

# Cytomorphological Patterns of Various Head and Neck Lesions- A Study in a Peripheral Hospital in North India

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## Abstract

**Introduction:** Head and neck lesions are routinely encountered by the clinicians, irrespective of age, sex and demography. FNAC is an integral part of diagnosing these lesions as these lesions are quite accessible to aspiration. FNAC is easy OPD procedure with minimal complications and a good sensitivity and specificity. **Aims:** To assess the cytomorphological spectrum of various head and neck lesions diagnosed on FNAC according to site, age and sex in a peripheral hospital in north India where no previous such study has been done. **Material and Methods:** The present study is a retrospective study undertaken in the Department of Pathology, District hospital udhampur, a peripheral hospital in north India. Cases were studied from December 2020 to March 2021. **Results:** Out of 85 fine needle aspiration procedures 48.2% (40 cases) were of lymph node, 24.7% (21 cases) from skin and soft tissue swellings 17% (20 cases) were of thyroid, 7.05% from salivary gland (06 cases). The present study included 85 cases with the age ranging from 5 months to 72 years out of which 52 (61.1%) were females and 33 (38.8%) were males. Reactive lymphadenitis is the commonest inflammatory lesion. Colloid goitre is the commonest benign lesion. **Conclusion:** Skin and soft tissue lesions were second most common lesion in these areas as compared to other studies. No such previous study has been done in rural area. This will help us to know the trend of various head and neck lesions in these areas.

**Keywords:** FNAC, soft tissue, peripheral.

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## INTRODUCTION

Head and neck lesions are routinely encountered by the clinicians, irrespective of age, sex and demography. FNAC is an integral part of diagnosing these lesions as these are quite accessible to aspiration. FNA is highly suitable for debilitated patients, is repeatable, useful for multiple lesions and has low risk of complications. Head and neck swellings vary from inflammatory, non neoplastic to neoplastic lesions. Most common sites sampled are skin, subcutaneous tissues, lymph nodes, thyroid and salivary glands. With the help of newer radiological techniques FNAC of deeper structures is easily possible [1]. Head and neck neoplasm is a major form of cancer in India accounting for 23 % of all cancer in males and 6 % in females [2, 3]. The highest incidence of head and neck neoplasia, in the world, among women has been reported from India. A timely FNAC plays an important role in early diagnosis [2, 3]. FNAC of head and neck region is a generally well accepted technique with high

specificity [4]. Patients in peripheral India have a very poor economic status hence FNAC also has a advantage of relieving their financial constrains as well as relieving their mental stress by providing them with immediate diagnosis in OPD. FNA is highly suitable for debilitated patients, is repeatable, useful for multiple lesions and has low risk of complications Ancillary techniques done on cytology like flow cytometry, cytogenetic, electron microscopy, cell block preparation, immunocytochemistry have further added a tool in diagnosis.

The present study was undertaken to assess the cytomorphological spectrum of various head and neck lesions diagnosed on FNAC according to site, age, and sex in a peripheral hospital in north India where no previous such study has been done.

## MATERIAL AND METHODS

The present study was undertaken in the Department of Pathology, district hospital udhampur a

peripheral hospital in northern India. Cases were recorded and studied from December 2020 to March 2021. Those patients who presented with superficially palpable head and neck lesion in OPD or admitted in hospital and underwent FNAC were considered as the study group. This retrospective observational study included 85 cases of FNACs done on head and neck swellings performed as outdoor procedure. Detailed clinical history of all the patients were taken related to head and neck swellings and relevant questions were asked to extract the etiology and also about present, past and family history of tuberculosis and history of sexual exposure for syphilis and AIDS.

**Inclusion criteria-**In this retrospective study, FNAC was performed in 85 OPD patients presented with swellings in the head and neck region. All the cases of head and neck swellings sent for FNAC from surgical departments of the hospital were included.

**Exclusion criteria-**The cases of head and neck swellings which were inaccessible and with insufficient material in FNAC were excluded from the study.

The palpable swelling was fixed with one hand and with all aseptic precautions, 22- 23G needle with 10ml syringe was inserted into the swelling and a negative pressure was applied. The aspiration material was smeared on the glass slides and smears made were relevantly stained with May Grunwald Giemsa, and Papanicolaou stains. Lymph node swellings, with purulent or cheesy material as aspirate or with clinical suspicion of tuberculosis were stained by ZN stain.

