

Role of Fine Needle Aspiration Cytology in Assessment of Head and Neck Lesions - A Study at a District Hospital

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ABSTRACT

Background: Fine needle aspiration cytology (FNAC) is a rapid, economical and less invasive method used for diagnosis in case of head and neck lesions which are commonly seen in general practice.

Aim: The present study was designed to find out the spectrum of head and neck masses, and to assess advantage of using FNAC in the diagnosis of palpable head and neck masses.

Material And Methods: This was a retrospective study conducted over a period of 3 years from May 2019 to May 2022 in the department of pathology at district hospital JLN. FNAC was performed on head and neck swellings and were evaluated for cytomorphology.

Results: A total of 583 cases were studied. Majority of the patients belonged to the age group of 30 to 50 years. Out of 583 cases, 299 were males and 284 were females. Maximum cases were from lymph nodes (241) accounting for 41.3% of total cases. 35.5% (207 cases) were from skin and soft tissue swellings. 17.4% (102 cases) were of thyroid, and 5.6% from salivary gland (33 cases).

Conclusions: FNAC is a reliable procedure for screening and diagnosing palpable head and neck lesions. It is extremely sensitive, specific and helps as an adjunct to histopathology. FNAC helps to decide as to whether to resect a benign tumour or to plan extensive surgeries and

helps in guiding the therapeutic management by avoiding unnecessary surgeries and expenses.

Key Words: Head & Neck, Lymphadenopathy, FNAC.

INTRODUCTION

FNAC is an excellent first line method for investigating the nature of palpable lesions in the head and neck region (1). Fine needle aspiration procedure being safe, rapid, cost - effective, simple OPD procedure, early diagnosis at the first contact of patient and it can delineate between benign and malignancy and can be repeated for definite confirmation on doubtful diagnosis. It also plays an important role to serves as a complementary diagnostic procedure to histopathological examination. Therapeutic decisions can be made earlier and without the need for further diagnostic surgery. The common pathologies encountered in the head and neck region presenting as a lump are lymphadenitis, thyroid swellings, salivary gland swellings and the skin and soft tissue lesions like lipoma, epidermal cysts, benign adnexal tumours, etc

AIM

This study aims to evaluate the role of Fine Needle Aspiration Cytology (FNAC) in

diagnosing lesions of the head and neck region.

MATERIALS AND METHODS

This study was conducted in the department of pathology at JLNMH, a district hospital of Srinagar, Kashmir for a period of 3 years from May 2019 to May 2022. Details regarding history, clinical examination, and probable diagnosis were noted, and data regarding age, sex, anatomic region, and presenting complaints were correlated. Fine needle aspiration cytology (FNAC) was done with the help of 20 mL disposable syringe with 22 gauge needle. A few of the aspirations, particularly from smaller and difficult to palpate lesions, were USG guided. Slides were air-dried and stained by the Giemsa stain. In the case of lymphadenopathy, where suspicion of tubercular pathology was there or aspiration yielded cheesy/caseous/necrotic material, Ziehl Neelsen (ZN) stain for acid-fast bacilli was done. This study was approved by the institutional ethics committee. Statistical analysis was performed using SPSS software 2.0.

RESULTS

In the present study a total of 583 cases were included. In our study, highest numbers of cases were seen in the age group of 30 to 50 years. Males (51.28%) were affected more than the females (48.71 %). Maximum number of lesions were found in lymph nodes (41.3 %) followed by skin and soft tissue (35.5 %), thyroid(17.4%) , and salivary glands (5.6%) (Table 1).A total of 241 (41.3 %) cases were present in lymph nodes. Non specific lymphadenitis was seen in majority constituting 35.33% of overall cases. Granulomatous lymphadenitis was seen in 25 (4.28 %) cases. Other lesions identified in lymph nodes were 7 lymphoma (1.20 %) cases, 3 metastasis (0.5 %) cases as shown in Table 1. A total of 207 cases(35.5%) involving skin and soft tissues were studied. Keratinous cyst constituted the predominant skin lesion in 94 cases(16.12%).Other soft tissue lesions

encountered included 71 lipomas (12.17%),and benign spindle cell lesion 36(6.17%). A total of 102 (17.49 %) cases of thyroid gland lesion were observed in which 62 cases (10.63 %) were of benign follicular nodule. It was followed by 18 cases (3.08 %) of Hashimoto thyroiditis and 8 cases (1.37 %) of papillary carcinoma. In 33 cases of salivary gland lesions(5.66%), sialadenitis was detected in 18 (3.08 %) cases. 12 cases of pleomorphic adenoma (2.05%) with 3 malignant cases were noted (0.51%).

