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Research Article

### CLINICOPATHOLOGICAL DEMONSTRATION OF SOLITARY NODULE IN BAHAWAL VICTORIA HOSPITAL, BAHAWALPUR

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**Abstract:**

**Introduction:** Most patients present with an asymptomatic mass discovered by a physician on routine neck palpation or by the patient during self-examination. It is a clinical diagnosis. The incidence of solitary thyroid nodule is about 4%.

**Methods:** A retrospective study was done, including all the patients who had presented to Surgical Unit-II of Bahawal Victoria Hospital, Bahawalpur for one-year duration from May 2019 to May 2020. The patients enrolled were older than 12 years. We examined all cases concerning the patient's age and sex, thyroid examination and final histopathological diagnosis according to the patient's medical reports. Data was analyzed using SPSS 15 software.

**Results:** A total of 341 cases with a single thyroid nodule were selected. Of these, 2 (15.2%) were men and 289 (84.8%) were women. Thyroid examination revealed 272 (87.2%) cold nodules, of which 32 (11.76%) were malignant. Others include single nodule 15 (4.8%), toxic adenoma 7 (2.2%), hot nodule 18 (5.8%); 1 case with a hot nodule had malignancy.

**Conclusion:** A solitary thyroid nodule is common in our configuration that requires appropriate evaluation for evaluation. The incidence of malignant single thyroid tumors is high, although FNAC, ultrasound reports are not reliable in our study due to the lack of an expert. Surgery is the best treatment of choice and provides final histopathological diagnosis, better cosmesis and greater patient satisfaction.

**Keywords:** solitary nodule, thyroid, hot nodule, cold nodule

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**INTRODUCTION:**

A single thyroid nodule is defined as a discrete palpable swelling in an otherwise undetectable gland. Most patients present with an asymptomatic tumor found by a physician during routine neck palpation or by the patient during self-examination. This is a clinical diagnosis. The incidence of a single thyroid nodule is approximately 4%. They are detected by palpation in 3% to 7% by ultrasound in 20% to 76% in the general population and by autopsy in about 50%. Incidence increases linearly with age, and exposure to ionizing radiation may vary with geographic location and with iodine deficiency. Thyroid nodules are more common in women than in men (4: 1). It occurs most often in the age group of 21-40 years. Many disorders, both benign and malignant, can cause thyroid nodules. The clinical significance of thyroid nodules, apart from rare local compression symptoms or thyroid dysfunction, is primarily the possibility of thyroid cancer, which occurs in approximately 5% of all thyroid nodules. The patient's age is an important factor since the percentage of benign malignant nodules is higher in adolescents. Men also carry a greater risk of cancer. Lumps are less common in men, but most of them are malignant. Thyroid cancers are rare, accounting for only 1% of all cancers in the majority of the population. The chance of malignancy in a single cold thyroid nodule is 10-20%, but the incidence of malignancy in hot nodules is approximately 1%. Most cases of thyroid cancer are papillary cancer; as well as follicular, spinal and anaplastic carcinomas. The aim of this study was to evaluate patients with nodular goiter who were observed in our hospital and to examine the proportion of thyroid cancer in individual thyroid nodules and the distribution of tumor types.

**MATERIAL AND METHODS:**

A retrospective study was done, including all the patients who had presented to Surgical Unit-II of Bahawal Victoria Hospital, Bahawalpur for one-year duration from May 2019 to May 2020. The patients enrolled were older than 12 years. We examined all cases concerning the patient's age and sex, thyroid examination and final histopathological diagnosis according to the patient's medical reports. Data was analyzed using SPSS 15 software.

**RESULT:**

In total, 341 cases with a single thyroid nodule were selected. Of these, 52 (15.2%) were male and 289 (84.8%) were female, with a male to female ratio of 1: 5.5. The maximum number of cases was found in the 25–35 age group and a single nodule was found in the 13–84-year age group with a mean age of 32 years. Of the 341 cases, 279 (81.8%) cases were mild and 62 (18.2%) were malignant. The maximum malignancy was found in the 35–45 age group. There were more malignant neoplasms in men than in women, ie 15 (28.84%) cases in 52 men; and women amounted to 47 (16.26%) in 289 cases. Thyroid examination revealed 272 (87.2%) cold nodules, of which 32 (11.76%) were malignant. Others include single nodule 15 (4.8%), toxic adenoma 7 (2.2%), hot nodule 18 (5.8%); 1 case with a hot lump had malignancy. The most common mild histopathological diagnosis was colloid nodular goiter followed by follicular adenoma. The most common malignant pathology was papillary cancer in 33 (53.22%) cases, followed by follicular cancer in 7 (11.29%) cases; In 3 (4.83%) cases papillary carcinoma with the follicular type was diagnosed, in 2 (3.22%) there was a combined follicular and papillary carcinoma, and 1 (1.61%) case had anaplastic carcinoma. There was no medullary cancer, which is indicative of its rarity.

Table 1: Gender wise neoplasm

Gender	Benign	Malignant	Total
Male	37	15	52
Female	242	47	289
Total	279	62	341

Chart 1: Solitary nodule with different carcinoma.