Cytological findings were recorded and reported by a expert pathologist.

## RESULTS

The present study included 85 cases with age ranging from 5 months to 72 years out of which 52(61.1%) were females and 33(38.8%) were males. There was higher incidence of lesion in the neck region than in the head region. Lymph node involvement was the commonest constituting 41 cases i.e. 48.2%. Among these lymph node lesions, reactive lymphadenitis is the commonest constituting 15 cases, followed by tuberculous lymphadenitis (9 cases), chronic granulomatous lymphadenitis (9 cases), acute suppurative lymphadenitis (7 cases) and a single case of metastatic lymph node (1 case).. Skin and soft tissue lesions were the second most common lesions constituting 21 cases (24.7%). Epidermal inclusion cyst was the most common lesion (10 cases), followed by lipoma (6 cases), keratinous cyst (3 cases) and single case each of an organized abscess and hematoma. Thyroid was the third most common site to be involved with total 17 cases (20%) out of which 16 cases were females and 1 case was male. Colloid goiter is the most common thyroid lesion with 8 cases, followed by 03 cases of lymphocytic thyroiditis, 02 cases each of hyperplastic goiter, adenomatoid goiter and colloid cyst. Out of the 06 salivary gland lesions, 5 cases were of Pleomorphic Adenoma and a single case of sialadenitis.

Reactive lymphadenitis is the commonest inflammatory lesion. Colloid goiter is the commonest benign lesion.

**Table-1: Distribution of lesions according to site and gender**

Lesions	Female	Male	Total	Percentage
Thyroid	16	1	17	20%
Lymph node	25	16	41	48.2%
Skin and subcutaneous	7	14	21	24.7%
Salivary glands	4	2	6	7.05%
Total	52	33	85	100%

**Table-2: Age wise distribution of various head and neck lesions**

Age(years)	No of cases	Percentage
0-10	6	7.05%
11-20	8	9.4%
21-30	27	31.76%
31-40	19	22.35%
41-50	13	15.29%
51-60	3	3.52%
61-70	8	9.4%
71-80	1	1.17%
Total	85	100%

**Table-3: Distribution of various Lymph node lesions**

Lesions	Female	Male	Total
Reactive lymphadenitis	10	5	15
Granulomatous lymphadenitis	4	5	9
Tuberculous lymphadenitis	6	3	9
Acute suppurative	5	2	7
Metastasis	0	1	1
Total	25	16	41

**Table-4: Distribution of various Thyroid gland lesions**

Lesions	Female	Male	Total
Colloid goiter	8	-	8
Hyperplastic goiter	2	-	2
Adenomatoid goiter	2	-	2
Lymphocytic thyroiditis	3	-	3
Colloid cyst	1	-	2
Total	16	1	17

**Table-5: Distribution of various Salivary gland lesions**

Lesions	Female	Male	Total
Sialadenosis	1	-	1
Pleomorphic adenoma	3	2	5

**Table-6: Distribution of various skin and subcutaneous lesions**

Lesions	Female	Male	Total
Keratinous cyst	1	2	3
Epidermal inclusion cyst	3	7	10
Haematoma	-	1	1
Lipoma	3	3	6
Abscess	-	1	1
Total	7	14	21

## DISCUSSION

The present study was carried out in a peripheral hospital in northern India to know the cytomorphological pattern of various head and neck lesion. Most of the patients were of 20 to 30 year of age

group and most common clinical presentation was of cervical lymphadenopathy. Female patients were more compared to males. The present study was compared with various other studies as shown in table 7.

**Table-7: Showing comparison of distribution of head and neck lesions between our study and other national and international studies**

	Lymph node	Thyroid	Salivary Gland	Skin and Soft tissue
Shobha [5]	86	-	12	2
Shekhar H [6]	42	18	15.5	17.5
Sreedevi [7]	50.32	44.07	3.28	2.3
Pathak [8]	61.2	19.2	6.7	12.9
S.Khretapal [9]	64.1	16.9	4.1	13.8
Sanghavi AKB [10]	41	37	5	7
Kapoor S [11]	43	34	15	8
Patel D [12]	64	22.8	4.8	2
Our study	48.2	20	7.05	24.7

Study done by Sreedevi *et al.*, [7] at Andhra Pradesh in 2016 also coincided with our study where out of 304 cases studied 50% of head neck lesions were from lymph node, in that common lesion seen was reactive lymphadenitis, next was thyroid lesions, in thyroid lesions the commonest diagnosis they arrived

was of colloid goiter. The commonest salivary gland lesions they encountered was pleomorphic adenoma. They did not document any malignant salivary gland tumor. The common soft tissue lesions they documented were of epidermal cysts and lipoma. Study done by Sanghavi AKB *et al.*, [10], Shobha *et al.*, [5]

and Shekhar *et al.*, [6] had reactive lymphadenitis as the commonest lesion comparable to our study.

