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PREVALENCE OF MALIGNANCY IN THYROID NODULE AT PEOPLE'S MEDICAL COLLEGE HOSPITAL (PMCH) NAWABSHAH.

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ABSTRACT… Objectives: The purpose of study is to ascertain the prevalence of malignancy in thyroid single/multiple nodules after ascertaining the features of nodules on different criteria. **Study Design:** Cross Sectional Study. **Setting:** Department of Surgical at PMCH Nawabshah. **Period:** April 2015 to April 2018. **Material & Methods:** All patients got admission from OPD and they were investigated for the disease. All biochemical examinations were done. Thyroid profile with thyroid scan was obtained. Fine Needle Aspiration Cytology (FNAC) was done to diagnose the type of cells either benign/ malignant. The decision of the surgical procedure was done according to the FNAC report of the thyroid nodule. **Results:** Total 80 patients were investigated. 55 (68.75%) females, 35 (43.75%) male and 60 (75%) showed the benign cells and 20 (25%) patient's reports had malignant cells. Biopsies were sent for histopathology. 60 (75%) showed thyroid adenomas after biopsy. 10(12.5%) patients papillary carcinoma, 7 (8.75%) follicular, 2 (2.5%) medullary, 1 (1.25%) anaplastic, 0 for thyroid lymphoma, 0 thyroid carcinoma. 0 for squamous cell carcinoma. 40 (50%) were treated conservatively with thyroxine, 20 (25%) were operated for lobectomy. All malignant cases were undergone for total thyroidectomy. **Conclusion:** it is summed up that the prevalence of malignancy in thyroid nodules in our setup is only 25% that is the lower one as compared to other studies.

Key words: Adenoma, Biopsy, Malignancy, Prevalence, Thyroidectomy.

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INTRODUCTION

Thyroid Nodules is simply defined as the discrete swelling within the thyroid gland. These commonly present as a single or multiple swellings in the thyroid gland. It could be solid or cystic. In adult's physical examination, the nodules are seen among the 5% to 7% whereas the autopsy has proved its incidence up to 50%. A wide variety of disorders are in thyroid nodules from benign to malignant with different clinical presentations.[1] The incidence of dominant nodules is 23%. People with increasing age, females, deficiency of iron and having history of radiations. The patients of organ transplantation are vulnerable to develop the nodular thyroid.[2]

Recently its incidence has dramatically increased due to excessive use of radiological investigations like Ultrasound, CT scan, MRI and PET scan.[3] Ionizing radiation is said to the common risk factor for thyroid nodules of different sizes. The nodules previously underwent for radiotherapy develop malignancy from 20% to 50%. Ultrasound shows prevalence of 20% to 76%. The other etiological factors includes smoking, obesity, increased use of alcohol, increase in ILGF-1, metabolic syndromes and fibroid uterus. Moreover, oral contraceptive therapy (OCT) and statins have decreased risk.[4]

They are of two types neoplastic and non-neoplastic. Neoplastic are subdivided into benign and malignant whereas non-neoplatic involves hyperplastic and inflammatory nodules. Colloid nodules commonly show characteristics of benign lesions with lowest risk of malignant lesion.[5]

Multi-nodular goiter represents monoclonal adenomas or colloid nodules. Colloid nodules show monoclonal cells doing replication in

nodular pattern. It is difficult to different follicular neoplasm because of lack of vascular or capsular invasion. Thyroid is a radiosensitive organ so radiation causes somatic mutations rendering the organ to develop malignancy. It is common in children to develop the malignant transformation because of their higher proliferation in thyroid tissues.[6]

Initially, detailed history, physical examination, thyroid profile, thyroid scintigraphy, and thyroid ultrasound is necessary to make diagnosis. The measurement of thyroid stimulating hormone detects the poor or excessive function of the gland. The diagnosis incorporates FNAC, serum markers, genetic markers and various imaging methods like Ultrasound, MRI, CT, and PET scans. A high TSH level raises the risk of malignancy. Ultrasound can also the nodules of any size even the smallest nodules also. Incidental thyroid nodular malignancy rate is 24%.[7]

The rationale of our study is to ascertain the prevalence of malignancy in single/multiple nodular goiter after finding out the various biochemical and radiological etiological factors and taking preventing measures to prevent patients from posing them under radiological influence at early age.

MATERIAL & METHODS

All patients got admission from OPD of Surgical Faculty. History was taken thoroughly. History of radiation in past or childhood was taken. Family history of thyroid malignancy was also sought. Physical examination of the neck particularly front of neck was done to find out the nodule's number. All routine investigations were done. Thyroid profile was also done and thyroid scan also wherever it was considered to be necessary. Ultrasound of neck was also obtained to see the internal picture of thyroid itself and nodules also. Fine Needle Aspiration Cytology (FNAC) was done to know the type of cells either benign/ malignant. In case of follicular type of disease, FNAC did not decide the type of disease present. ENT opinion was also gotten to know the condition of tonsils apart from other parts of oral cavity. If the investigations showed hypothyroidism, patients were kept on oral therapy to furnish the deficient hormones of the body. In cases of Hyperthyroidism, patients were also treated conservatively. In case of benign or malignant cells found on investigations, the type of surgery was performed accordingly.

