

# BENIGN LOOKING THYROID SWELLING AND MALIGNANCIES

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## ABSTRACT

**Objective:** To determine the frequency of malignancy in clinically benign looking thyroid swelling with respect to its various morphological types.

**Material and Methods:** This cross sectional study was conducted at the department of Otorhinolaryngology, Khyber Teaching Hospital, Peshawar, from October, 2015 to October, 2016. Total 340 cases were selected through consecutive non-probability sample technique for this study.

**Results:** A total of 19 (5.58%) patients were found to have malignant thyroid enlargement. Among the 19, 11 (57.89%) were found to have Papillary carcinoma, 6 (31.57%) were having Follicular carcinoma, 1 (5.26%) had Medullary carcinoma, and 1 (5.26%) had Anaplastic carcinoma.

**Conclusion:** Among the thyroid malignancies, Papillary carcinoma is the most common morphological type found followed by Follicular, Medullary, and Anaplastic carcinoma in our setup.

**Key Words:** Malignancy, papillary, follicular, medullary, anaplastic.

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## INTRODUCTION

Thyroid cancer is the most common endocrine cancer (approximately 1.0%-1.5% of all new cancers diagnosed each year in the USA) and its incidence is on the rise throughout the world<sup>1</sup>, though the mortality remains largely unchanged<sup>2</sup>. 90% of all thyroid cancers are differentiated thyroid carcinoma, among which 85% are Papillary cancer. However, further studies are suggested. Thyroid cancer is more common in women than men<sup>3,4</sup>. A study suggests that among women, Papillary thyroid cancer rates were higher in Asians, and among men, both Papillary (PTC) and Follicular thyroid cancer (FTC) rates were highest among whites<sup>5</sup>. Increased exposure to radiation is one of the causes considered to have led to the increased incidence<sup>6</sup>. There is some evidence that suggests that Iodine deficiency increases the risk of thyroid malignancy particularly of the follicular and anaplastic type<sup>7,8</sup>. A clear association hasn't been found between increased risk of thyroid malignancy and

cigarette smoking, alcohol consumption, menstrual, reproductive, and hormonal factors<sup>9</sup>. Thyroid cancers, particularly Papillary carcinoma commonly present as painless nodules which are found incidentally on imaging or on clinical examination. Thyroid cancer occurs in 5-15% of nodules. Clinically benign looking thyroid nodules have a significant incidence of thyroid malignancy<sup>10</sup>. A thyroid nodule must be investigated with the help of Ultrasonography, FNA, and Radioiodine uptake<sup>11</sup>. Preoperative sonography findings of calcifications portends greater malignant risk. When there are one or more nodules of >10mm, thyroid cancer risk is independent of the number of nodules<sup>12</sup>. In radiation exposed individuals, the likelihood of cancer increases with the increases in no. of nodules. Occult papillary thyroid carcinoma may present as solitary lateral neck cyst. Patients presenting with lesions suspicious of secondary malignancy in the axial skeleton should be clinically evaluated for thyroid cancer<sup>13</sup>.

This study will provide us with an insight to the frequency of different types of thyroid cancer in this part of the world. This will also help in formation of guidelines related to early screening and treatment.

## MATERIAL AND METHODS

This study was conducted at the Department of Otorhinolaryngology, Khyber Teaching Hospital, Peshawar, Pakistan from October, 2015 to October, 2016. A

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sample size of 340 was selected through consecutive non-probability sample technique. Ethical approval was taken from the hospital's ethical and research committee. All patients between age 14 to 70 irrespective of the gender, who presented with a clinically benign looking thyroid swelling were selected. All enrolled patients were admitted in the ENT unit of the hospital. All patients were carefully evaluated with detailed history and thorough physical examination, followed by routine baseline investigations including a complete blood count, thyroid function tests, neck ultrasonography, renal and liver profile, RBC parameters, and chest x-ray. All patients included in this study were preoperatively euthyroid as per the thyroid function tests. Patients with a thyroid profile suggestive of hyperthyroidism, hypothyroid, patients unfit for surgery and previously treated for thyroid disease were excluded. The patients underwent surgical dissection of the neck and the thyroid swelling was removed. A sample tissue was sent to the histopathological laboratory of the hospital to look for the presence of malignant tissue and opinion was taken from the Histopathologist. Frequency and percentages were calculated without taking into account the demographics of the patients. Results were presented in the form of Tables.

