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# Histopathological study of thyroid lesions at tertiary care centre: a study of 270 Cases

**Dr Kusum Heda[1], Dr Sunil Kasana[2*], Dr Kalpana Beniwal[3], Dr Kriti Chaturvedi[4]**

[1]*Senior Professor, Department of Pathology, JLN Medical College,Ajmer*
[2]*Resident, Department of Pathology, JLN Medical College,Ajmer*
[3]*Assistant Professor, Department of Pathology, JLN Medical College,Ajmer*
[4]*Resident, Department of Pathology, JLN Medical College,Ajmer*

***Corresponding Author**: **Dr. Sunil Kasana**
**Email id: sk144268@gmail.com**

## ABSTRACT

### Background

Thyroid gland plays a vital role in maintaining physiology. It is important to diagnose thyroid disorders as most of them can be managed by medical or surgical methods. With improving awareness thyroid diseases are being increasingly diagnosed making it one of the most common endocrine disorder worldwide.

### Material and Methods

It is a retrospective study done at department of Pathology, JLNMC, Ajmer, Rajasthan from January 2014 to September 2018 .Material for this study constituted of 270 specimens of thyroid received after thyroidectomy or lobectomy. After proper fixation gross features of all specimens were noted and sections were taken from representative areas, which were then processed and routinely stained with H&E.

### Results

Out of 270 thyroid specimens received 26(9.62%) were congenital lesions, 23(8.51%) were inflammatory lesions, 207(76.66%) were benign lesions and 14(5.18%) were malignant lesions. Most common diagnosis was goiter 140 (51.8%) followed by follicular adenoma 42(15.5%). Female: male ratio was 8:1. Most common age group for congenital lesions was <10years, for Inflammatory lesions 31-40 years, for benign diseases 21-50 years and for malignancies of thyroid it was 31-40 years.

### Conclusion

The pattern of thyroid lesions as seen in the present study suggests that benign thyroid diseases are more common than malignancies and occur mainly in females of younger age-group. Follicular adenoma is the commonest benign tumor while papillary carcinoma is the commonest malignancy. It is advisable that all cases of thyroid lesions should be carefully evaluated to exclude possibility of thyroid cancer.

**Keywords:** Thyroid, Multinodular goiter,Thyroid neoplasm.

## INTRODUCTION

Thyroid gland affects wide variety of organs and functions of body and plays a vital role in maintaining physiology. As most of the thyroid disorders can be managed by medical or surgical methods hence it is important to diagnose them. [1] In India there are about 42 million cases of thyroid diseases. [2]

With improving awareness thyroid diseases are being increasingly diagnosed making them one of the most common non-communicable disease and most common endocrine disorder worldwide [3].

Thyroid cancers are relatively uncommon accounting for 1.5% of all cancers but they account for 92% of all endocrine cancers.[4]

## MATERIAL AND METHODS

It is a retrospective study done at department of Pathology, Jawaharlal nehru medical college, Ajmer, Rajasthan from January 2014 to September 2018 with the aim to studying the burden of thyroid diseases in the region, to analyse thyroid diseases based on their age-sex distribution and histomorphology and to identify the common lesions of thyroid.

Material for this study constituted of 270 specimens of thyroid received after thyroidectomy or lobectomy. After proper fixation gross features of all specimens were noted and sections were taken from representative areas, which were then processed and routinely stained with hematoxyline and eosin (H&E).

## RESULTS

Out of 270 thyroid specimens received 26(9.62%) were congenital lesions, 23(8.51%) were inflammatory lesions, 207(76.66%) were benign lesions, 14(5.18%) were malignant lesions. (Fig. 1) Most common diagnosis was Goiter 140 (51.8%) followed by follicular adenoma 42(15.5%). [Table 1]. Also 240(88.8%) were females and remaining 30 (11.1%) were males, making Female: Male ratio 8:1 in the present study. (Fig. 2)

Congenital lesions were seen most commonly in age group of <10years. Inflammatory lesions were seen mostly in age group of 31-40 years. Age group of 21-50 years accounted for most of the benign lesions whereas maximum cases of malignancy were seen in age group of 31-40 years, although significant cases were also found in the young age group of 11-20 years and older age group of 61-70 years.(Fig 3-6)

