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Case Report

A case of papillary thyroid carcinoma in toxic adenoma: are hyperfunctioning nodules truly innocent all the times?

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ABSTRACT

Thyroid nodule is seen commonly in clinical practice. Thyroid scintigraphy should be performed for the evaluation of thyroid nodules in case of suppressed TSH. We would like to present a case of toxic adenoma with the diagnosis of papillary thyroid carcinoma. Forty-four-year-old female patient had applied to the hospital with the diagnosis of thyroid nodule. Thyroid fine needle aspiration biopsy (FNAB) was performed for the evaluation of thyroid nodule measured as 47x12 mm. This nodule was in mixed solid form bearing cystic components. FNAB revealed that the thyroid nodule was benign. Our ultrasonographic evaluation was consistent with a thyroid nodule located at right lobe with a diameter of 43x18x28 mm. The patient underwent right thyroid lobectomy. Pathology report revealed macrofollicular variant of papillary thyroid carcinoma. The tumor was 3.5 cm in diameter with regular margin and 0.2 cm away from the surgical border. The tumor didn't spread out of the thyroid capsule. Second thyroid surgery was performed due to remaining thyroid tissue. After that ablative radioactive iodine therapy was applied. Guidelines in Endocrine literature report that hyperfunctioning nodules are almost always benign. However, the risk of malignancy was reported as a weighted rate of 3.1%. As follicular lesions are seen in high percentage in hot nodules, surgery should be recommended in case of the cytological results of a follicular neoplasm of a hyperfunctioning nodule. So, hyperfunctioning thyroid nodules warrants careful evaluation and appropriate therapy. We wanted to draw attention of the clinicians for this rare issue.

Keywords: Hot nodule, Thyroid biopsy, Thyroid papillary carcinoma

INTRODUCTION

Thyroid nodule is seen commonly in clinical practice. The initial step for evaluation of a thyroid nodule is the measurement of serum TSH (Thyroid Stimulating Hormone) level. Thyroid scintigraphy should be performed for the evaluation of thyroid nodules in case of suppressed TSH. We would like to present a case of toxic adenoma with the diagnosis of papillary thyroid carcinoma.[1]

CASE REPORT

Forty-four-year-old female patient had applied to the hospital with the diagnosis of thyroid nodule. Thyroid fine needle aspiration biopsy (FNAB) was performed for the evaluation of thyroid nodule measured as 47x12 mm. This nodule was in mixed solid form bearing cystic components. FNAB revealed that the thyroid nodule was benign. Propylthiouracil had been started before admission to our clinic according to laboratory values of

TSH and free thyroxin (fT4) which was 0.005 µIU/ mL and 1.75 ng/dL, respectively. On admission to our endocrinology clinic we performed thyroid scintigraphy showing hyperfunctioning thyroid nodule with scene of suppressed rest of thyroid region (Figure 1).

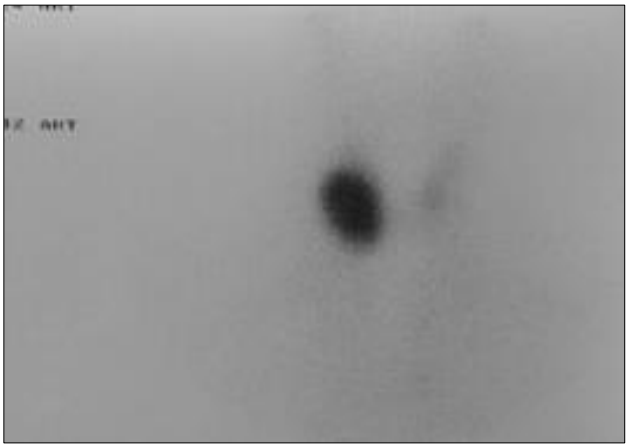

Figure 1: Thyroid scintigraphy showing hyperfunctioning nodule on the right side.

Thyroid auto-antibodies were negative. Radioactive iodine therapy was suggested as a modality of treatment. However, the patient preferred surgery for her treatment with the concern of her father's death due to leukemia. Our ultrasonographic evaluation was consistent with a thyroid nodule located at right lobe with a diameter of 43x18x28 mm (Figure 2).

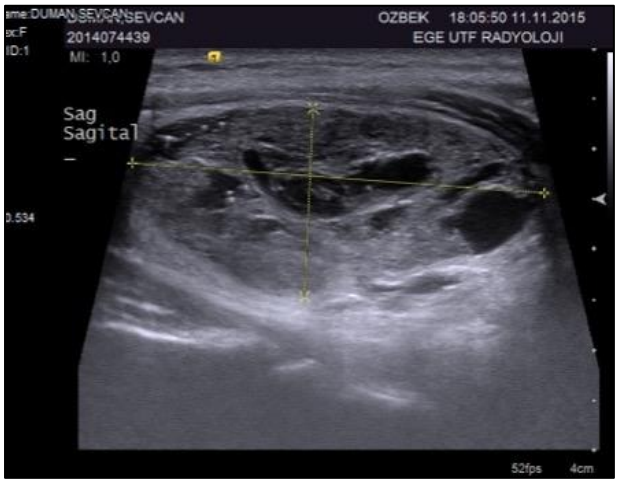

Figure 2: Thyroid ultrasound showing nodule at right lobe with a diameter of 43x18x28 mm.

The nodule was mixed type solid nodule with regular margins and thin hypoechoic peripheral halo. Central chaotic hypervascularity and microcalcification was not detected. The patient underwent right thyroid lobectomy. Pathology report revealed macrofollicular variant of papillary thyroid carcinoma. The tumor was 3.5 cm in diameter with regular margin and 0.2 cm away from the surgical border. The tumor didn't spread out of the thyroid capsule. Second thyroid surgery was performed due to remaining thyroid tissue. After that ablative radioactive iodine therapy was applied.

DISCUSSION

Guidelines in Endocrine literature report that hyperfunctioning nodules are almost always benign. According to this statement they recommend no further cytologic evaluation in autonomously hyperfunctioning nodules.[1] However, the risk of malignancy was reported as a weighted rate of 3.1%.[2] It was seen that the prevalence of malignancy in hot nodules ranged from 0-12.5%. So, the possibility of malignancy in a hot nodule should not be underestimated. Mirfakhraee et al. stated that 57.1% of malignant hot nodules were papillary thyroid carcinoma (PTC), 36.4% of cases were follicular thyroid carcinoma and Hurtle cell carcinoma was found in 7.8% of cases.[2]

According to U.S National Cancer Data Base related to all thyroid nodules, the prevalence of PTC was approximately 85%, FTC was 10%, Hurtle cell carcinoma was nearly 3%.[3] Thus, it seems that FTC and Hurtle cell carcinoma was seen in higher prevalence in hot nodules. Furthermore 18.2% of PTC in hot nodules was the follicular variant of PTC (FVPTC).[2] As follicular lesions are seen in high percentage in hot nodules, surgery should be recommended in case of the cytological results of a follicular neoplasm of a hyperfunctioning nodule. According to 2009 thyroid nodule and thyroid carcinoma management guideline, surveillance of a hot nodule with the histology of follicular neoplasm may not be reassuring as previously stated.[4]

Although malignant potential of hyperfunctioning thyroid nodules is low, possibility of thyroid carcinoma can not be excluded in those thyroid nodules. So, hyperfunctioning thyroid nodules warrants careful evaluation and appropriate therapy. We wanted to draw attention of the clinicians for this rare issue.

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