

Original Research Article**FNAC of Head and Neck Lesions in Paediatric Age Group****Madhu Kumar R.¹, Meghana P.², Vidya Vasudev³, Bharathi M.⁴**

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Abstract

Introduction: Fine Needle Aspiration Cytology is well established diagnostic procedure for the head and neck region. It is simple and rapid procedure. Most common head and neck lesions in paediatric age group are of inflammatory, neoplastic and developmental conditions.

Objectives: To study the role of fine needle aspiration cytology of head and neck lesions in paediatric age group.

Materials and methods: This was a hospital based study where two hundred cases of head and neck lesions of the paediatric age group [0-18 years] were studied for cytomorphology through fine needle aspiration cytology.

Results: There was a male predominance in the case distribution [67%]. Lesions in the lymph nodes were 82%, thyroid - 13%, epidermal/dermoid cyst - 3%, salivary gland - 1%, and benign spindle cell lesion - 1% among the head and neck lesions.

Conclusion: FNAC is an important investigational tool in children for identifying and planning the medical management of inflammatory and infectious conditions. In general, FNA cytology permits a rapid and high diagnostic accuracy, thus making it a desirable method for diagnosing lesions in children.

Keywords: Head And Neck, Paediatric Age Group, FNAC.

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Introduction

Fine needle aspiration cytology (FNAC) is a well-established diagnostic procedure for evaluating mass lesions in adult patients. It is simple and rapid procedure. It has been slow in gaining popularity in pediatric patients compared with its utilization in adult patients [1]. Only few studies which were done on paediatric FNAC in the regions of the head and neck [2]. Most common head and neck lesions in paediatrics age group are of inflammatory,

neoplastic and developmental conditions [3].

In this study we are trying to show the importance of FNAC in the paediatrics patient where this simple procedure can act as an effective diagnostic tool.

Materials and methods

The study was done in the Department of Pathology, Mysore medical college and research institute. 200 children with the age group between

0 and 18 years, presenting with head and neck lesions were considered.

The following staining methods were used:

1. Haematoxylin and Eosin
2. Papanicolaou Staining

Results

FNAC was performed on 200 cases below 18 years of age. Out of 200 cases, maximum number

of patients i.e., 124 cases 62% were between 11 and 18 years [Table 1]. Male to female ratio was 2.4:1. The most common site for FNAC was cervical lymph node swelling 82% (164/200). [Table 2], followed by thyroid swelling 13% (26/200) and epidermal/dermoid cyst 3%, salivary gland 1%, and benign spindle cell lesion 1% in the head and neck lesions.

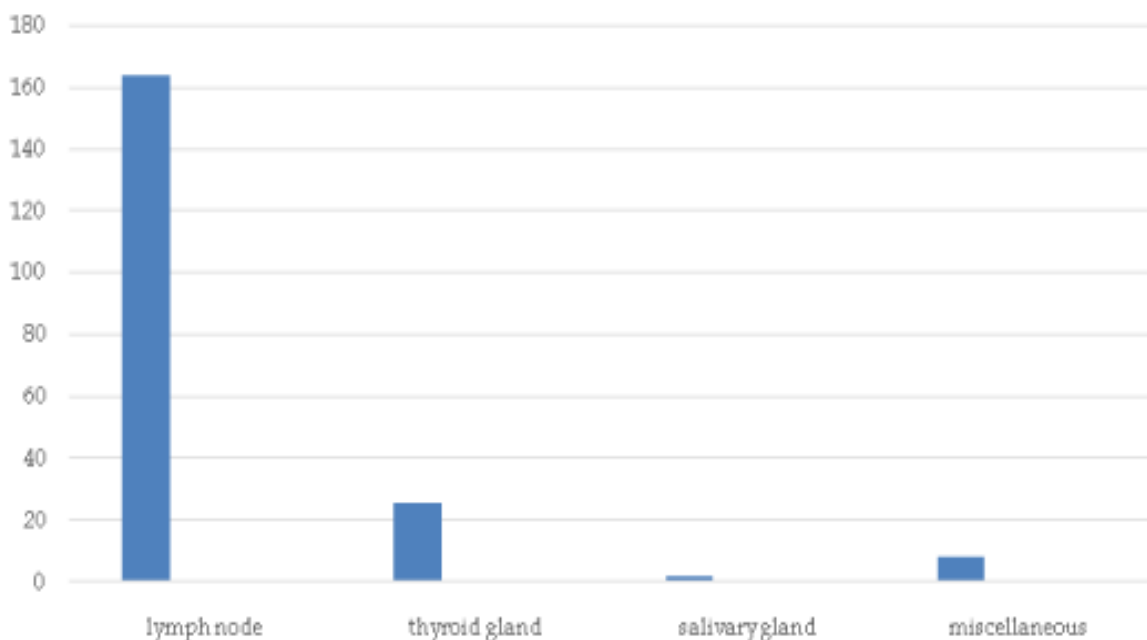
Reactive lymphadenitis was the most common overall with 104 out of 164 cases (63.4%) of lymph

