



## GOITRE; FREQUENCY OF MALIGNANT DISEASES IN GOITRE AT TERTIARY CARE HOSPITAL.

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**ABSTRACT.. Background:** The entity of goitre is as old as mankind itself and has been recorded historically in Chinese text as back as 2700 B.C. Indeed in context to WHO adage, every thyroid nodule should be considered malignant until proven otherwise, needs triple assessment. The histopathology is very mandatory to have definitive diagnosis. **Objectives:** of this study was to determine the frequency of malignancy in patients presented with goitre at our institution. **Study Design:** Descriptive cross sectional study. **Period:** January 2015 to December 2017. **Setting:** Department of Surgical Unit 1 People's Medical College Hospital Nawabshah tertiary care hospital were plotted in this study, through non probability consecutive methods. **Material and Methods:** 160 patients having goitre underwent for various thyroid surgeries with reported histopathology. **Results:** In a total of 160 patients, 79.4%, 6.9%, 2.5%, and 11.3% were simple, toxic, inflammatory and malignant neoplasm respectively. **Conclusions:** Study revealed 11.25% frequency of thyroid malignancy in patient presented with goiters. Among these papillary carcinoma was 8.1%, follicular carcinoma was 1.9% and anaplastic carcinoma was 1.3%.

**Key words:** Goitre, Neoplasm, Thyroid Disease, Thyroid Function, Thyroid Nodule.

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### INTRODUCTION

An abnormal enlargement of the thyroid gland is known as goitre.<sup>1</sup> The entity of goitre is as old as mankind itself and had been recorded historically in Chinese text as back as 2700 B.C. The difference between malignant and benign goitres was first described by Tshui Chin-Thi in 85 AD in which the benign type was reflected to be curable.<sup>2</sup> Whereas Actius opened thought for surgical ablation of goitre in the 6<sup>th</sup> century then in the 10<sup>th</sup> century Albucasis carried out very first thyroid surgery.<sup>3</sup> There after parade of suegeons viz Robert Graves, Carl von basedow, Merseburg, Kochers, Hashimoto's, De-Quervains, Riedel have had rigours works in this regard.<sup>4</sup>

The simple physiological goitre is the commonest among various thyroid diseases. The frequency of diffuse goitre decline with age, the highest frequency is in the younger women, and the ratio of women to men is at least 4:1.<sup>5</sup> Apart from diffuse or nodular with toxic or non toxic goitre, the thyroid masses are very commonly found in

clinical practices and through various imaging investigation.<sup>6</sup> Indeed in context to WHO adage, every thyroid nodule should be considered malignant until proven otherwise, hence, strictly needs triple assessment where in histopathology is very mandatory to need on definitive diagnosis.<sup>7</sup> Irrespective of controlling all influencing factors in developing of goitre, the annual estimate of goitre prevalence only in advance country of America comes to be 0.1 %.<sup>8</sup> The various studies on thyroid diseases have estimated about 10% life time occurring of various pathological goitres. The thyroid masses directly or indirectly related with age, sex, and deficient iodine diets and are more prevalent in women.<sup>9</sup> The frequency of malignant goitre ranges from 4% to 6.5%.<sup>10</sup> Importantly the risk of malignancy may be high as 27% and thus such goitres require management to control this complex pathology.<sup>11</sup> So the objective of this study was to sort-out frequency of malignancy in particular and other pathological diseases in general in goitre at our institution.

## MATERIAL AND METHODS

### Study Design

Descriptive cross sectional.

### Setting

Department of Surgical Unit 1 People's Medical College Hospital Nawabshah Tertiary Care Hospital.

### Duration of Study

2 Years i.e January 2015 to December 2017.

### Target Population

Patient having goitre and underwent for various thyroid surgeries and specimen were reported for histopathology.

### Sample Size

160 patients, the sample calculation was done on WHO sample size formulation using the Raosoft for 'sample size calculation'.

### SAMPLE TECHNIQUE

Non probability consecutive.

### INCLUSION CRITERIA

- Age between 16 to 70years.
- Patient who underwent for the thyroid surgery.
- Patient having histopathological reports.

### DATA COLLECTION

The study population consisted of patients who admitted in surgical unit 1 for thyroid surgery. Patients who fulfil the selection criteria were identified after obtaining an informed consent from identified patients. Detailed history was taken and risk factors were identified. After fitness all the patients underwent for the various thyroid surgery and surgical finding were noted on profarma and specimen sent for histopathology to obtain the pathological disease.

### DATA ANALYSIS

The different variable were evaluated statistically by SPSS version 23 and descriptive analysis of qualitative and quantitative variable were performed.

## RESULTS

Under strict selection criteria 160 patients were subjected for study and have inferenced a mean age of 45 among the ages from 16 to 70 years. While the highest frequency (38.12%) of goitre is seen in ages from 46 to 55 years. (Table-I).

In this study, women were common with presentation and frequency of 132 and 82.5% respectively, where as men presented with number of 28 patients and frequency of 17.5% among targeted patients of this study while median, and standard deviation were 46, and 11.36 years respectively. The women were predominant to men with ratio of 33:7. (Table-II).

Out of 160 patients, 127 (79.37%) subjects were found in pathological category of simple goitre, simple goitre were of solitary adenoma 38 (23.75) and multinodular goitre in 89 (55.62%). (Table-III).

Among 160 sample size 11 (6.8%) subjects were found to have toxic goitre. However among these 11 patients 4, 5, and 2 were having toxic adenoma, Toxic MNG and Grave's disease respectively as shown in Table-IV.

In this study, 4 (2.5 %) subjects were found in inflammatory group pathological goitres. In this group various pathologies are seen as shown in Table-V.