**Table 1: Histomorphological distribution of thyroid lesions**

| Thyroid Lesion | No. of case | Percentage (%) |
|---|---|---|
| **Non-Neoplastic** | | |
| Thyroglossal cyst | 26 | 9.60 |
| Colloid goitre | 94 | 34.8 |
| Nodular goitre | 44 | 16.3 |
| Multinodular goitre | 02 | 0.74 |
| Diffuse toxic goitre | 03 | 1.11 |
| Adenomatous goitre | 12 | 4.44 |
| Adenomatous hyperplasia | 01 | 0.37 |
| Benign cystic lesion | 01 | 0.37 |
| Hashimoto's thyroiditis | 16 | 5.92 |
| De-Quverian's thyroiditis | 02 | 0.74 |
| Lymphocytic thyroiditis | 04 | 1.48 |
| Autoimmune thyroiditis | 01 | 0.37 |
| **Neoplastic** | | |
| Follicular adenoma | 42 | 15.5 |
| Hurthle cell adenoma | 03 | 1.11 |
| Colloid cyst adenoma | 06 | 2.22 |
| Papillary carcinoma | 10 | 3.70 |
| Follicular carcinoma | 02 | 0.74 |
| Medullary carcinoma | 01 | 0.37 |

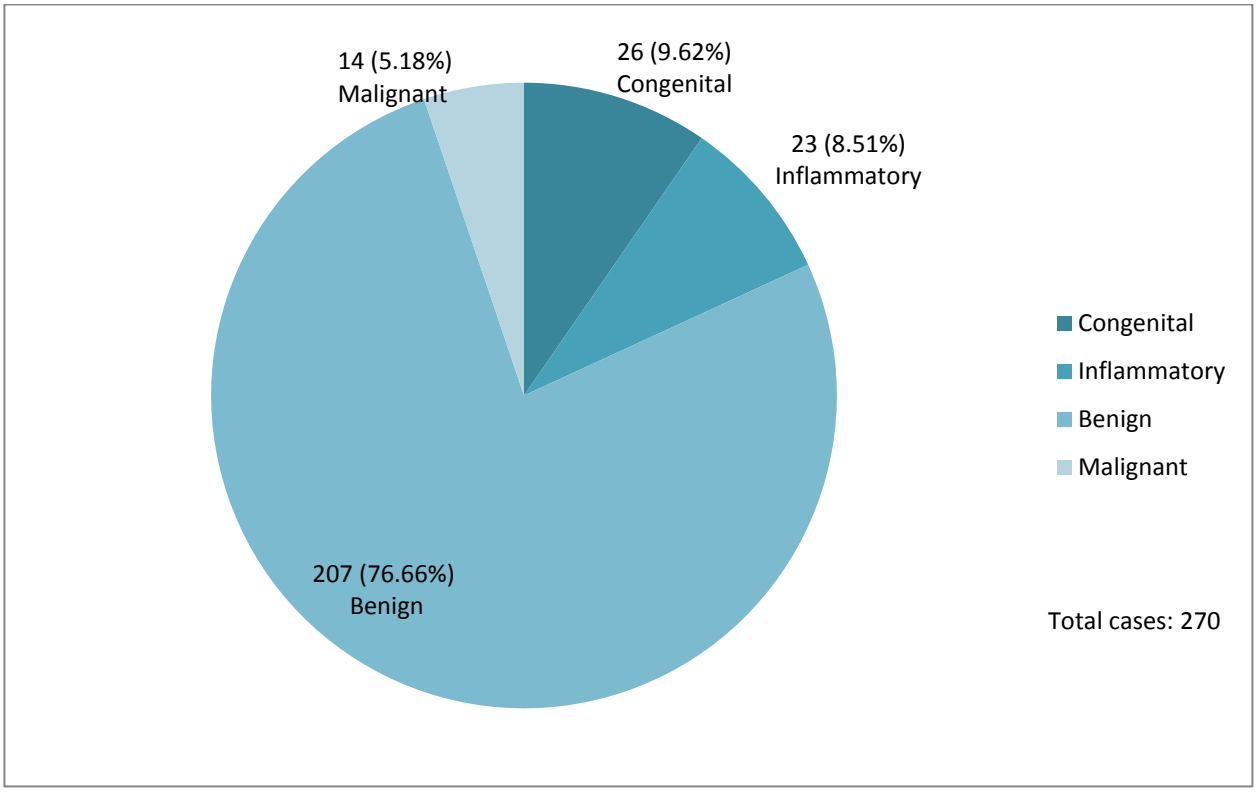


**Figure 1: Distribution of thyroid lesions**

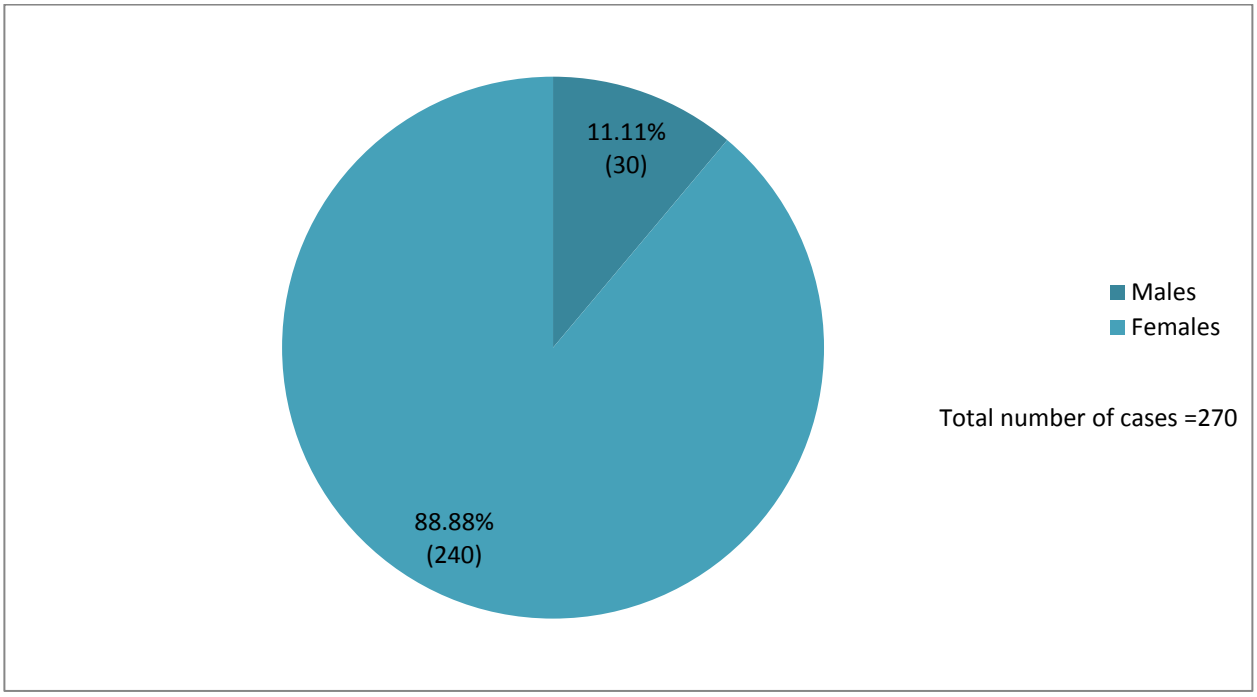


**Figure 2: Sex-wise distribution of thyroid lesions**

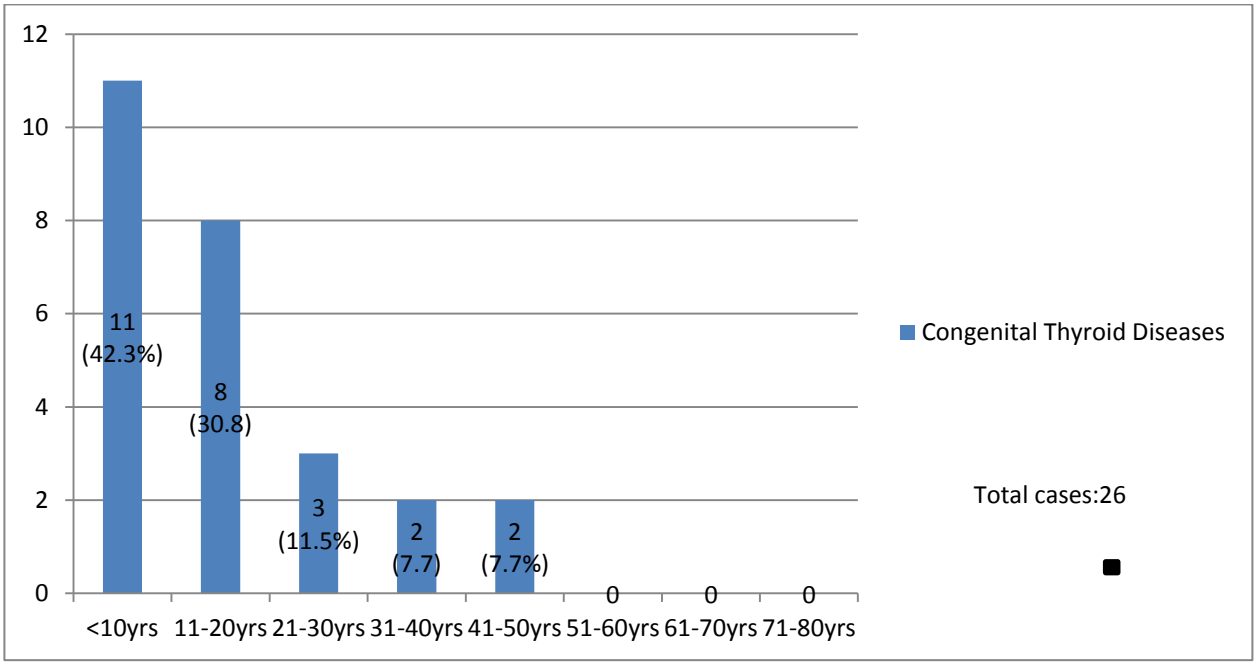


