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Clinico-Pathological Parameter in Thyroid Carcinoma Subtypes

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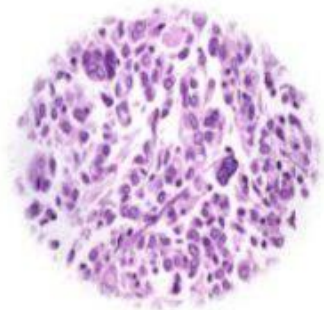
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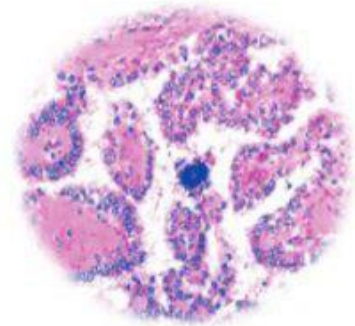


INTRODUCTION:

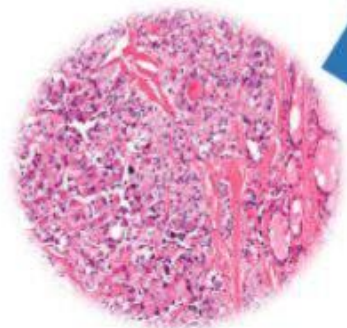
- **Thyroid cancer** is a disease in which malignant (cancer) cells form in the tissues of the thyroid gland.
- Thyroid cancer is a relatively rare malignancy representing only 1.5% of all cancer types. it is the most common endocrine cancer, accounting for 92% of all endocrine tumours.
- Long-standing goiter (more than 5 years) is regarded as the one of the strongest risk factors for developing thyroid cancer.



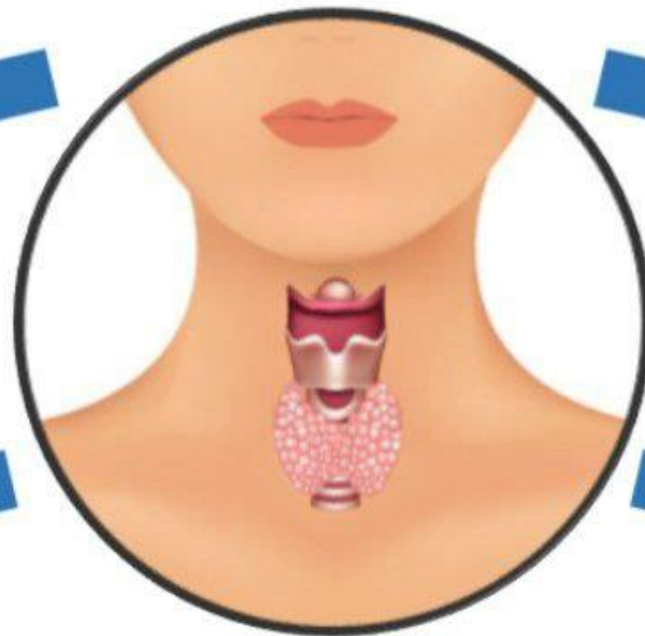
Anaplastic Thyroid



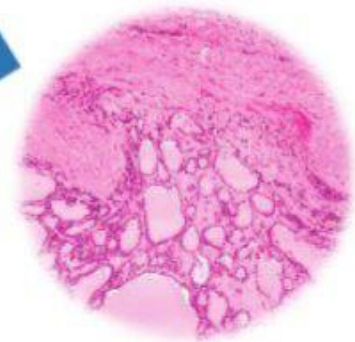
Papillary Thyroid



Medullary Thyroid



Types of Thyroid Cancer



Follicular Thyroid

The subtypes of thyroid carcinoma:

❖ Papillary carcinoma:

- Papillary carcinoma is the most common thyroid cancer.
- Papillary thyroid carcinoma (PTC) could be a major differentiated adenocarcinoma which comprises 90% of thyroid cancers.
- Most cases have great prognosis, but roughly 10% of PTC patients undergo recurrences such as lymph node recurrence and lung metastasis.