In this prospective study, among total patients of (160) the malignant goitre were found in frequency of 18 patients with 11.3%, frequency with percentage of Follicular, Papillary and Anaplastic carcinoma were demonstrated as 3 (1.9%), 13 (8.1%), and 2 (1.3%) respectively, as shown in Table-VI.

Among study population of 160 patients, 142(88.75 %) were benign and 18(11.25 %) were found malignant. Among benign goitre, simple, toxic and inflammatory lesions were 79 %, 7 %, and 2.5 % respectively. While, among malignant goitre, Papillary, Follicular and Anaplastic lesions were 13%, 3%, and 2% respectively.

Age in Years	Male	Female	Total Cases	%
16 to 25	1	8	9	5.62
26 to 35	3	19	22	13.75
36 to 45	7	40	47	29.37
46 to 55	11	50	61	38.12
56 to 70	6	15	21	13.12
Total	28	132	160	100
Mean	45. years			
Median	46.00 years			
SD+/-	11.36			

Table-I. Age distribution (n = 160)

Gender	Frequency	Percent	Valid Percent	Cumulative Percent	Significance Level
Male	28	17.5	17.5	17.5	P<0.0001
Female	132	82.5	82.5	100.0	
Total	160	100.0	100.0		

Table-II. Frequency of Sex Distribution (n= 160)

Pathological Diseases	Frequency	Percent	Valid Percent	Cumulative Percent
Solitary Adenoma	38	23.8	29.9	29.9
MNG	89	55.6	70.1	100.0
Total	127	79.4	100.0	

Table-III. Frequency of simple goitre (n = 160)

Pathological Disease	Frequency	Percent	Valid Percent	Cumulative Percent
Toxic adenoma	4	2.5	36.4	36.4
Toxic MNG	5	3.1	45.5	81.8
Diffuse /Graves disease	2	1.3	18.2	100.0
Total	11	6.9	100.0	

Table-IV. Frequency of Toxic goitre (n= 160)

Pathological Diseases	Frequency	Percent	Valid Percent	Cumulative Percent
Chronic lymphocytic thyroiditis	1	.6	25.0	25.0
Hashimoto disease	1	.6	25.0	50.0
Riedels thyroiditis	1	.6	25.0	75.0
Tuberculosis	1	.6	25.0	100.0
Total	4	2.5	100.0	

Table-V. Frequency of Inflammatory Goitre (n = 160)

Pathological Diseases	Frequency	Percent	Valid Percent	Cumulative Percent
Follicular carcinoma	3	1.9	16.7	16.7
Papillary carcinoma	13	8.1	72.2	88.9
Anaplastic carcinoma	2	1.3	11.1	100.0
Total	18	11.3	100.0	

Table-VI. Frequency of malignant goitre (n = 160)

## DISCUSSION

The diagnosis, evaluation and management of thyroid masses / disease remain critical challenge for surgeons. Mostly these abnormal masses are easily palpable clinically in the neck, however these palpable masses needs further evaluation to establish the exact pathology behind irrespective

of their presentation. Indeed the frequency of such pathological masses in thyroid are very much related and influenced by environment, diet, gene, age, drugs and radiations therapies. It has further been observed that lumps in thyroid happen to be from early teenage to longevity with rate of 0-0.8% per year, beginning early in life and

extending into the eighth decades. While thyroid malignancies are commonly seen in very young and very old people. The frequency of malignancy in goitre occurs in 4-7% of the adult population as seen by Larsen PR et al, Fraker DL et al, Gregory P et al, Leonard Wartofsky et al.<sup>12,13,14,15</sup> All these studies are very near and similar to our study as shown in table no 6. Thyroid nodules are either adenomas or neoplasms. Most thyroid nodules are benign hyperplastic lesions as seen in this study (79.4 %) while 5 - 20 % of these nodules are true neoplasms in natures which in similarity to above studies.

The most common benign thyroid tumor pathology was adenoma in solitary or multiple nodules in goitres in our results. These finding observed on thyroid specimens in our study are very consistent with some local studies, in which multinodular goitre and adenomatous goitres were found to be the commonest pathologies of the thyroid lesions.<sup>16,17,18,19</sup> The frequency of benign lesions in this study was 88.75% and 11.25 % of neoplastic lesions. While some other local studies reported a significantly high incidence of thyroid malignancies.

This study demonstrated females with (82.4%) frequency in all malignant goitres as compared with males (17.6%) having female to male ratio was 4.7:1, which is also observed at same rates by other studies having more common prevalence of thyroid malignancies in women in comparison to men with inference of 2.4:1, 4:1, and 3:1.<sup>20</sup>

Thyroid neoplasms are most common among all endocrine gland malignancy.<sup>21</sup> Variation in the frequency of thyroid carcinomas has been observed in various parts of the world. We found papillary carcinoma as the commonest malignant lesion. In the USA, Hay and Meier et al also reported a similar frequency of papillary carcinoma (90%).<sup>22,23</sup> Other studies from Lahore,<sup>20</sup> Yemen,<sup>24</sup> and Iran<sup>25</sup> have also reported papillary carcinoma as the commonest malignant thyroid tumors with a variable frequency of 57.9% , 93.8% and 69.9% , respectively.

## CONCLUSION

Study revealed 11.25% frequency of thyroid malignancy in patient presented with goiters. Among these papillary carcinoma was 8.1%, follicular carcinoma was 1.9% and anaplastic carcinoma was 1.3%.



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### AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Shahnawaz Leghari	Data collection, data analysis & discussion.	
2	Gulshan Ali Memon	Introduction & result discussion writing.	
3	Habib-ur-Rehman Khan Toor	Data collection, Reference work.	