RESULTS

Total 80 patients were investigated. Of all, 55 (68.75%) females and 35 (43.75%) male were admitted to ensure their participation in the study.

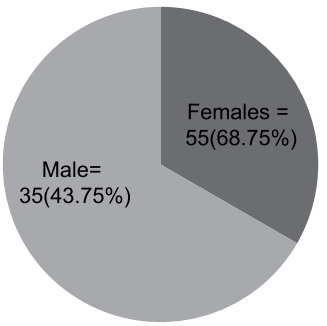

Figure-1

All patients were undergone for FNAC to know the type of cells present. On the basis of this, 60 (75%) showed the benign cells and 20 (25%) patient's reports had malignant cells. The patient's surgical procedure was decided accordingly. The patients with benign cells were operated for lobectomy, lobectomy with isthumectomy, and also total thyroidectomy keeping in view the number of nodules present in the gland. Of 60 patients with benign cells, 30(50%) patients were operated for lobectomy of the affected side, 10(20%) patients for lobectomy with isthumectomy and 20(40%) were undergone for total thyroidectomy.

S. No	Patients	Percent	Procedure
1	30	50%	lobectomy
2	7	11.6%	Subtotal thyroidectomy
3	8	13.33%	Near total thyroidectomy
3	15	25%	Total thyroidectomy
Total	60		

Table-I.

Biopsies were sent for histopathology. 60 (75%) showed thyroid adenomas after biopsy. Of 20

patients diagnosed neoplastic cells on FNAC, they were operated for total thyroidectomy and in some cases neck dissection. Their biopsies were sent for histopathology and the results were obtained after a period of 10-15 days. 10(12.5%) patients papillary carcinoma, 7 (8.75%) follicular, 2(2.5%) medullary, 1(1.25%) anaplastic, 0 for thyroid lymphoma, 0 thyroid carcinoma. 0 for squamous cell carcinoma.

S. No	Patients	Percentage	Biopsy Report
1	10	12.5%	Papillary carcinoma
2	7	8.75%	Follicular carcinoma
3	2	2.5%	Medullary carcinoma
4	1	1.25%	Anaplastic carcinoma
5	0	0	Lymphoma
Total	20		

Table-II.

DISCUSSION

Anterior neck masses could be congenital or acquired. Carcinomas of tongue, tonsil and thyroid malignancy are also anterior neck masses. Thyroid nodules also present as anterior neck swellings/masses which could be benign, cystic and malignant. Age is co morbid factor in these conditions. The common inflammatory neck masses are enlarged lymph nodes either superficial or deep ones. The carcinomas of aero digestive tract also present with neck masses.[8]

Majority of thyroid nodules are benign. Malignancy is suspected when there is higher TSH level, history of radiation exposure in past and some ultrasound findings suspecting malignancy. Solitary nodules have higher degree of developing malignancy than multi nodular goiter.[9]

Thyroid nodules are more common among women than men. These occur usually in iodine deficient areas. A study of two decades showed the incidence of 0.8% in men and 5.3% in women. In our study, the incidence is seen common in females which are near 69%. Another analysis of 1985 patients showed that ultrasound cannot diagnose the benign or malignant nodules accurately. Same is found in our Sonographic findings. In this same study, aspiration in multi-nodular goiter missed the diagnosis of malignancy. In our study, the diagnosis of malignancy was made on FNAC.[10]

There are multiple options utilized in some studies for evaluation of thyroid nodules. Some are of the opinion that there is no need of FNAC unless ultrasound shows any suspicious pathology in the gland. Other opinion is that in every patient, FNAC is of pivotal importance to diagnose the disease. Second thought is also supported by American Association of Clinical Endocrinologist. In our study, FNAC is done in every patient to differentiate benign from malignant. Recent recommendations are that the FNAC should only be done in suspicious cases of Malignancy on noninvasive radiological investigation. In several studies, the use of Doppler ultrasound was done. But in our study, no any such attempt was made.[11]

In study, results were made on the basis of biopsies of every nodule. Same was also adopted in our study that all nodules were excised and sent for histopathology to diagnose the disease.[12]

The prognosis of this disease depends upon the histopathology and the type of tumor detected apart from other factors like age, size of tumor and presence of distant metastasis. The prognosis of papillary carcinoma is good whereas anaplastic has poor prognosis. There are multiple factors involved in recurrence of the disease. These include male, mediastinal lymph nodes, delayed presentation and multicentricity of intrathyroidal tumor.[13]

CONCLUSION

In the end, it is concluded that the prevalence of malignancy in solitary/multiple thyroid nodules in our study is only 25% that is the lower one as compared to other studies.

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AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author(s) Full Name	Contribution to the paper	Author(s) Signature
1	Inayat Ali Zardari	Conception and design.	
2	Zulfiqar Ali Imtiaz Memon	Critical revision of the article for important intellectual content.	
3	Mashooque Ali Khowaja	Data collection.	
4	Naeem Ul Karim Bhatti	Drafting of the article.	
5	Altaf Hussain Ghumro	Statistical expertise.	
6	Imtiaz Ali Soomro	Proforma filling.	