



CYTOPATHOLOGICAL SPECTRUM OF FNAC IN PALPABLE HEAD AND NECK LESIONS

Dr. Devendu Bose

Tutor, Pathology Department, Shaheed Nirmal Mahato Medical College, Dhanbad, Jharkhand.

Dr. Bejoy Chand Banerjee*

Professor, Pathology Department, Shaheed Nirmal Mahato Medical College, Dhanbad, Jharkhand. *Corresponding Author

ABSTRACT

Introduction: Head and neck lesions comprises a large number of congenital, inflammatory or neoplastic lesions including different anatomic sites and originating in different tissues and organs. Fine needle aspiration cytology (FNAC) is a simple, quick, feasible, repeatable and outpatient procedure with minimal risk of complication.

Aim: To study the role of FNAC and its utility in diagnosis of palpable head neck masses and to determine the spectrum of various lesions.

Materials And Methods: A retrospective study was conducted in pathology department of Shaheed Nirmal Mahato Medical College, Dhanbad, Jharkhand from January 2016 to December 2020 on patients with palpable head and neck swelling. Detailed clinical history of patient was noted. Aspirations were done by using 10 ml syringe and 22/23 gauge needles. Smears were stained with PAP Haematoxylin and Eosin and Leishman stain. Cytomorphological diagnosis was given.

Results: Out of 562 patients of head and neck swelling, 61.92% (348 cases) were of lymph node, 20.28% (114 cases) were of thyroid, 3.38% from salivary gland (19 cases), 14.06% (79 cases) from skin and soft tissue swellings. The most common diagnosis was reactive lymphadenitis (32.74%) followed by granulomatous lymphadenitis (18.33%). The mean age of study population was 32 years. There was female preponderance (88.59%) in thyroid lesions whereas lymph node lesions (60.91%), salivary gland lesions (73.68%) and soft tissue swellings (59.49%) were more common in males.

Conclusion: From our study we concluded that FNAC is simple, quick, inexpensive, repeatable and minimally invasive first line investigation for differential diagnosis of head and neck lesions.

KEYWORDS : Cervical, Lymphadenopathy, FNAC, Head and neck

INTRODUCTION:

A swelling is the most likely clinical entity to be encountered in the head and neck region [1]. Palpable head and neck swellings include various non-neoplastic and neoplastic lesions of lymph node, salivary gland, thyroid gland and soft tissue and it varies with age, sex and site. These lesions are evaluated by a detailed clinical history and examination with the aid of investigations like FNAC, USG and CT of the region and excisional biopsy. The common pathologies encountered in the head and neck region presenting as a lump are lymphadenitis (specific and non-specific, acute, chronic, reactive and granulomatous), thyroid swellings (goitre, cysts, nodules and carcinoma), salivary gland swellings (sialadenitis, cysts and carcinomas) lymphoproliferative lesions and the skin and soft tissue lesions like lipoma, epidermal (keratinous, dermoid) cysts etc.

FNAC a simple, inexpensive and rapid investigative is procedure for sampling superficial masses found head in and neck with minimal trauma and low complication rate. Masses located within the region of the head and neck, including salivary gland and thyroid gland lesions can be readily diagnosed using this technique [2,3].

Though fine needle aspiration cytology does not give the same architectural detail as histopathology but it is quick, relatively painless and the complications of biopsy are avoided [4]. Head and neck neoplasms is one of the major forms of cancer in India accounting for 23 % of all cancer in males and 6 % in female. [2,3] FNAC of head and neck mass is a generally well accepted technique with high specificity.[4] FNAC differentiates non neoplastic lesions from neoplastic lesions thus eliminating need of surgical intervention in these lesions which can be treated conservatively.[5]

MATERIALS AND METHODS:

This retrospective study was carried out in 562 patients with head and neck swellings in the pathology department of Shaheed Nirmal Mahato Medical College, Dhanbad,

Jharkhand during the period from January 2016 to December 2020.

All the palpable head and neck swellings were included and inaccessible swellings were excluded.