**Figure 3: Age-wise distribution of congenital diseases of thyroid.**

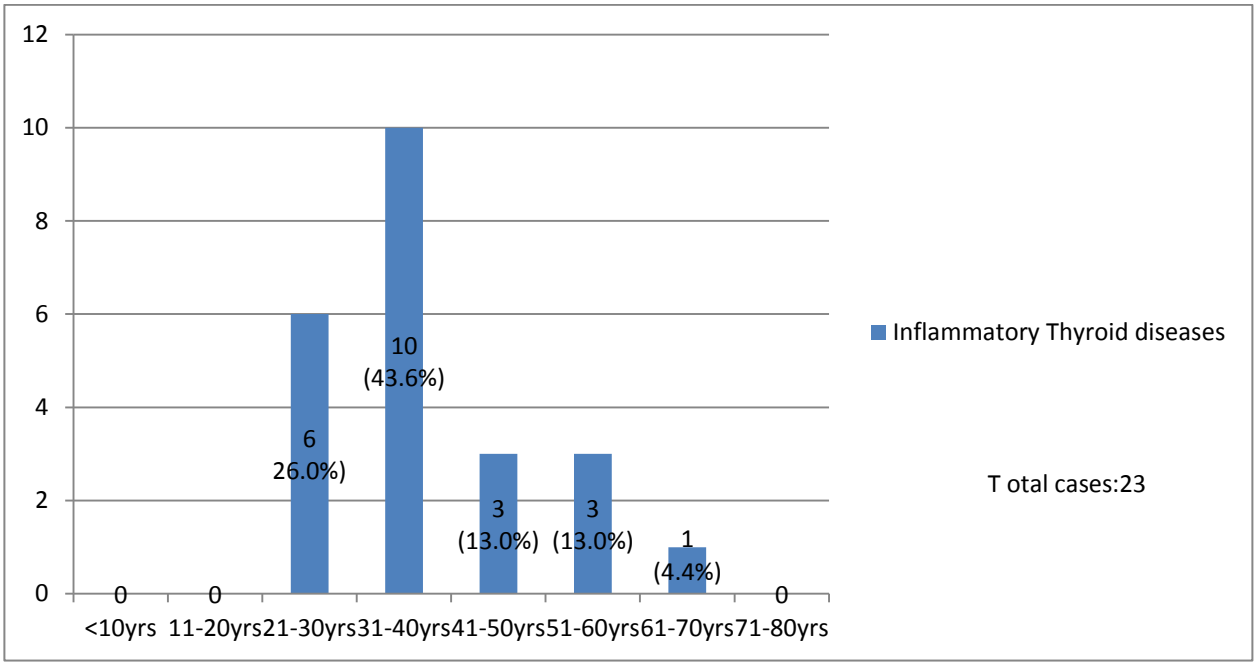


**Figure 4: Age-wise distribution of inflammatory thyroid diseases**

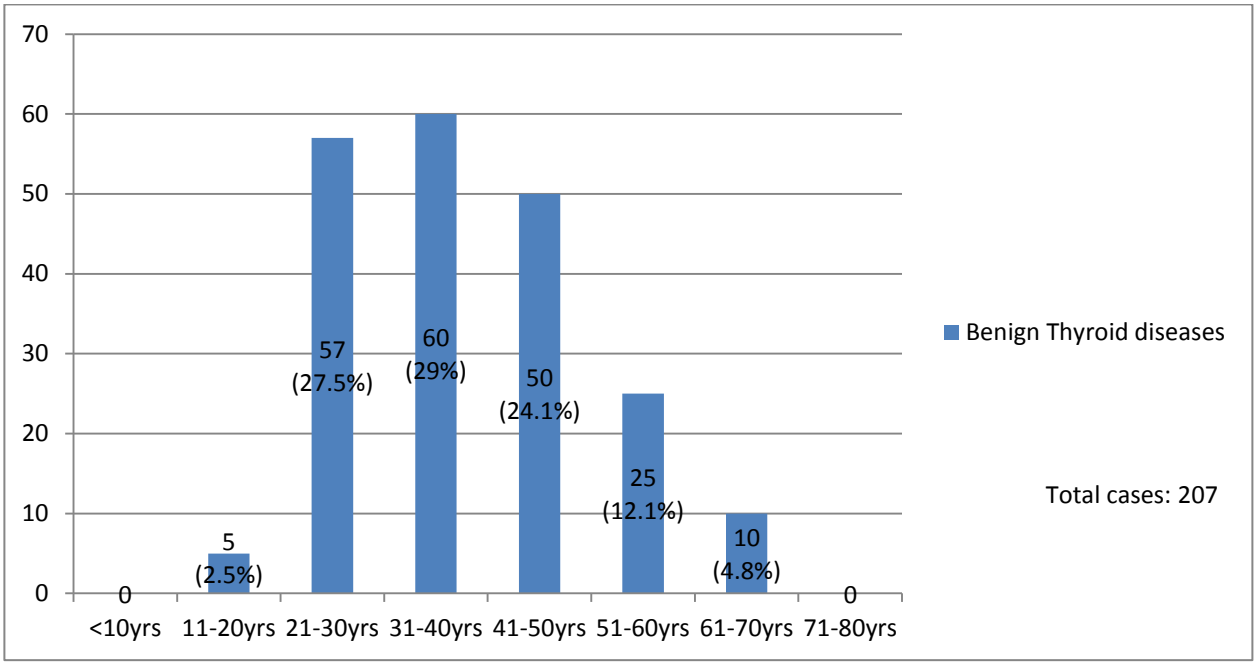


**Figure 5: Age-wise distribution of benign diseases of thyroid**

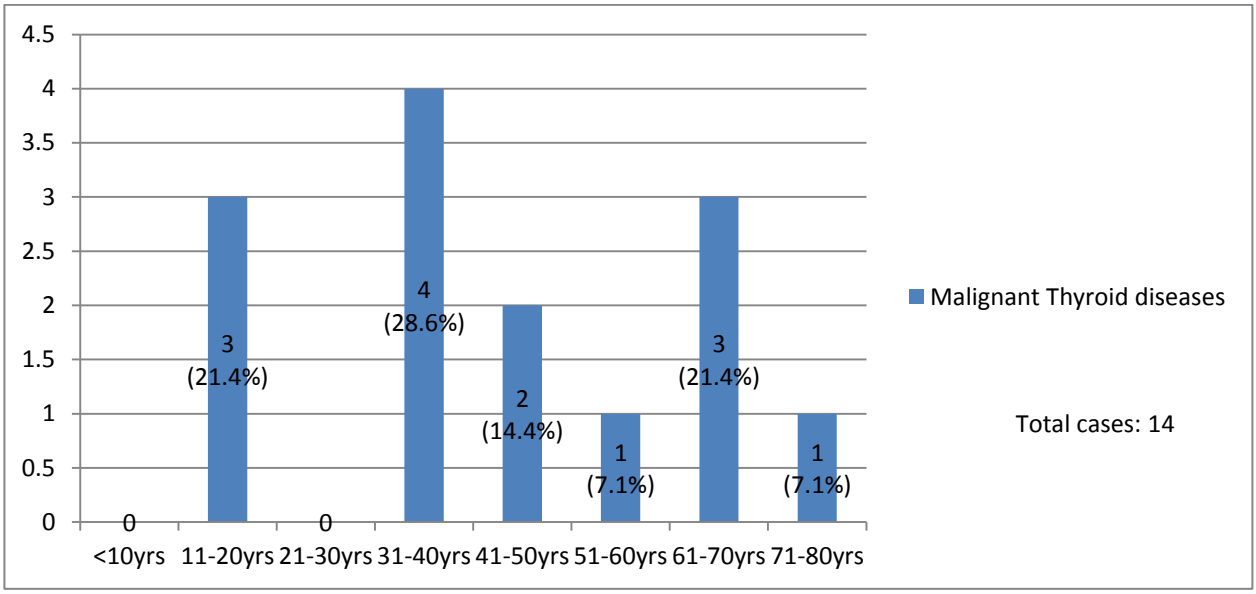


**Figure 6: Age-wise distribution of malignant diseases of thyroid**

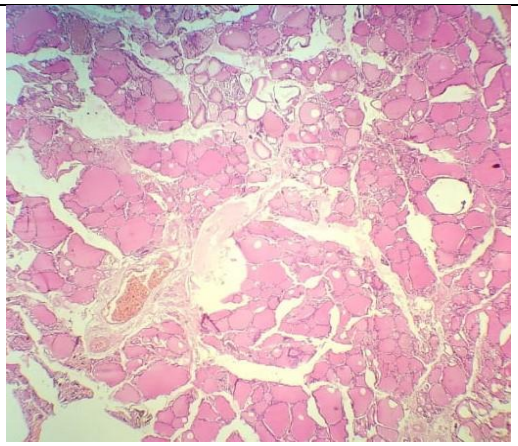

**Figure 7: Section of colloid goiter. H&E.10x**

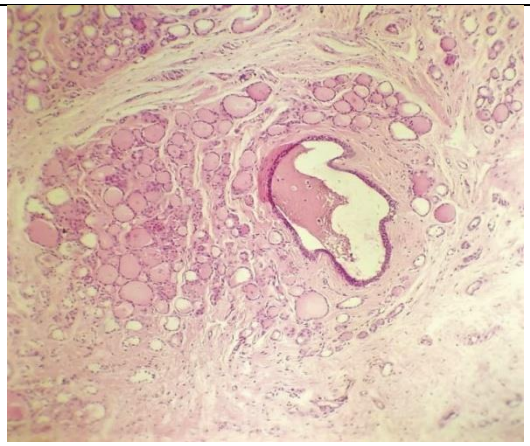

