

Spectrum of Cytology of Neck Lesions: Comparative Study from Two Centers

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ABSTRACT

Background: The objective of this descriptive study was to observe the frequency of various pathological conditions detected in FNAC of patients presenting with neck swellings coming from two different regions of southern India.

Materials and Methods: This study included 100 consecutive patients from each region (Region 1: Wyanad, Region 2: Salem) presenting to the department of Pathology with swelling in the neck region as the chief complaint. All age groups were included. All patients underwent FNAC and results were recorded. Frequency of various pathologies was determined.

Results: Thyroid lesions were predominant in both the regions with colloid goiter being the commonest lesion followed by lymphadenitis. Metastasis was more common compared to primary malignancies in Salem due to the elderly population under study.

Conclusion: Non-neoplastic lesions were commonly encountered in our study which is in accordance with findings in similar studies conducted in other developing countries. FNAC should be the primary investigation of choice as it is inexpensive, safe and has a high degree of diagnostic accuracy.

INTRODUCTION

Neck lesions are frequently encountered in clinical practice and found responsible for significant morbidity and mortality in India. Some of the lesions of the neck region include Goiter, Tuberculosis & other chronic inflammatory lesions, Pleomorphic adenoma & cysts. Malignant lesions-primary as well as metastatic, common to the cervical group of lymph nodes, are also frequently noted. Neoplasms of neck region account for majority of cancers in India accounting for 23% of all cancers in males and 6% in females. The increased prevalence of malignancies in neck area compared to other areas may be due to use of tobacco in various forms, poor oral hygiene, and viral infections [1-3].

In the last two decades, fine needle aspiration cytology (FNAC) has become the primary investigation of choice in the evaluation of masses in the head and neck area, reasons being its high degree of diagnostic accuracy, cost-effective & minimal disruptive nature of the procedure. The clinical value of FNAC is limited not only to neoplastic lesions but also valuable in the diagnosis of inflammatory, infective and degenerative lesions as well [3,4]. In case of cystic swellings in the neck, FNAC can be both diagnostic as well as therapeutic. The technique can be performed in the outpatient department and causes minimal trauma to the patient with virtually no complications & risks involved. However FNAC cannot replace histopathology in the diagnosis of follicular neoplasms of thyroid [5].

The purpose of this study was to compare neck lesions incidence in two geographically diverse locations of southern India.

MATERIALS AND METHODS

This study was conducted on 100 consecutive cases of FNAC in each institution from Jan 2013 onwards. One was situated in a hilly region in Kerala (Wyanad) and another, a city in Tamilnadu (Salem).

FNAC was done in the outpatient pathology block of the hospital. Aspiration was done using a 10 ml syringe with 23/24 gauge needle. Both aspiration and non-aspiration technique (predominantly thyroid) were used. Slides were prepared and stained with H&E, Giemsa and Pap. Reporting was done by cytologists. Repeat sampling was done in few cases due to inadequate sampling reported.

Keywords: Thyroid, FNAC, South India

Inclusion criteria included consecutive 100 patients irrespective of their sex and age group with a lump/mass in the neck area presenting to the cytology department. Any patient with mass other than neck masses was categorically excluded from the study.

Site/nature	Lesions	Region 1 (Wyanad)	Region 2 (Salem)
Thyroid			
Non-neoplastic	Colloid goiter	44	37
Benign thyroid lesion possibly	Lymphocytic thyroiditis	7	8
	Hyperplasia	4	0
Neoplastic	Benign neoplasms	7	3
	Malignant neoplasms	6	7
Lymphnode			
Non-neoplastic	Non-specific lymphadenitis / reactive lymphadenitis	13	7
	Granulomatous	4	12
	Suppurative lymphadenitis	3	6
	Cysticercosis	1	
Neoplastic	Metastases	1	7
	Lymphomas	0	1
Salivary gland			
Non-neoplastic	Sialadenitis	2	1
Neoplastic	Benign	0	6
	Malignant	0	1
Others	Lipoma	1	0
	Cysts	5	1
Inconclusive / acellular / unsatisfactory		2	3
Total		100	100

