



ORIGINAL ARTICLE

Disease Profiles of Head and Neck Lesions Diagnosed by Fine Needle Aspiration Cytology at a Tertiary Care Hospital in Bangladesh

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Abstract

Background: Head & Neck lesions encompass a multitude of congenital, inflammatory or neoplastic lesions including several anatomic sites and originating in different tissues and organs. FNAC is a simple, quick, feasible, cost effective and repeatable outpatient procedure with minimum risk of complications. **Objective:** The purpose of the present study was to study the spectrum of head & neck lesions attending in outpatient. **Methodology:** The study was carried out in the department of Pathology, Monno Medical College. This present cross-sectional study included the patients presented with palpable head & neck swelling from January 2018 to September 2019 in outpatient (mostly ENT & HNS OPD) department of Monno Medical College & Hospital, Monno City, Gilondo, Manikgonj. Aspirates were done using mostly 5ml syringe and 23-gauge needle. Smears were stained with Papanicolaou stain. **Results:** Out of 210 patients of head & neck lesions studied, Lymph node (50.47%) was the predominant site aspirated with chronic nonspecific lymphadenitis & lymphoid hyperplasia being the commonest lesion. Thyroid lesions constituted 31.90% cases followed by soft tissue (11.9%) and salivary gland (5.71%). **Conclusion:** In conclusion FNAC is simple, quick, inexpensive and minimally invasive technique to diagnose different types of head and neck swelling. It could differentiate the infective process from neoplastic one and avoid unnecessary surgeries. [*Journal of Current and Advance Medical Research, January 2021;8(1):21-24*]

Keywords: FNAC; head and neck; diagnostic

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Introduction

A huge number of head and neck swellings are frequently manifests as a palpable and /or visible swellings in the neck. These swellings may be congenital/developmental, inflammatory/reactionary or neoplastic (primary/secondary). FNAC is relatively painless, produces speedy results and cheap. FNAC is highly suitable for debilitated patients, is repeatable, useful for multiple lesions and has low risk of complications. FNAC is applicable to easily palpable lesions of thyroid, breast, salivary glands, superficial lymph nodes, superficial growth of skin and soft tissue. So that a definitive preoperative tissue diagnosis of the head & neck lesion allows planning of appropriate surgery and relevant patient counseling.

With the help of newer imaging technique FNAC of deeper structures is easily possible. Palpable head and neck swelling include various non-neoplastic and neoplastic lesions of lymph node, salivary gland, thyroid gland and soft tissue. It also helps in deciding the line of treatment and taking decision about the surgical procedure¹. The purpose of the present study was to study the spectrum of head & neck lesions attending in outpatient.

Methodology

This study was done in the Department of Pathology, Monno Medical College, Manikgonj, Bangladesh. The present prospective study was conducted on 210 patients irrespective of age and sex with palpable head and neck swelling over a period of 21 months from January 2018 to September 2019 in ENT & HNS OPD, of Monno Medical College & Hospital, Monno City, Gilondo, Manikgonj. Clinical history related to the lesion was taken. Local examination of the swelling was done accordingly. With all aseptic precautions basic equipment were used to perform FNA. Disposable 5ml plastic syringes, 23 gauge needles, gauze pads, glass slides, alcohol, gloves, Coplin jar for immediate wet fixation of smears, container for collection of fluid from cystic lesion.

Technique: After explaining of the procedure to the patient, the swelling was palpated carefully. The skin was cleaned with an antiseptic and fixed with the thumb and index finger of one hand in a position favorable for needle aspiration. Disposable syringe with needle was inserted at convenient angles to the lesions, the plunger of the syringe was drawn out, thus creating a negative pressure within syringe. The needle was moved up and down several times and moved in different directions to

collect sample from different surrounding areas. Then the plunger was slowly released up to equalize the pressure in the syringe, the needle was then withdrawn. No anesthesia was required. Both aspiration and non-aspiration technique was used to perform FNAC whenever required. FNAC was done without ultrasound guidance on well palpable and well accessible swelling. Aspirations taken from various sites include lymph node, thyroid, salivary gland and soft tissue. The needle was detached from the syringe, vacuum was created, the needle was attached again and contents of the needle were expelled slowly and carefully, over the dry clean grease free glass slides. The aspirates were lightly spread with the help of another glass slide. Two to four smears were immediately wet fixed in 95% ethanol to ensure fixation. Wet fixed smears in 95% ethanol were stained with Papanicolaou stain. Cytomorphological diagnosis was given depending upon pathology.

