



## Cytological Pattern of Thyroid Lesions at Government Medical College Jammu-A Hospital based study.

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### ABSTRACT

**Introduction** - Thyroid lesion is a common lesion of endocrine system worldwide including India. FNA is a simple ,safe,rapid, cost effective diagnostic method and is a valuable adjunct to preoperative screening in the diagnosis of thyroid lesions and a valuable tool in the management of patients.

**Aim**- To study the cytological pattern of various lesions of thyroid among patients coming to the cytology section of GMC Jammu.

**Material and Methods**- It was a retrospective study conducted over a period of 2 years from January 2015 to December 2016 ,in the department of Pathology; Government Medical College Jammu. The data was collected from cytology registration forms.

**Result**- During the study period of 2 years , 280 thyroid cytology were done in the cytology section of Department of Pathology , Government Medical College Jammu. In this study patient age ranged from 11- 82 years ,with highest prevalence seen between 31-40 years of age. Female patients were more as compared to males . Among 280 cases,240 cases(85.7%) were of benign cytology, 6 cases were Neoplastic (2%) and 22cases( 7.8%) of thyroid malignancies were seen. However 12 cases ( 4.2%)were reported to be Non diagnostic . Most of the lesions were benign 240(85.7%) cases . The most common diagnosis was colloid goiter comprising of (46.4%) followed by Hashimotos Thyroiditis (19.2%),Adenomatoid goiter(12%), Malignancies (7.8% ), Lymphocytic thyroiditis(5% ), colloid cyst (2%), Neoplastic (2%) and granulomatous thyroiditis (0.7% ) each. The smears reviewed were also diagnosed according to Bethesda system of reporting pattern for thyroid.Bethesda category I included (10%), category II (85.7%) ,category III (0% ) ,category IV (2% ),category V (0% ) ,category VI (7.8%). Maximum no.of cases were seen in Bethesda category II followed by category I, category VI,category IV with none of the cases falling in category III and V.

**Conclusion**- Various lesions of thyroid tend to show geographical variation among regions and knowing it is important in guiding approach to the management of the patients. FNAC is a simple ,safe,rapid, cost effective diagnostic method and is a valuable adjunct to preoperative screening in the diagnosis of thyroid lesions and a valuable tool in the management of patients .

**KEYWORDS :** Thyroid, Colloid Goitre, Bethesda .

### Introduction

Thyroid lesion is a common lesion of endocrine system worldwide including India. FNA is a simple ,safe,rapid, cost effective diagnostic method and is a valuable adjunct to preoperative screening in the diagnosis of thyroid lesions and a valuable tool in the management of patients(1)(2) .The main indication for fine needle aspiration of the thyroid is a thyroid nodule. The prevalence of thyroid nodules depend how carefully one looks for them. Palpable nodules have been seen in 4 to 7% of adults but prevalence is much higher when non palpable nodules are included (20 to 70%). Given the high prevalence of nodules , combined with impracticality of surgically excising all nodules, FNA plays a vital role as a screening test. Cytology test results in decrease percentage of patients requiring surgery while increasing the yield of malignancy. At the Mayo clinic , a decrease from 67% to 43% in 1 year in patients requiring surgery ,after FNA was introduced in 1980 was seen (3).Various lesions of thyroid tend to show geographical variation among regions, this study was done to find out the frequency and proportions of various cytological lesions among patients coming to our department.

**Aim**- To study the cytological pattern of various lesions of thyroid among patients coming to the cytology section of GMC Jammu.

**Material and Methods**- It was a retrospective study conducted over a period of 2 years from January 2015 to December 2016 ,in the department of Pathology; Government Medical College Jammu. The data was collected from cytology registration forms. Data on the cytological features, age and sex were retrieved. For all the patients Papanicolaou stained and Romanowsky stained slides were available for review. The lesions were classified as Non diagnostic, benign ,Neoplastic and Malignant. The cytological Diagnosis was also classified according to Bethesda system of reporting pattern.(4)

### Results

During the study period of 2 years , 280 thyroid cytology were done in the cytology section of Department of Pathology , Government Medical College Jammu. In this study patient age ranged from 11- 82

years ,with highest prevalence seen between 31-40 years of age. Female patients were more as compared to males .Male to female ratio was 1:2.5. Among 280 cases, 240 cases(85.7%) were of benign cytology, 6 cases of follicular neoplasm (2%) and 22cases( 7.8%) of thyroid malignancies were seen. However 12 cases ( 4.2%) were reported to be Non diagnostic .Most of the lesions were benign 240(85.7%) cases . The most common diagnosis was colloid goiter comprising of (46.4%) followed by Hashimotos Thyroiditis(19.2%),Adenomatoid goiter(12%), Malignancies (7.8% ),Lymphocytic thyroiditis(5% ), colloid cyst (2%)and granulomatous thyroiditis (0.7% ) each. Thyroid malignancies were recognized in 22 cases( 7.8%). 14 cases ( 5% ) of papillary carcinoma followed by 4 cases(1.4% ) of Medullary carcinoma and 2 cases of anaplastic carcinoma (0.2%) thyroid were seen .Follicular neoplasm was seen in 6 patients(2%).The smears reviewed were also diagnosed according to Bethesda system of reporting pattern for thyroid.Bethesda category I included (10%), category II (85.7%) ,category III (0% ) ,category IV (2% ),category V (0% ) , category VI (7.8%). Maximum no.of cases were seen in Bethesda category II followed by category I, category VI,category IV with none of the cases falling in category III and V.

