INCIDENCE OF MALIGNANCY IN BETHESDA III AND IV THYROID NODULES

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Introduction

Thyroid nodules:

Thyroid nodules represent an abnormal increase in the volume of the thyroid parenchyma, and can as well be construed as thyroid heterogeneity possibly due to both genetic and epigenetic factors. By 'palpation', 3% - 7% of the general population has palpable nodules, while 20% - 76% of thyroid nodules are observed in images of grey-scale ultrasound and autopsy data. It is estimated that 20% to 48% of thyroid nodules are incidentalomas, that are characterized for being discovered in incidental manner, either with or without accompanying clinical symptoms. These incidental thyroid lesions are frequently identified through imaging modalities such as ultrasound, computed tomography (CT), magnetic resonance imaging (MRI), and 18F-fluorodeoxyglucose positron emission tomography (PET), often conducted for reasons unrelated to thyroid evaluation. Thyroid nodules are mostly benign, with only 5% to 15% being malignant. These nodules are observed more repetitively in elderly population as well as individuals with deficiency of iodine. Additionally, prevalence of thyroid nodules in females are more in females compared to males, with a ratio of 4:1. Cancer of the thyroid gland is the most prevalent form of malignancy related to endocrine, representing 2% to 3% of the entire cancers. Its occurrence is three to four times more common in females than in their counterparts males, with a new study indicating that above 77% of thyroid cancer patients globally are female. Additionally, over 95% of cases of thyroid cancer are classified as differentiated carcinomas, which arise from thyroid follicular cells and retain the capacity of concentrating iodine.

Aim of the work

This study aims to determine the incidence of malignancy in patients presenting with thyroid nodules with Bethesda categories III and IV on fine needle aspiration biopsy.

Patients and Methods

This study included all patients who were admitted to Alexandria University Main Hospital, Faculty of Medicine, Head, Neck, and Endocrine Surgery Unit (HNESU) with Bethesda III and IV thyroid nodules during a period of 12 months.

Inclusion criteria

•Patients presenting with Bethesda III and IV thyroid nodule

Exclusion criteria

•Patients with recurrent goiters

•Thyroid nodules with other than III and IV Bethesda categories.

All participants in the current study underwent the following procedures:

Preoperative assessment:

A.Clinical:

•Conducting a thorough taking

•Complete clinical assessment mainly anterior neck

B.Laboratory

-Thyroid profile TSH, T3 and T4.

C.Imaging

-Neck ultrasound to comment on the thyroid swelling and nodal status

D.Cytology

-Ultrasound guided fine needle aspiration biopsy (FNAB) from thyroid nodule.

Statistical analysis Data was fed in computer and results was analyzed using IBM SPSS software package version 24.0 (Chicago, IL) prentice Hall was used to analyse the data after fedding it in the computer.

Statistical analysis of the data

Data were fed to the computer using IBM SPSS software package version 24.0.

Results

Table 1: Relation between pathological findings and Bethesda category

Bethesda category	Pathological findings				Total	X^2	p value
	Benign "n=39"		Malignant "n=61"				
	No.	%	No.	%			
III	21	87.5	3	12.5	24	31.2	0.001*
IV	18	23.7	58	76.3	76		
Total	39		61		100		

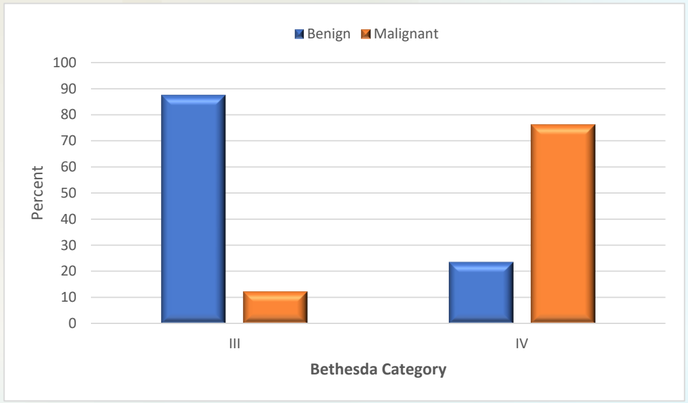

Figure 1: Relation between pathological findings and Bethesda category.

Conclusion

1.From the results of this study, it can be concluded that the incidence of malignancy is 12.50% for Bethesda III and as high as 76.31% for Bethesda IV thyroid nodules.

2.In addition to Bethesda category, significant risk factors of malignancy included size of nodule, calcification, heterogeneity, absent halo, and hyper-vascularity (on Doppler scanning).