Table 1: Age and sex distribution

Age		Sex	
		M	F
0-5	20%	12%	8%
6-10	28%	18%	10%
11-18	52%	37%	15%

Table 2: Distribution of lesions in different organs

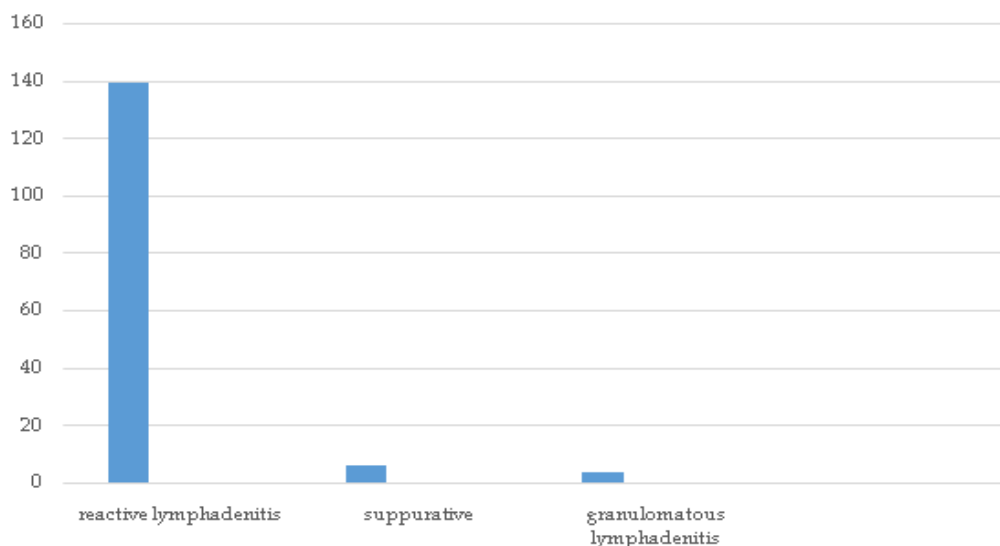
Organ	No. of cases	Percentage
Lymph node	164	82%
Thyroid	026	13%
Salivary Gland	002	2%
Miscellaneous	008	4%
Total	200	



Graph 1:

Table 3: Cytomorphological diagnosis of lymph node lesion

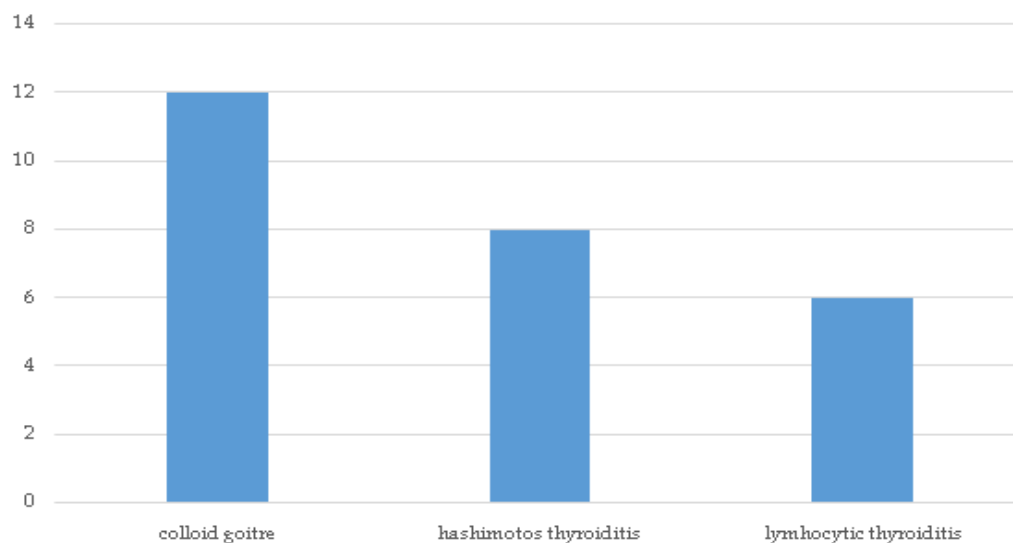
Lesions	No. of cases	Percentage
Reactive lymphadenitis	140	86.3%
Suppurative lesion	6	3.7%
Granulomatous lymphadenitis	16	9.9%