Results

Out of 210 patients of head & neck lesions studied, Lymph node (50.49%) was the predominant site aspirated. Thyroid lesions constituted 31.90% followed by soft tissue 11.90 % & salivary gland (5.71 %) (Table 1).

Table 1: Distribution of Cases On The Basis Of Tissue/ Organ Involved

Organ/ tissue	Frequency	Percent
Lymph node	106	50.49
Thyroid	67	31.90
Soft tissue	25	11.90
Salivary gland	12	5.71
Total	210	100

Out of 106 cases of lymph node lesions, chronic non-specific lymphadenitis & lymphoid hyperplasia (reactive lymphadenitis) was the predominant (69.8%) cause of lymphadenopathy followed by tubercular lymphadenitis in 17(16.0%) cases. Metastatic lesions constitute 10(9.4%) cases (Table 2).

Table 2: Distribution of Various Lymph Node Lesions

Lesions	Frequency	Percent
Acute Suppurative Lymphadenitis	1	0.94
Chronic Nonspecific Lymphadenitis & Lymphoid Hyperplasia	74	69.83

(Reactive lymphadenitis)		
Granulomatous Lymphadenitis (tuberculous)	17	16.03
Granulomatous Lymphadenitis	04	3.77
Metastatic*	10	9.43
Total	106	100

*Squamous cell carcinoma=8; Adenocarcinoma=2

Out of 67 cases of thyroid lesions 61(91.04%) cases were females and 6(8.96%) cases were males. 51(76.13%) cases were of nodular colloid goiter with or without coexistent cystic changes. 12(17.91%) cases were of simple colloid goiter. However, cases of Hashimoto’s thyroiditis and follicular neoplasm were 3(4.47%) and 1(1.49%) respectively. Among these 41(61.19 %) cases were at the age of 3rd and 4th decades (Table 3).

Table 3: Distribution of various Thyroid lesions

Lesions	Frequency	Percent
Simple colloid goiter	12	17.91
Nodular colloid goiter	51	76.13
Hashimoto’s thyroiditis	03	04.47
Follicular neoplasm	01	01.49
Total	67	100

FNAC of soft tissue lesions include 11(40.7%) cases of abscess and 6(22.2%) cases of cystic lesion (Table 4).

Table 4: Distribution of Various Soft Tissue Lesions

Lesions	Frequency	Percent
Abscess	11	40.74
Epidermoid cyst	05	18.52
lipoma	05	18.52
Cystic lesion	06	22.22
Total	27	100.0

In salivary gland lesions, pleomorphic adenoma was observed in 7(58.3%), sialadenitis in 3(25.0%), and mucoepidermoid in 2(16.7%) cases (Table 5).

Table 5: Distribution of Various Salivary Gland Lesions

Lesions	Frequency	Percent
Sialadenitis	03	25.0
Pleomorphic adenoma	07	58.3
Mucoepidermoid	02	16.7

carcinoma		
Total	12	100

In gender wise distribution shows that female preponderance in lymph node 63(59.4%) and thyroid lesions 62(92.5%) than male. In contrast, majority cases of soft tissue lesion 15(60%) were found in male than female (Table 6).

Table 6: Gender Distribution of Various Lesions

Organ	Male	Female
Lymph Node	43(40.6%)	63(59.4%)
Thyroid	05(7.5%)	62(92.5%)
Soft Tissue	15(60.0%)	10(40.0%)
Salivary Gland	6(50.0%)	6(50.0%)

Discussion

The technique was introduced in the 1930s by Martin and Ellis in the United States, but it never became widespread². Since the 1950’s it has been used extensively in Scandinavia and in Holland. Fine Needle for aspiration were first introduced in Europe in the 1950’s by Lopez-Cardozo in the Netherlands and Soderstrom in Sweden. In Bangladesh it has been started in 1990s. Palpable lesions of head and neck include variety of developmental, inflammatory and neoplastic lesions. The present study was carried out over a period of 21 months to find out the frequency of a variety of pathological conditions and to find out the accuracy of FNAC as a rapid diagnostic tool in outdoor patients. The present study also compares its findings with various national and international studies published in the literature³.