**Figure 8: Section of thyroglossal cyst. H&E. 10x**

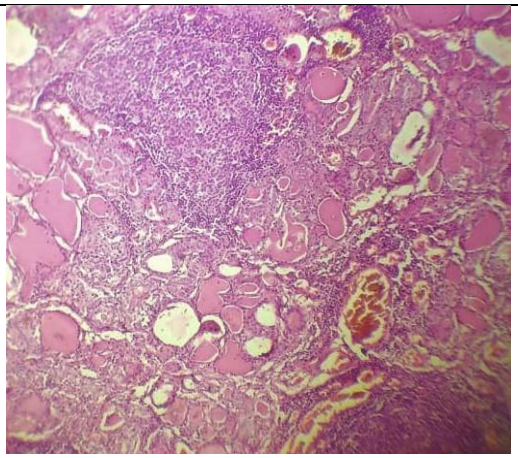

**Figure 9:Section of Hashimoto's thyroiditis. H&E. 10x**

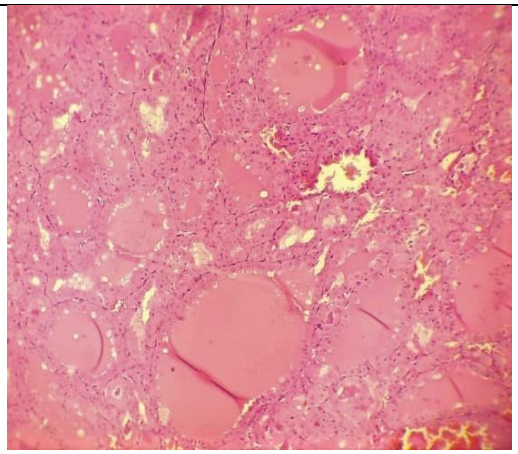

**Figure 10: Section of hurthle cell adenoma. H&E 10x**

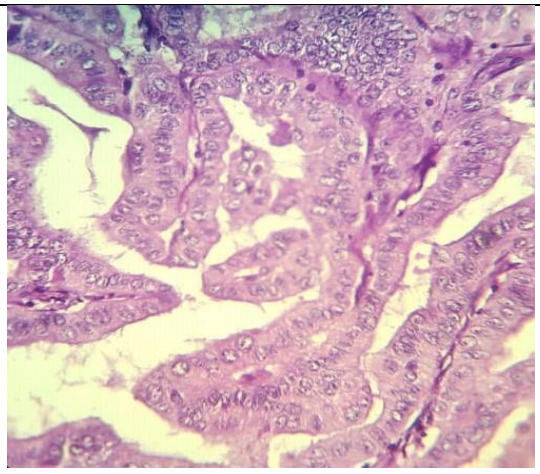

**Figure11: Section of papillary carcinoma thyroid H&E 40x thyroid. H**

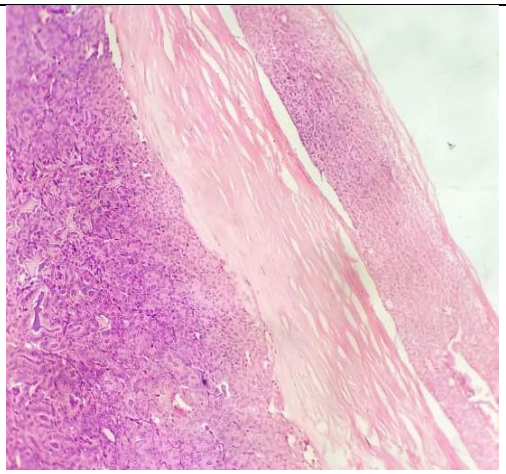

**Figure 12: Section of follicular carcinoma thyroid H&E 10X**

## DISCUSSION

This study was conducted in the department of Pathology, Jawaharlal Nehru Medical College, Ajmer. For this study 270 thyroid specimens were evaluated by detailed history and histopathological examination. Diseases of thyroid are very common worldwide with varying incidences depending upon iodine deficiency status.[5]

Female: male ratio of thyroid diseases in our study was found to be 8:1. Similar results such as

F:M ratio of 6.3:1, 9.6:1, 6:1 and 8.4:1 were found in studies conducted by Tangde A et al[1](2019), Pathivada et al [6](2018), Raheem N et al [7] (2018) and Joseph E et al [3] (2016) respectively.

In our study we found non-neoplastic diseases of thyroid to widely outnumber neoplastic diseases and this is in accordance with studies done by Abdulkader et al[8](2014), Chukudebelu et al[9] (2012) and Tangde A et al[1].

In our study the age of patients ranged from <10-80 years. Most of the congenital lesions were seen in age group of <10 years and most common diagnosis was thyroglossal cyst. Inflammatory diseases were most common in age group of 31-40yrs. Similar results were seen in studies conducted by Raheem N et al[7](2018) and Tangde A etal[1] (2019).