**RESULTS**

A total of 340 patients were selected to find out the frequency of thyroid carcinoma with respect to its types in patients who presented initially with a benign looking thyroid swelling and underwent surgical removal of the thyroid. The results were analyzed. A total of 19 (5.58%) patients were found to have malignant thyroid enlargement. Among the 19, 11 (57.89%) were found to have Papillary carcinoma, 6 (31.57%) were having Follicular carcinoma, 1 (5.26%) had Medullary carcinoma, and 1 (5.26%) had Anaplastic carcinoma. The results in terms of frequencies and percentages are presented in the form of table.

**Table 1: Frequencies and Percentages of Thyroid carcinomas**

Type of Thyroid Malignancy	Frequencies and Percentages
Papillary	11 (57.89%)
Follicular	6 (31.57%)
Medullary	1 (5.26%)
Anaplastic	1 (5.26%)
Total No. of Malignancies	19 (5.58%)

**DISCUSSION**

Thyroid cancers, particularly Papillary carcinoma (PTC) commonly present as painless nodules which are found incidentally on imaging or on clinical examination<sup>14,16</sup>. Our study showed thyroid malignancy to be present in 5.58% of the total patients presented with thyroid nodule which is just above the lower limit shown by other studies<sup>17-20</sup>. Another study published in 2007 showed the incidence of thyroid malignancy in India is lower as compared to us due to variation in environmental factors<sup>21</sup>.

South Asia is a low to intermediate incident area for thyroid cancer<sup>22</sup>. The thyroid malignancy incidence has been rising for the last decade<sup>23-25</sup>, and predicted by a study to be rising till 2030<sup>26</sup>. The cause is most likely multifactorial. A study showed that the incidence varied more in the case of females than males by their geographical area<sup>27,30</sup>. Our study showed PTC to be the most prevalent one with a frequency percentage of 57.89%. Follicular carcinoma, Medullary carcinoma, and Anaplastic carcinoma had a percentage of 31.57%, 5.26% and 5.26% respectively. Other studies have also shown that the most common morphological type of thyroid cancer in Pakistan and the world is PTC with a prevalence of 69% and 87% respectively, followed by Follicular carcinoma, Medullary carcinoma and Anaplastic carcinoma<sup>31,32</sup>. Which is similar to our studies with little difference in the prevalence. PTC usually presents as a palpable thyroid mass<sup>33</sup>. This could be associated with pain, hoarseness, stridor or dysphagia. A PTC presenting primarily as a cervical lymphadenopathy is rare<sup>34</sup>. The prognosis and treatment of thyroid cancer depend on the tumor type and its stage at the time of diagnosis. PTC has an excellent prognosis when timely intervention is done<sup>35</sup>. with metastasis, the prognosis is still 43%. PTC when coexistent with Hashimoto's thyroiditis may have a more favorable outcome. At present, the only recognized measures for reducing TC risk is to avoid ionizing radiation and iodine deficiency, and to increase vegetable consumption. Factors predicting poor prognosis are age > or =45 years, positive lymph nodes and increasing tumor size for PTC, and distant metastases and increasing tumor size for FTC.

**CONCLUSION**

Papillary carcinoma is the most common morphological type found followed by Follicular, Medullary, and Anaplastic carcinoma.

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### **AUTHOR'S CONTRIBUTION**

Following authors have made substantial contributions to the manuscript as under:

**Hussain A:** Concept and design, data collection, manuscript writing.

**Ullah I:** Data collection

**Zada B:** Review the article, critical analysis, Literature review, Statistical analysis

**Din I:** Data analysis, result interpretation, references collection, helps in writing and typing.

**Khan AR:** Overall supervision and final approval.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.