This present study has included patients from all age group (4 to 90 years). In the present study the peak age group was found 2nd to 4th decade constituting 119(56.7%) cases. This is in concordance with study by others⁴⁻⁶. Majority of patients were females with the male to female ratio of 1:2.04. Similar results of female preponderance were also reported by Kishor et al⁷ and Muddegowda et al⁸. Predominant site of FNAC was lymph nodal lesions (50.5%) followed by thyroid gland. Similar results reported by various studies^{3,7-8,11}. In lymph nodal lesions, chronic nonspecific lymphadenitis & lymphoid hyperplasia (reactive lymphadenitis) was the most common pathological findings followed by tuberculous lymphadenitis.

FNAC of thyroid lesions was the next common site in our study. Nodular colloid goiter (76.11%) was the predominant finding. Female (91.04%)

preponderance was observed in FNAC of thyroid lesions in our study with similar findings reported by Muddegowda et al⁸.

In salivary gland lesions, sialadenitis comprised 25% followed by pleomorphic adenoma in 58.34% in our study. Himanshu et al⁹ also reported that pleomorphic adenoma is more common than sialadenitis. But Thakur et al¹⁰ and Sreedevi et al¹¹ reported that sialadenitis was the most common salivary gland lesion.

Conclusion

It was concluded from the present study that reactive lymphadenitis is the commonest problem in patients presenting with neck swelling in our set-up. Our study found that FNAC is a simple, safe, quick, cost-effective, minimally invasive technique to diagnose different types of head and neck swellings. Thus, FNAC can be recommended as a first line of investigation in the diagnosis of head and neck swellings. It may also help the surgeon to select, guide and modify surgical planning in patients requiring surgery.

References

1. Koss Leopold G. Diagnostic Cytopathology and its Histopathological Basis, 4th edn. J.B. Lippincott: Philadelphia, 1992;1268–82
2. Martin HE, Ellis EB. Biopsy of needle puncture and aspiration. *Ann Surg* 1930;92:169-81
3. Patel DN, Patel PB, Patel HV, Ghandhi TJ. Fine needle aspiration cytology role in head and neck lesions. *IAIM* 2015;2(8):99-104
4. Singal P, Bal MS, Kharbanda J, Sethi PS. Efficacy of fine needle aspiration cytology in Head and Neck lesions. *Int J Med and Dent Sci* 2014;3(2):421-30
5. Huq MM, Ali IM, Huque SMN, Alam KMN, Sattar AM, Tarafder KH. Evaluation of neck swelling by cytological and histopathological examination. *Bangladesh J Otorhinolaryngol* 2012;18(1):23-29
6. Uddin MS, Abdullah M, ABMK. Alam; Correlation between FNAC finding and histopathological diagnoses of neck masses- A study of sixty cases. *Medicine Today* 2012;23(2):83-7
7. Suryawanishi Kishor H., Dample Rajshri P. David Nand kumar V. Tayde Yogesh. Spectrum of fnac in palpable head and neck lesions in a tertiary care hospital in India: a 3 years study. *Indian Journal of Pathology and Oncology* 2015;2(1);7-13
8. Muddegowda PH, Srinivasan S, Lingegowada JB, Ramkumar KR, Murthy KS. Spectrum of cytology of Neck lesions: Comparative study from two centres. *Journal of Clinical and Diagnostic Research* 2014;8(3):44-45
9. 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):1667-1671
10. Thakur AS, Gahine R, Kulkarni V. Evaluation of fine needle aspiration cytology in the diagnosis of head and neck masses and its correlation with histopathological findings. *Int J Adv Med.* 2016;3(3):699-707
11. Sreedevi P, Kishore K Ch, Parankusa NC. Diagnostic role of FNAC in evaluation of head & neck lesions. *IOSR Journal of Dental and Medical Sciences (IOSR JDMS)* 2016;15(9):11-13