Histopathological examination is the gold standard diagnostic modality. Since this study was carried in a peripheral hospital where mostly people have a low socioeconomic status, hence FNAC is the best modality to diagnose head and neck lesions with high sensitivity and specificity and report can be provided to the patient in a day. FNAC also helps to narrow down the differentials and helps in the early management of the patients.

## CONCLUSION

FNAC is one of the best easy available, inexpensive procedure to diagnose head and neck lesions with a good sensitivity and specificity rate. It plays a vital role in diagnosis and therefore early patient management in a country like India since most of our population belongs to rural area.

## BIBLIOGRAPHY

- Orell, S. R., Sterrett, G. F., Walters, M. N. I., & Whitaker, D. (1992). *Manual and Atlas of Fine Needle Aspiration Cytology*. 2nd edn. New York: Churchill Livingstone; p. 2-36.
- Ahluwalia, H., Gupta, S. C., Singh, M., Mishra, V., Singh, P. A., & Walia, D. K. (2001). Spectrum of head-neck cancers at Allahabad. *Indian Journal of Otolaryngology and Head & Neck Surgery*, 53(1), 16-21.
- Mehrotra, R., Singh, M., Gupta, R. K., Singh, M., & Kapoor, A. K. (2005). Trends of prevalence and pathological spectrum of head and neck cancers in North India. *Indian journal of cancer*, 42(2), 89-93.
- El Hag, I. A., Chiedozi, L. C., Al Reyees, F. A., & Kollur, S. M. (2003). Fine needle aspiration cytology of head and neck masses. Seven years' experience in a secondary care hospital. *Acta cytologica*, 47(3), 387-392.
- Shobha, S. N., & Rajashekar, Y. R. (2017). Role of Fine needle aspiration cytology in Head and neck lesions. *Indian Journal of Pathology and Oncology*, 4(3), 408-412.
- Shekhar, H., Kaur, A., Agrawal, P., Pancharia, A., & Jadeja, P. (2014). Fine needle aspiration cytology in head and neck swellings: a diagnostic and therapeutic procedure. *Int J Res Med Sci*, 2(4), 1667-1671.
- Sreedevi, P., Kishore, K. C., & Parankusa, N. C. (2016). Diagnostic role of FNAC in evaluation of head and neck lesions. *IOSR-JDMS*, 15, 11-13.
- Pathak, R., Prasad, K. B. R., Rauniyar, S. K., Pudasaini, S., Pande, K., Koirala, S., ... & Basnyat, A. S. (2016). Fine needle aspiration cytology of head and neck lesions and its correlation with histopathology. *Journal of Pathology of Nepal*, 6(12), 985-989.
- Khetrapal, S., Jetley, S., Jairajpuri, Z., Rana, S., & Kohli, S. (2015). FNAC of head & neck lesions and its utility in clinical diagnosis: a study of 290 cases. *Nat J Med Res*, 5(1), 33-38.
- Sangavi, A. K. B., Itagi, I. R., Choudhari, S. Y., & Venkatesh, U. (2018). Evaluation of FNAC of head and neck swellings: a retrospective study. *Int J Otorhinolaryngol Head Neck Surg*, 4(1), 189-192.
- Kapoor, S., Bagga, P. K., Rupesh, S., Singh, A., Kumar, A., & Singh, H. (2017). Diagnostic accuracy of fine needle aspiration cytology in palpable lesions of head and neck in comparison to histopathology. *IJCMR*, 4(2), 449-453.
- Patel, D. N., Patel, P. B., Patel, H. V., & Gandhi, T. J. (2015). Fine needle aspiration cytology role in head and neck lesions. *IAIM*, 2(8), 99-104.