Table1: Distribution and FNAC report of Head and Neck lesions.

| FNAC REPORT | NO OF PATIENTS | PERCENTAGE |
|-----------------------------|----------------|------------|
| Lymph node lesions | 241 | 41.3 |
| Reactive | 206 | 35.33 |
| Granulomatous | 25 | 4.28 |
| Lymphoma | 07 | 1.20 |
| Metastasis | 3 | 0.51 |
| Skin and Soft tissue lesion | 207 | 35.50 |
| Keratinous Cyst | 94 | 16.12 |
| Lipoma | 71 | 12.17 |
| Benign spindle lesion | 36 | 6.17 |
| Pilomatrixoma | 3 | 0.51 |
| Thyroglossal Cyst | 4 | 0.68 |
| Angiolymphoma | 1 | 0.17 |
| Thyroid lesions | 102 | 17.49 |
| Colloid goitre | 62 | 10.63 |
| Hashimoto thyroiditis | 18 | 3.08 |
| Papillary Carcinoma | 8 | 1.37 |
| Follicular Neoplasm | 7 | 1.2 |
| Medullary Carcinoma | 2 | 0.34 |
| AUS | 3 | 0.51 |
| Non diagnostic | 1 | 0.34 |
| Salivary Gland Lesions | 33 | 5.66 |
| Sialadenitis | 18 | 3.1 |
| Pleomorphic Adenoma | 12 | 2.05 |
| Mucoepidermoid Carcinoma | 2 | 0.3 |
| Adenoid Cystic Carcinoma | 1 | 0.2 |

DISCUSSION

The neck masses must be approached in a thorough and disciplined manner². These masses can present as only manifestation of a serious and potentially malignant pathologies. The present study was conducted in Department of Pathology

JLNMH District hospital Srinagar. It is a simple, reliable and inexpensive diagnostic tool in evaluation of head and neck swellings^{3,4}. A total of 583 cases were included in a study period duration of 3 years. The maximum number of patients were between 30-50 years. This was similar to studies done by Patel DN et al⁵ and Verma N et al¹¹ while Rathod GB et al,⁶ Poorey VK et al,⁷ Kapoor S et al⁸, Khetrupal S et al⁹, Valiya LG et al¹⁰ found 21-30 years as the major group. Out of 583 cases, 241 (41.3%) were from lymph node, 207 (35.5%) skin and soft tissue, 102 (17.4%) from thyroid and 33 (5.6%) from salivary glands. Our study is similar to studies done by Verma N et al,¹¹ Ishar T et al,¹² Poorey et al,⁷ and Patel DN et al⁵. (Table 2) While Rathod GB et al⁶ found thyroid as the most common site. In lymph nodes most common cytological finding comprised of reactive lymphadenitis 206 cases (35.33%) followed by granulomatous lymphadenitis 25 cases (4.28%). It is always beneficial while doing an early differentiation of benign from malignant pathology as it greatly influences the planned treatment.^{13,14} Our study was similar to studies done by Verma N et al,¹¹ and Patel DN et al⁵ while studies done by Gupta G et al,¹³ Poorey VK et al⁷ and Valiya LG¹⁰ et al found granulomatous/tubercular lymphadenitis as the most common benign lesion of lymph node. In our study skin and soft tissue cases comprised 207 in number of which epidermal inclusion cyst was most common entity seen in 94 (16.12%). Similar finding was seen by Poorey VK et al⁷, Valiya LG et al¹⁰. In our study among salivary gland cases, sialadenitis was the most common case seen in 18 cases (3.08%). Pleomorphic adenoma was seen in 12 cases (2.05%) Pleomorphic adenoma was the most common salivary gland lesion in studies done by Gupta G et al¹³, Poorey VK et al⁷, Valiya LG et al¹⁰. In our study among 102 cases of thyroid lesions, colloid goiter was the most common finding seen in 62 cases (10.63 %) followed by Hashimoto's

thyroiditis in 18 cases (3.08%). So our studies was similar to studies done by Gupta G et al¹³, Poorey et al,⁷ Patel et al,⁵ and Valiya et al.¹⁰

CONCLUSION

FNAC is simple, quick, inexpensive and minimally invasive first line investigation for differential diagnoses of head and neck masses. In majority of cases, FNAC can differentiate the benign lesions from neoplastic one and hence greatly influences the treatment plan.

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