Clinical history and physical findings were noted and then FNAC was performed. The area to be aspirated was cleaned with spirit and a 22/23-gauge needle with 10ml syringe mounted on a syringe holder and multiple passes were made within the lesion, with sufficient negative pressure, the needle was removed, and the pressure was applied to the area of aspiration to avoid bleeding or hematoma formation. The aspirated material was smeared on clean glass slides and they were both wet-dried and air-dried for staining. Smears were stained by Haematoxylin and Eosin (H&E), May Grunwald Giemsa (MGG) and Pap stain. Special stain for Acid Fast Bacilli (Zeihl nelson stain) was carried out whenever required. The details regarding history of the patient, personal details of the patient, local examination findings and microscopic findings were recorded for the cytological interpretation.

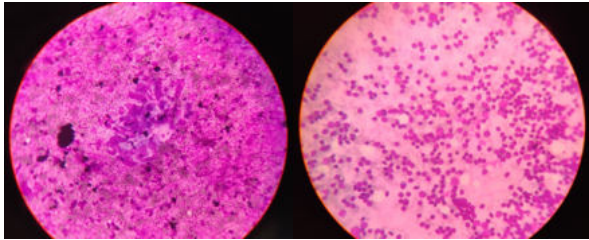
RESULTS:

During the study period, a total of 562 patients of head and neck lesions were reported in the pathology department for evaluation. Age of the patients ranged from 9 years to 72 years with majority (30.1%) belonging to the age group of 21-30 years (third decade) followed by 21.3% in fourth and 19.2% in second decade. The mean age of study population was 32 years.

There was female preponderance (88.59%) in thyroid lesions whereas lymph node lesions (60.91%), salivary gland lesions (73.68%) and soft tissue swellings (59.49%) were more common in males.

The most common diagnosis was reactive lymphadenitis (32.74%) followed by granulomatous lymphadenitis (18.33%).

Colloid goitre (15.48%) in thyroid lesions , epidermoid cyst (10.69%) in skin & soft tissue lesions and pleomorphic adenoma (2.51%) in salivary gland lesions were the most common.



Pic 1 Necrotizing Granulomatous Lymphadenitis

Pic 2 Reactive Lymphadenitis

Table 1

Age Group	Lesions				
	Thyroid	Salivary Glands	Lymph nodes	Skin and Subcutaneous tissue	Inconclusive
00-10	03	0	17	6	-
11-20	27	2	58	21	-
21-30	34	6	109	19	1
31-40	21	7	81	11	-
41-50	15	3	52	13	-
51-60	11	1	17	8	1
61-70	03	0	12	1	-
71-80	00	0	2	0	-
	114	19	348	79	2

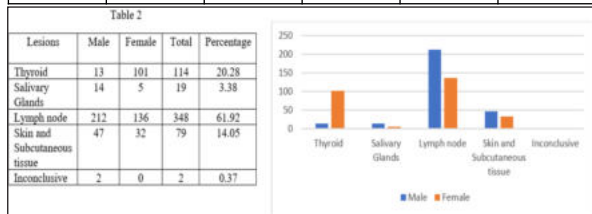


Table 3

Lesions	Cases	Percent age	
Thyroid	Colloid cyst	16	2.84
	Colloid Goitre	87	15.48
	Follicular neoplasm	7	1.24
	Suspicious Category	4	0.71
Salivary Glands	Sialadenitis	5	0.88
	Pleomorphic adenoma	14	2.51
Lymph nodes	Chronic granulomatous lymphadenitis	103	18.32
	Reactive lymphadenitis	184	32.74
	Acute suppurative	57	10.15
	Lymphoproliferative lesions	4	0.71
Skin and Subcutaneous tissue	Lipoma	19	3.38
	Epidermoid cyst	60	10.69
Inconclusive	2	0.35	
Total	562	100	

DISCUSSION:

Study done by Sreedevi et al [6] also coincided with this study where out of 304 cases studied and 50% of head neck lesions were from lymph node, having reactive lymphadenitis as the commonest lesion; next was thyroid lesions, in which the commonest diagnosis they arrived was of colloid goitre.

