions with percentage.

Lesions	No. of patients (55)	Percentage (%)
Benign nodular goitre	18	32.7
Follicular lesion	6	10.9
Hashimoto thyroiditis	19	34.5
Malignant	12	21.8

Table 4: Study of lesions in Salivary gland

Lesions	No. of patients (48)	Percentage (%)
Poly morph Adenoma	23	47.9
Muco -epidermoid carcinoma	9	18.7
Chronic sialadentitis	16	33.3

Table 5: Study of lesions soft lesion.

Lesions	No. of patients (27)	Percentage (%)
Lipoma	17	62.9
Haemangioma	8	29.6
Basal cell carcinoma	2	7.4

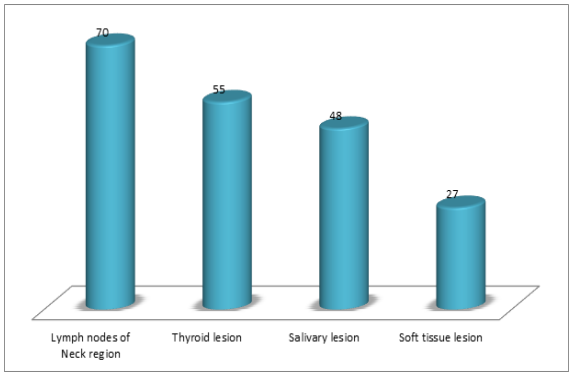

Figure 1: Study of different organs / parts by FNAC technique

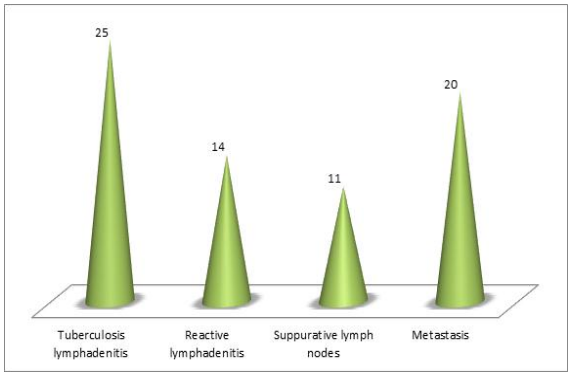

Figure 2: Study of lymph nodes of Neck region with different clinical manifestations

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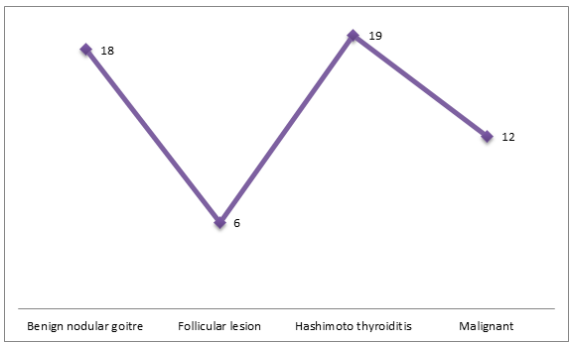

Figure 3: Study of Thyroid lesions with percentage

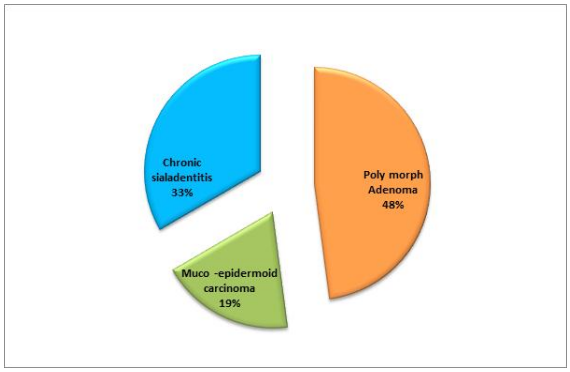

Figure 4: Study of lesions in Salivary gland

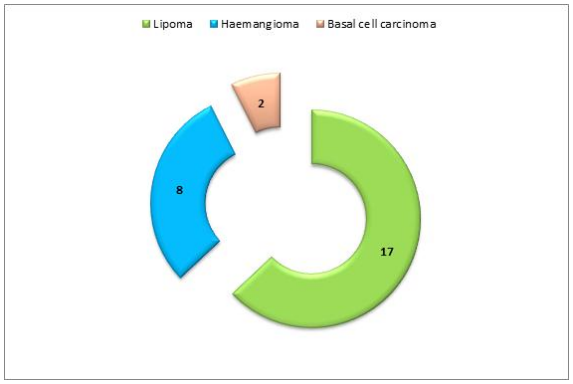

Figure 5: Study of lesions soft lesion

DISCUSSION

Present cytological study of FNAC in Madhya Pradesh population. Out of 200 patients 70 (35%) had enlargement of lymph nodes in the neck region, 55 (27.5%) had thyroid lesions, 48 (24%) had salivary lesion, 27 (13.5%) had soft tissue [Table 1]. Out of 70, Enlargement of lymph nodes in the neck region 25 (35.7%) had tuberculosis lymphadenitis, 14 (20%) had reactive lymphadenitis, 11 (15.7%) suppurative lymph nodes, 20 (28.5%) had metastasis [Table 2]. Out of 55 thyroid lesions – 18 (32.7%) had Benign nodular goitre, 6 (10.9%) follicular lesion, 19 (34.5%) Hashimoto thyroiditis, 12 (21.8%) malignant, [Table 3]. Out of 48 lesions in salivary gland – 23 (47.9%) polymorph adenoma, 9 (18.7%) muco-epidarmoid carcinoma, 16 (33.3%) chronic sialadentitiis [Table 4]. Out of 27 soft tissue – 17 (62.9%) Lipoma, 8 (29.6%) Haemiangioma, 2 (7.4%) Basal cell carcinoma [Table 5] These findings are more or less in agreement with previous studies.[5-7]

Fine needle aspiration cytology has gained importance as it is inexpensive safe, quick and offers high degree of accuracy, reliability and feasibility when performed by a well trained and experienced cytologist. In the present study, the array of lesion observed from various sites in head and neck region and effective diagnostic its utility as effective diagnostic modalities. However there are limitations and pit-falls in cytological interpretations and those cases were confirmed by histological evaluation. It was also noted that, males were more affected than female in every study of head and neck region.[8,9] In the present study lymph-nodes of neck were highest 276 (36.7%) followed by 210 (27.9%) in thyroid lesion and least were observed 84 (11.1%) in soft tissue lesion similar observation was also done in previous authors.[10,11]

Metastasis (malignant) lesion were more in thyroid lesion 45 (21.4%) followed in 35 (19.2%) in salivary gland and least 5 (7.14%) in soft tissue but metastatic lesion was more i.e. 79 (28.6%) in head neck region similar observations were also done in previous studies.[12]

In the present study there was no bleeding, oedema, haematoma, or infection after the FNAC and helps pre-operative diagnosis of lesions clinical follow up more comfort to the patient and low risk of infection or tissue damage.

CONCLUSION

Present study of FNAC in lymph-nodes of Head and Neck lesion proved that FNAC is the ideal investigation one can claim with fairly good accuracy safe and quick which can be achieved with greater experience and expertise but early approach to medical aid like FNAC technique can prevent morbidity and mortality of the patient hence it requires to create awareness by medico-social workers or para-medical staff to educate the people having enlargement of lymph node or thyroid to access the medical aid at the earliest.

Limitation of Study

Due to tertiary location of research centre, small number of patients and lack of latest techniques we have limited findings and results.

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