❖ **Follicular thyroid carcinoma:**

- Follicular thyroid carcinoma (FTC) represents 5-15% of thyroid cancers with follicular differentiation but no papillary nuclear characteristics.

❖ **Medullary thyroid carcinoma:**

- Medullary thyroid carcinoma (MTC) arises from thyroid parafollicular (C) cells
- The disease-specific mortality represents approximately 40% thyroid cancer deaths, only <2% of thyroid cancer.

❖ **Anaplastic carcinoma:**

- (ATC) is extremely aggressive undifferentiated tumor, with nearly 100% (Wenter).

How to improve discrimination of thyroid carcinoma:

- Cell types.
- Tumor staging.
- Lymph node metastasis.
- Distant metastasis.
- aggressiveness in other tumors.

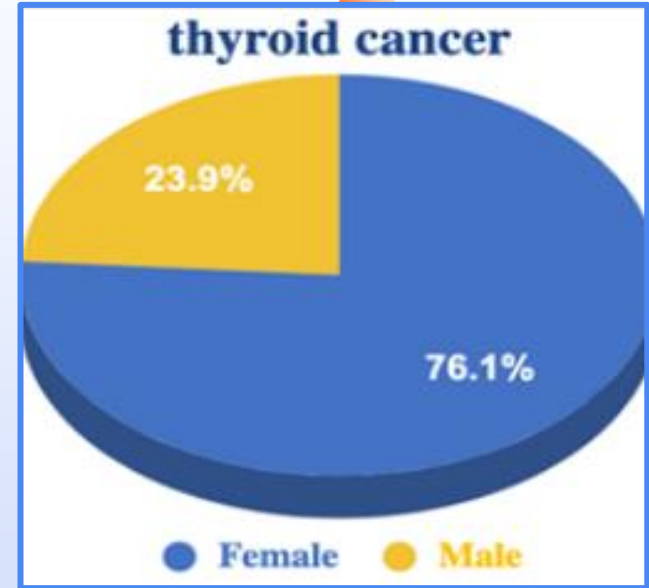
The material and methods :

- The team conducted a retrospective study using the clinical and histopathological data that were retrieved from the medical archives.
- The data involved 184 patients who underwent thyroidectomy the pathology department of the faculty of medicine, University of Benghazi with the medical reports from the oncology department in Benghazi Medical Center.
- Data regarding background variables include, gender, age at histologic diagnosis, grading, and staging were obtained from pathology reports.

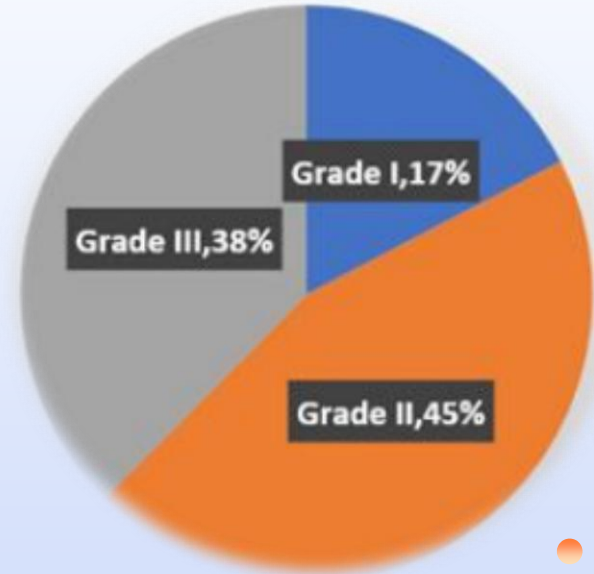
- Specimens were fixed in 10% formalin and paraffin processed.
- Tissue sections were 3-5 μm thick. The sections were stained with hematoxylin and eosin.
- Quantitative variables such as age are expressed as mean value, qualitative variables like histopathological diagnosis are presented by frequencies and percentages.
- The tumor staging was done using the TNM stage system, which is one of the strongest prognostic factors for expecting survival of the patients.
- This system takes into account tumor size, lymph node involvement and metastasis.