The commonest salivary gland lesions they found were of pleomorphic adenoma and in soft tissue lesions it was of epidermal cysts and lipoma.

Study done by SanghviAKB et al [9], Shobha et al [5] and Shekhar et al[7] had reactive lymphadenitis as the commonest lesion comparable to this study.

Study done by SanghviAKB et al [9] and S. Khetrpal et al [8] had inflammatory findings as the most common, which is comparable to this study.

There was female preponderance in the study done by Sanghvi AKB et al[9] and Kapoor S. et al [10]. Colloid Goitre is the commonest thyroid gland lesion in study done by Sanghvi AKB et al [10] comparable to this study.

Pleomorphic adenoma is the commonest Salivary gland lesion in study by Afnan Gul et al[11] comparable to this study. Rathore and team in Panacea conducted the study on head and neck masses on 756 cases. Lymph node swellings were more common followed by thyroid, skin and soft tissue lesions. Salivary gland lesions were least noticed in their study [12].

CONCLUSION:

From our study we concluded that FNAC is simple, quick, inexpensive, repeatable and minimally invasive first line investigation for differential diagnosis of head and neck lesions. However, advanced studies are required for establishing a more accurate trend of occurrence of head and neck swellings.

REFERENCES:

- Ahmad T, Naeem M, Ahmad S, et al. Fine needle aspiration cytology (FNAC) and neck swellings in the surgical outpatient. J Ayub Med CollAbbottabad. 2008 Jul-Sep;20(3):30-2.
- Gamba PG, Messineo A, Antoniello LM, et al. A simple exam to screen superficial masses: fine-needle aspiration cytology. Med PediatrOncol. 1995 Feb;24(2):97-9.
- Lee JC, Siow JK. Thyroid surgery--the Tan Tock Seng Hospital otolaryngology experience. Ann Acad Med Singapore. 2002 Mar;31(2):158-64.
- Kirk RM, Ribbens WJ. Clinical Surgery in General. 4th edition, Edinburgh: Elsevier; 2004.
- Shobha SN, Rajashekar YR. Role of Fine needle aspiration cytology in Head and neck lesions Indian Journal of Pathology and Oncology, July-September 2017;4(3):408-412.
- Sreedevi P, Kishore Kumar, Parankusa N C. Diagnostic Role of FNAC in evaluation of Head and Neck lesions. Journal of Medical and Dental sciences.2016;15(9):11-13
- Shekhar H, Kaur A, Agrawal P, Pancharia A, Jadeja P. Fine needle aspiration cytology in head and neck swellings: a diagnostic and therapeutic procedure. Int J Res Med Sci 2014;2(4):1667-71
- Khetrpal S, Jetley S, Jairajpuri Z, Rana S, Kohli S. FNAC of head & neck regions and its utility in clinical diagnosis: A study of 209 cases. Nat J. Med Res 2015;5(1):33-8
- Sangavi AKB, Itagi IR, Choudhari SY, Venkatesh U. Evaluation of FNAC of head and neck swellings: a retrospective study. Int J Otorhinolaryngol Head Neck Surg 2018;4(1):189-92.
- Kapoor S, Bagga PK, Rupesh S, Singh A, Kumar A, Singh H. Diagnostic accuracy of fine needle aspiration cytology in palpable lesions of head and neck in comparison to histopathology. International Journal of Contemporary Medical Research 2017;4(2):449-453
- AfnanGul, Vani B.R., Srinivasa Murthy V. Fine Needle Aspiration Cytology Profile of Head and Neck Lesions in a Tertiary Care Hospital. Indian Journal of Pathology 2017;6(2):372-377
- Rathore H, Jethani N, Panchori G, Bansod P, RatnawatKalpana. Cytomorphology of Head and Neck lesions: A study in tertiary care hospital. Panacea journal of Medical Sciences. 2015;5(3):145-149.