[Table/Fig-1]: Showing prevalence of various lesions in region 1 and region 2

Location	Present study – Wyanad	Present study – Salem	Peshawar [9]	Saudi Arabia [10]	Malaysia [6]
Number of patients	100	100	50	225	37
Year of study	2013	2013	2008	2003	2013
Duration of study	3 months	3 months	1 year	5 years	1 years 5 months
Reactive/ non-specific/ suppurative/ infectious/ lymphadenitis (%)	17	13	18	33	8
TB lymphadenitis (%)	4	12	36	21	4
Malignant neoplasms (%)	7	16	14	13	5
Cysts / goiter/ hyperplasia (%)	60	46	10	11	9
Benign neoplasms (%)	8	9	8	9	6
Sialadinitis (%)	2	1	6	5	5
Inconclusive (%)	2	3	8	8	0

[Table/Fig-2]: Showing present study in comparison with other international studies

RESULTS

This study included 100 consecutive cases from each institution. Cases from Wyanad included 23 males and 77 females. Most of the patients were in third decade. Colloid goiter was the commonest diagnosis followed by non-specific lymphadenitis. Cases from Salem included 35 males and 65 females. Patients were mostly in fourth and fifth decade predominantly. Again colloid goiter was the common, followed by granulomatous lymphadenitis. Amongst malignancies, lymph node metastasis was common cytological diagnosis in Salem, while thyroid carcinomas were more common in Wyanad region. Other pathologies are as shown in [Table/Fig-1].

DISCUSSION

This study was carried out to find the relative incidence of neck lesions in two different regions in southern India. FNAC was used as the primary investigation. The study shows a diagnostic yield of 98% and 97% in Wyanad and Salem respectively. This conclusive diagnostic yield included repeat FNAC's after the failure of the first attempt and reporting is below standard sample range of 15% [6-8].

Among the neck lesions studied, maximum lesions were of thyroid. Goitres were the predominant diagnosis in thyroid. Savithri et al., in a similar study conducted in Gujarat, India also showed thyroid lesions with goiter as the predominant finding. In other international studies [Table/Fig-2] in Pakistan, Saudi Arabia and Malaysia, Tuberculous or Reactive/Non-specific lymphadenitis were dominant lesions. In our study lymph node lesion was the next common lesion with Non-specific/Reactive lymphadenitis being more common in Wyanad and Granulomatous lymphadenitis being more common in Salem region. Study by Savithri et al., showed almost equal incidence in relation to Non-specific/Reactive and Granulomatous lymphadenitis [6,8-10].

In our study non-neoplastic lesions were predominant. Salem region had more malignant lesions compared to Wyanad region possibly due to more elderly population in study group in Salem region. Similar epidemiological variation between developed and developing countries is seen in previous studies. Infections like tuberculosis are more common in developing countries whereas neck malignancies are more common in developed countries. India being a developing country shows similar pattern to other developing countries with inflammatory and non-neoplastic lesions being more common cause of neck masses [6,11].

FNAC is a safer choice for initial evaluation of masses suspicious of malignancy as the frequency of needle seeding of tumor cells in the procedure is reported as low as 0.003-0.009% [6]. Hence, considering this range, tumor risk in FNAC is almost nonexistent in comparison to excision biopsy.

Results were compared with other similar international studies and are as shown in [Table/Fig-2], [6,9,10].

CONCLUSION

It is concluded from the comparison study that Goitrous lesions are the commonest problem in patients presenting with neck swelling in our country followed by Reactive/Non-specific lymphadenitis and malignant neoplasms especially metastases to cervical lymph nodes. Despite the study being in two geographically diverse locations, spectrum of lesions encountered were almost similar.

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