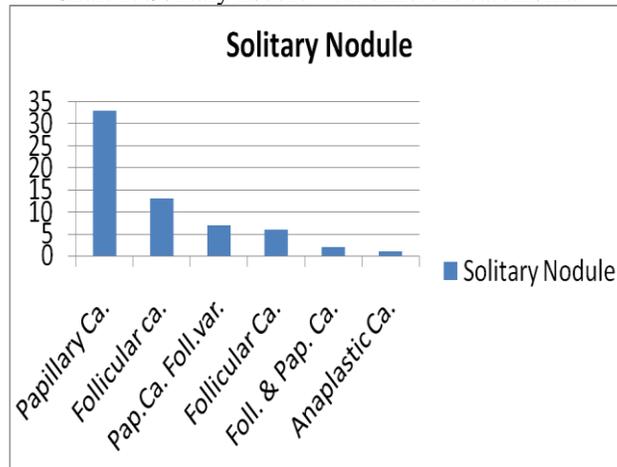
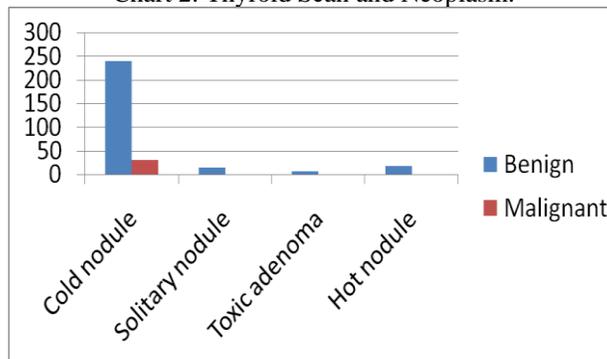


Chart 2: Thyroid Scan and Neoplasm.



### DISCUSSION:

Clinical evaluation begins with a detailed patient history and careful palpation of the thyroid gland. Regardless of how thyroid nodules are found, a detailed patient history is required. The information that needs to be checked includes; presence of symptoms, change in nodule size, previous head / neck radiation exposure, and a family history of thyroid disease or endocrinology. A thorough history and physical examination are the basis of cancer risk assessment. Rapid or gradual progressive enlargement, symptoms of tightness, a family history of medullary or papillary thyroid carcinoma, multiple type 2 endocrine glands, or familial neoplastic syndromes should increase the suspicion of malignancy. Similarly, a hard or hard lump attached to adjacent structures or a regional lymphadenopathy suggests malignancy. Colloidal nodules, cysts, and thyroiditis account for 80% of thyroid nodules, while benign follicular neoplasms account for 10% to 15% and thyroid cancer about 5%. Examination of thyroid nodules should begin with the assessment of the functional status of the thyroid gland. Tests include serum TSH, free thyroxine, and free triiodothyronine. These tests are important because a thyroid nodule

may be related to hyperthyroidism, which has a low risk of malignancy and requires anti-thyroid medication prior to surgery. All patients who develop a thyroid nodule should undergo ultrasound examinations of the tumor, thyroid gland, and cervical lymph nodes, if indicated. Ultrasound is an inexpensive, easily accessible and non-invasive examination. But still has limitations such as no experts, accurate diagnostic function. However, ultrasound really changed the FNAC score by accurately sampling it regardless of its size. CT is useful, although not required at regular intervals, in providing additional anatomical information such as the presence of a retrosternal goiter, symptoms of compression, and the relationship of the goiter with adjacent structures. Thyroid scintigraph plays a limited role in assessing a single thyroid nodule. Depending on the pattern of absorption, nodules are classified into hyper functional (hot), hypo functional (cold), and normal (warm). The role of scintigraphy in the diagnosis of thyroid nodules is generally limited to a single TSH-suppressed nodule, MNG with sternal extension, and the search for ectopic thyroid tissues such as ovaria goiter or sublingual thyroid. Hot nodules are visible in about 5% of scans

and are malignant in 1% of cases. About 80-85% of the nodules are cold and 10-15% of them are malignant. The incidence of malignant neoplasms in a warm nodule is 9%. This information alone is unlikely to change the subsequent treatment of the lump and further decision making. FNAC is the most important step in the evaluation of a thyroid nodule and is the procedure of choice in the diagnosis of thyroid nodules. It is able to provide specific information about the cellular composition of a nodule that guides subsequent management decisions. Diagnostic accuracy was nearly 98% with less than 2% false positives and false negatives. The four categories that are commonly used to describe FNAC results and cases reported there are; mild 70%; indefinite 10%; malignant 5% and non-diagnostic 15%. Treatment of thyroid nodules is based on a combination of history, screening, TFT, Isotop examination, and ultimately cytology results. If total thyroidectomy has been performed in FNAC. If FNAC is inconclusive, we proceed to a lobectomy and a thyroidectomy and follow the final histopathological report. Toxic nodules are treated by resection after making the patient euthyroid. In the case of a cold tumor-free nodule in FNAC, we still perform a lobectomy and a stoma, as our setup lacks an appropriate cytopathologist. The treatment is safe, removes the lesion, provides histological diagnostics, allows you to avoid leaving a hard nodule in the thyroid gland, radiation and possible hypothyroidism. And therapy plays a role for the toxic nodule, but it's not applied to our setup.

### CONCLUSION:

A solitary thyroid nodule is common in our setup that requires appropriate evaluation for evaluation. The incidence of malignant single thyroid tumors is high, although FNAC, ultrasound reports are not reliable in our study due to the lack of an expert. Besides, all patients are eager to excise the lump first. We are lacking an adequate follow-up; therefore, surgery is the best treatment of choice, ensuring final histopathological diagnosis, better cosmesis and greater patient satisfaction.

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