Graph 2:

Table 4: Cytomorphological diagnosis of thyroid lesion

Lesions	No. of cases	Percentage
Colloid goitre	12	46.1%
Hashimoto's thyroiditis	8	30.8%
Lymphocytic thyroiditis	6	23.1%



Graph 3:

node swelling accounting for it. Colloid goitre [Figure 5] was the commonest amounting to 12 out of 26 cases of thyroid (46.1%). Miscellaneous lesions included epidermal cyst (6 cases) and benign spindle cell lesion (2 cases).

Discussion

In adults the use of FNAC is more popular for superficial and deep masses. But, in children there are only few studies regarding FNAC and these too are mostly elaborating its use in areas other than head and neck [6].

In a study done by Maheshwari, et al., majority of cases were in the age group of 11-14 years (40.82%), with male: female ratio of 2:1 [4]. In the present study, maximum number of patients 53% (180/327) were in the age group of 11-18 years, with male: female ratio of 2.4:1.

In a study done by Annam, et al., the commonest cytopathological finding in cervical lymph node was reactive lymphadenitis in 58.08%, followed by granulomatous lymphadenitis and tubercular lymphadenitis in 30.55% and 29.01% respectively. In the present study, the most common cyt

Table 5: Comparison of Various Studies in Pediatric Population

Comparative study	Handa U et al	Mohan A et al ⁶	M Jain et al	Amy Rapackwicz et al	Present study
Cases	692	215	748	85	200
Sex	M:F 1.5:1	M:F 1.52:1	male	Male (69.4%)	M:F 2.03:1
Age group	0-14years	0-15years	0-12years	0-18years	0-18years
Most common site	Cervical LN(84.3%)	Cervical LN(83.72%)	Cervical LN(81%)	Cervical LN(69.4%)	Cervical LN (82%)
Non malignant	98.46%	93.67%	98.5%	83%	100%
Malignant	1.54%	2.33%	1.5%	17%	0%

Table 6: Comparison of Studies on Head and Neck Lymph nodes in Children

Comparative study	Handa U et al ⁸	Mohan A et al ⁶	M Jain et al ⁷	Amy Rapackwicz et al ⁹	Present study
Lymph nodes	84.3%	83.72%	81%	69.4%	82%
Reactive hyperplasia	63%	51.1%	60.6%	66%	86.3%
Suppurative	6%	8.3%	7.1%	10.1%	3.7%
Granulomatous lymphadenitis	25%	38.3%	30.5%	15%	9.9%
Hodgkin's lymphoma	4 cases	3 casses	2 cases	2 cases	
Non-Hodgkin's lymphoma	2 cases	1 cases	5 cases	3 cases	

opathological finding is also reactive lymphadenitis in 86.3% (140/162), followed by suppurative lymphadenitis 3.7% (4/158) and granulomatous lymphadenitis in 9.9% (16/158) [5].

Colloid goiter was the main finding in thyroid lesions. M. Jain [7] also got similar findings in their study.

In this study we have cases of epidermal/dermoid cyst which is similar to M Jain [7] and Mittra P [2].

Findings in salivary gland lesions were pleomorphic adenoma and sialadenitis. M. Jain [7] got similar findings.

Conclusion

FNAC has an expanding diagnostic potential in the pediatric population as more lesions are described. As a safe, minimally invasive, and rapid procedure, clinicians can reliably utilize FNAC in the management of head and neck lesions in children. Along with a reassurance of benignity, confirmation of malignancy can be achieved and treatment initiated.

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