The results of thyroid carcinoma samples:

❖ A total of 184 samples were studied. There were 44 (23.9%) male and 140 (76.1%) females, giving a female: male ratio of 7: 2.



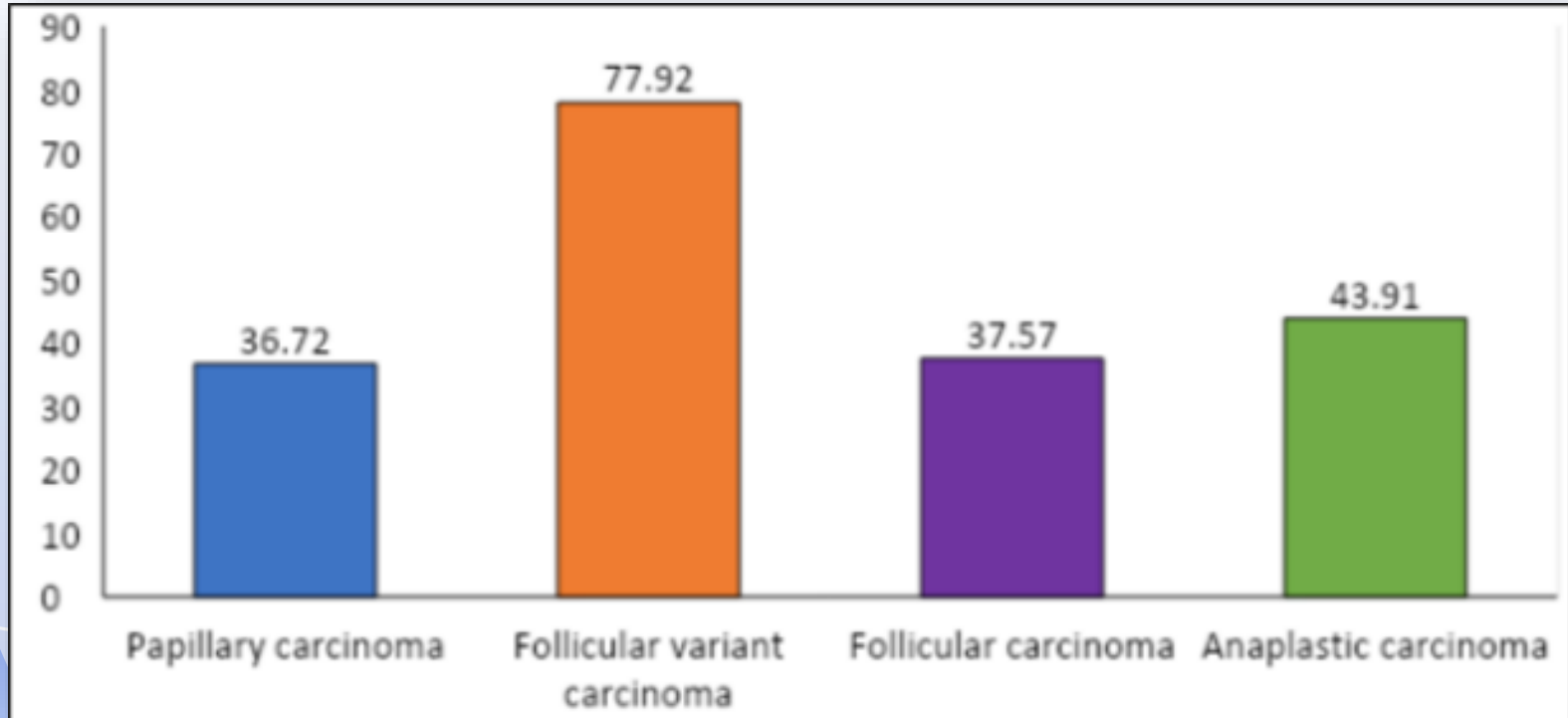
- ❖ In young patients (below 19 years) the percentage of malignancy was not greater than for the whole age group (20.2% vs.25.6%). Anaplastic and metastatic cancers affecting the thyroid were the main subjects in the age group.
- ❖ Regarding the grade of thyroid carcinoma the most common grade is grade II (45%).