### Discussion

Thyroid FNA is commonly performed as an outpatient procedure relied by most clinicians and has radically changed the management of patients with thyroid disease. In our study highest no. of cases were seen between 31-40 years 220 cases (78.5%) similar to that seen in study done by Kumbhakar D et al (5). However Gupta V et al ( 6 )reported highest no. of cases between 21-30 age group. Female patient were more in no. than male patients. Male to Female ratio was found to be 1:2.5. Similar observation were noted by Sawarkar PR et al( 7), Muratli et al ( 8), Sinha et al(9) .

Benign lesions in the present study were 240 cases (87.5%) . Similar to study done by Bagga PK et al (90.5%)( 10) ,Melak T et al ( 91%)( 11 )whereas Gupta V et al ( 6 ) ,Gharib H et al(12) found benign cases to be (78%) and (69%) respectively.

The most common diagnosis was colloid goiter comprising of (46.4%) followed by Hashimotos Thyroiditis (19.2%), Adenomatoid goiter(12%), Malignancies (7.8% ), Lymphocytic thyroiditis (5% ), colloid cyst (2%), Follicular neoplasm (2%) and granulomatous thyroiditis (0.7%) each. Colloid goiter was also found to be the most common lesion in studies done by Melak T et al ( 11 ) , Bagga PK et al ( 10 ). Hashimotos thyroiditis was the 2<sup>nd</sup> most common lesion similar to study done by Gupta V et al (6).

Thyroid malignancies accounted for 7.8% similar to study done by Bagga PK et al ( 10 ) where 7.9 % were found to be malignant cases. However Gupta V et al ( 6 ) reported 5% malignant cases in his study. Out of 22 malignant cases 16 cases of papillary carcinoma thyroid, 4 cases of Medullary carcinoma and 2 cases of Anaplastic carcinoma thyroid were seen . Follicular Neoplasms cases were 6 in number.

The smears reviewed were also diagnosed according to Bethesda system of reporting pattern for thyroid. Bethesda category I included (10%), category II (85.7%) ,category III (0% ) ,category IV (2% ),category V (0% ), category VI (7.8%). Maximum no. of cases were seen in Bethesda category 2 followed by category I, category II, category IV with none of the cases falling in category III and V. Category II was the most common followed by Category I, Category VI, Category IV. Similar findings were seen in study done by Gupta V et al (6), Kumbhkar et al (5) , Mondal et al (13 ) Mehrotra D et al (14 ) , Yang J et al (15), Yassa L et al (16) also found Category IIS to be the most common . Colloid goiter , Follicular Neoplasm and Papillary carcinoma thyroid were found to be the major subtypes of the benign, neoplastic and malignant lesions respectively . Similar findings were seen in study done by Melak T et al (11 ) .

**Conclusion**

FNAC is a simple ,safe,rapid, cost effective diagnostic method and is a valuable adjunct to preoperative screening in the diagnosis of thyroid lesions and a valuable tool in the management of patients. As there is high prevalence of the thyroid lesions and moreover in presence of impracticality of surgically excising all nodules, FNA plays a vital role as a screening test leading to decrease in percentage of patients requiring surgery.

**Table 1 .Distribution pattern of thyroid lesions except the non diagnostic cases.**

Age group	Colloid Goitre	Colloid cyst	Hashimotos thyroiditis	Lymphocytic thyroiditis	Nodular goiter	Neoplasm	Carcinoma	Granulomatous
11-20	10		4	2	2		2	
21-30	22		15	3	2	3	10	
31-40	19		10	9			2	
41-50	38	2	17		18	1	2	2
51-60	21	2	4		8	2		
61-70	12		4		2		4	
71-80	4	2			2			
>80	4						2	
Total	130	6	54	14	34	6	22	2

**Table 2- Sex distribution of diagnosed cases of Thyroid lesions**

Lesion	Colloid Goitre		Colloid cyst		Hashimotos thyroiditis		Lymphocytic thyroiditis		Nodular goiter		Neoplasm		Carcinoma		Granulomatous	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Sex wise distribution	40	90	4	2	14	40	0	14	10	24	2	4	6	16	-	2
Total	130		6		54		14		34		6		22		2	

**Table 3 -Diagnosis in 280 cases of thyroid lesions**

Lesion	Number	Percentage%
Benign		
Colloid Goitre	130	46.4
Colloid cyst	6	2
Hashimotos thyroiditis	54	19.2
Lymphocytic thyroiditis	14	5
Nodular goiter	34	12
Granulomatous	2	0.7
Neoplastic	6	2
Malignant	22	7.8
Non diagnostic /Unsatisfactory	12	4.2

Total	280	100
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**Table 4. Case distribution according to Bethesda Reporting Pattern**

Category	Category I	Category II	Category III	Category IV	Category V	Category VI	Total
No.	12	240	-	6	-	22	280
Percentage	4.2	85.8%	-	2	-	7.8	100

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