The most common disease of thyroid was found to be colloid goitre. Most of the cases of benign lesions were seen amongst 21-50 years of age group. Similar results were found in studies conducted by Joseph E et al [3](2016) and Darwish et al [10] (2006).

In our study we found peak incidence of thyroid malignancies in the age group of 31-40 years and significant number of cases were also seen in age groups of 11-20 years and 61-70 years. Similar results were seen in studies conducted by Beigh A et al [4] (2018) and Darwish et al[10] (2006).

In our study, benign lesions predominated over malignant lesions amongst neoplastic thyroid diseases. The most common malignancy diagnosed was papillary carcinoma it constituted 76.92% of all malignancies. Similar results were seen in studies conducted by Abdulhkam et al [11], Gupta A et al [12] (2016), Abdulkader et al [8] (2014) and Chukudebelu et al[9] (2012).

Follicular adenoma was the commonest benign thyroid neoplasms in our study accounting for 15.5% of all neoplasms. This is in accordance with studies done by Beigh et al[4] (2018) and Pathivada et al[6] (2018)

## CONCLUSION

The pattern of thyroid lesions as seen in the present study suggests that benign thyroid diseases are more common than malignancies and occur mainly in females of younger age groups. The most common disease of thyroid is colloid goiter. Follicular adenoma is the commonest benign tumor while papillary carcinoma is the commonest malignant tumour. It is advisable that all cases of thyroid lesions should be carefully evaluated to exclude possibility of thyroid cancer.

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## REFERENCES

[1]. Ashwini T, Vaidik S, Anil J. Histopathological study of thyroid lesions in a tertiary care hospital- A 2 year study. International journal of scientific research. 8(4), 2019.
[2]. Ambika Gopalakrishnan, Unnikrishnan, Usha VM Thyroid disorders in India: An epidemiological perspective Indian Journal of Endocrinology and Metabolism15, 2011, 78-81.
[3]. Elizabeth Joseph, Anju Varghese, Celine T.M., Anna M, Usha P. A study on the histopathological pattern of thyroid lesions in a tertiary care hospital. International journal of research in medical sciences. 4(12), 2016, 5252-5255.
[4]. Beigh A, Amin J, Junaid S, Wani LA, Farooq S. Histopathological study of thyroid neoplastic lesions in a tertiary care hospital-A 5 year study. International journal of contemporary medical research.5(4), 2018, 4.
[5]. Vanderpump MP. The epidemiology of thyroid disease. Br Med Bull99, 2011, 39-51.
[6]. Pathivada U, Ponnada S, Bhagyalaxmi A, Seeram SK, Kamireddy SR, Latchupatula L, Mantripragada VSL. Clinico- histopathological study of Thyroid lesions in a tertiary care centre over a period of one year. J. Evid Based Med. Healthc.5(32), 2018, 2374-2379.
[7]. Nasiru Raheem, Saad A. Ahmed, Modupeopla O.A. S. Histopatghological pattern of thyroid diseases in Zaria: A 10-year review. Niger Postgrad Med J25, 2018, 37-42
[8]. Abdulkader Albasri, Zeinab Sawaf, Akbar Shah Hussainy, Ahmed Alhujaily Histopathological Patterns of Thyroid Disease in Al-Madinah Region of Saudi Arabia. Asian Pac J. Cancer. Prev., 15, 5565-5570.
[9]. Chukudebelu O, Dias A, Timon C. Changing trends in thyroidectomy. Ir Med J105, 2012, 167-9.

[10]. Abdulla H Darwish, Khalid A Al-Sindi, Jihene El Kafsi, BAcantab. Pattern of Thyroid Diseases – A Histopathological Study Bahrain Medical Bulletin28, 2006.
[11]. Abdulhkam A, Antony M, Fawaz A, Dhafer A, Mohammed A, Khalaf A. The patterns of surgically treated thyroid disease in central rural region of Saudi Arabia. The Egyptian journal of hospital medicine. 70(6), 2018, 1066-1071.
[12]. Gupta A, Jaipal D, Kulhari S, Gupta N. Histopathological study of thyroid lesions and correlation with ultrasonography and thyroid profile in western zone of Rajasthan, India. Int J Res Med Sci. 4, 2016, 1204-1208.

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