The microscopic examination:

- **papillary carcinoma:** the number of cases include 89 (48.4%) patients divided as 76 female (85.4%) and 13 male (14.6%).
- **follicular variant of papillary carcinoma:** a (29.3%) 47 female and 7 male.
- **Anaplastic carcinoma:** a (17.4%) 24 females and 8 males.
- **Follicular carcinoma:** (4.9%) most of them are female.

The mean age according to histopathological types was as the following:

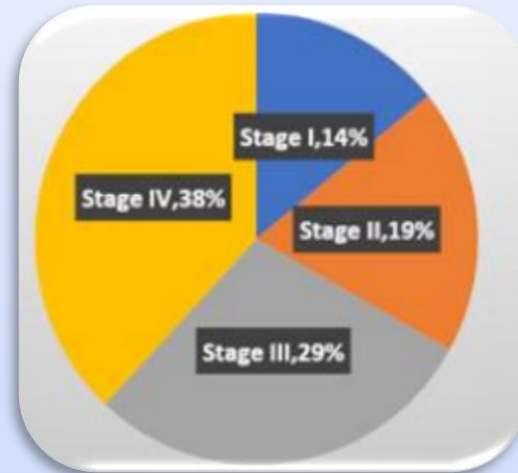


Discussion:

- Thyroid gland lesions are common and occur worldwide
- The incidence and histopathological pattern of thyroid diseases show geographical and regional variations related to age, sex, dietary and environmental factors.
- At an old age, thyroid cancer is usually diagnosed at an advanced stage, especially in females.
- The mean age of patients with thyroid malignancy was 40.5 years with the median age about 39 years.

- The study showed that papillary carcinoma was the most common thyroid malignancy (48.4%) with female.
- The percentage of thyroid malignancy in each age group revealed two peaks in both genders, namely in patients aged 20 to 29 years and in elderly patients (over 65 years old).
- The highest ratio of malignancy occurred in the elderly group (37.2%) receiving surgical treatment.

- They looked into the staging of studied cases of thyroid carcinoma at the time of diagnosis and features like tumor size, capsular and lympho-vascular invasion, in the histopathology reports.
- The results showed that the percentage of patients presented in stage III and stage IV more than the stage I-II, which lead to increased rate of recurrence and decreased survival of the patients.



Conclusion

- The present study shows that the thyroid carcinoma affects the middle age group with the median age 39, the thyroid cancer affects females (76.1%) more than the male (23.9%) giving a female: male ratio of 7: 2.
- Papillary carcinoma and Follicular variants of papillary carcinoma were generally more frequent than the rest of the histological types. Approximately the half of cases with grade II (45%), and (38%) of cases presented with stage IV.
- The association parameters of aggressiveness with an unfavorable behavior, suggesting the role of the histopathological diagnosis, grading and staging of thyroid carcinomas. Admittedly, supplementary studies on cohorts and more heterogeneous population, are necessary to validate and extend our results.

The limitation and recommendations :

- The recorded data in some patients was not completed and the data of 2017 was missed in BMC. There is a need to build resources through high quality centers to collect data before surgery and after surgery to cover the state of primary tumor and postoperative recurrence, metastasis and survival.

References

- Abdelmalek Mohamed Elhashani, Jeilan Nazih Shahbaz, Sara Abdulrhman Shaqami, Arwa Burgeia, H. M. G. (2021). Clinico-Pathological Parameter in Thyroid Carcinoma Subtypes. *International Journal of Science and Research (IJSR)*, 10(11), 1404–1407.

Thank
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