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Adult women with papillary thyroid cancer

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ABSTRACT

Differentiated thyroid cancer of papillary type have an increasing incidence on women of reproductive age but also in menopause, possible related to new triggers that act as endocrine disruptors which are more or less described until this moment or possible related to the increased accessibility to thyroid ultrasound. The incidence of non-medullary thyroid cancer in women is 3 times higher than in males so the influence of estrogens seems rational. Yet, some meta-analyses did not confirm a direct link with estrogens exposure during reproductive years. Thyroid cancer is also diagnosed in menopause which is a low estrogens status thus other risk factors should be taken into consideration; among these obesity and smoking are frequently incriminated. We aim to introduce a two cases series of adult females with differentiated thyroid carcinoma which was diagnosed from an initial routine ultrasound.

Keywords: thyroid cancer, ultrasound, thyroid nodule

INTRODUCTION

Differentiated thyroid cancer of papillary or follicular type have an increasing incidence on women of reproductive age but also in menopause, possible related to new triggers that act as endocrine disruptors which are more or less described until this moment or possible related to the increased accessibility to thyroid ultrasound (1,2,3). The incidence of non-medullary thyroid cancer in women is 3 times higher than in males so the influence of estrogens seems rational (4). Population based studies showed that the risk increases with the age of first menstruation while for women in menopause 2 additional risk factors are potentially involved: surgical menopause and the age of menopause earlier than 55 years (4). Opposite, breastfeeding, oral contraceptives and menopausal hormone therapy might decrease the risk of follicular cells-related cancer (4). Among the two types of differentiated thyroid cancer, most correlations with estrogens status involve papillary rather than follicular type (5). Yet, some meta-analyses did not confirm a direct link with estrogen exposure during reproductive years (5). Recently, a study showed that risk of cancer (including thyroid cancer) is higher in infertile women versus fertile subjects (in years following the infertility evaluation) (6). Thyroid cancer is also diagnosed in menopause which is a low estrogens status thus other risk factors should be taken into consideration; among these obesity and smoking are frequently incriminated (7). On the other hand, the women diagnosed and treated for thyroid cancer may have a higher risk of abnormal parameters regarding reproductive years (8).

AIM

We aim to introduce a two cases series of adult females with differentiated thyroid carcinoma which was diagnosed from an initial routine ultrasound.

METHOD

This is a case report. Ultrasound feature and thyroid profile is introduced.

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CASE PRESENTATION 1

This is a 76 year old non-smoking female resident in iodine sufficient area. She is known for the last three years with ultrasound-detected thyroid nodule with suspect features for thyroid cancer. Thyroidectomy was recommended at that time but the patient refused it. Currently, the thyroid ultrasound shows a right lobe of 3.3 by 3.2 by 4.3 cm, which is entirely displayed by a nodular conglomerate with hipoechoic, inhomogeneous pattern, containing several infiltrative images into the lobe and anterior capsule while posterior contour is shaded. The nodule is mobile during deglutition and it has very large diameters: 4.3 by 3.4 by 3.3 cm (TI-RADS 4C) (Fig. 1).

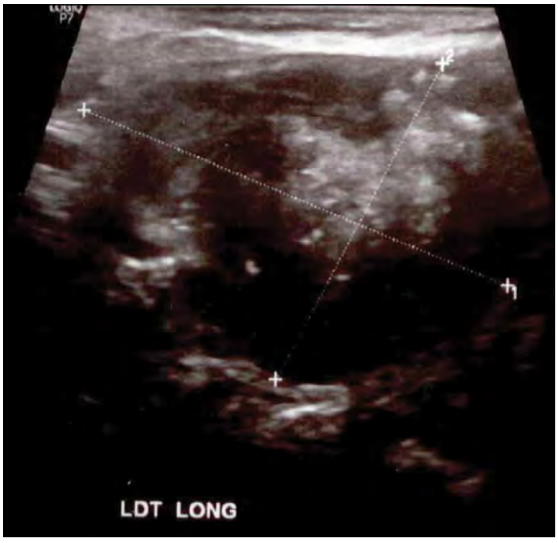

FIGURE 1A. *Longitudinal aspect of right lobe with increase dimensions and suspect nodular conglomerate*

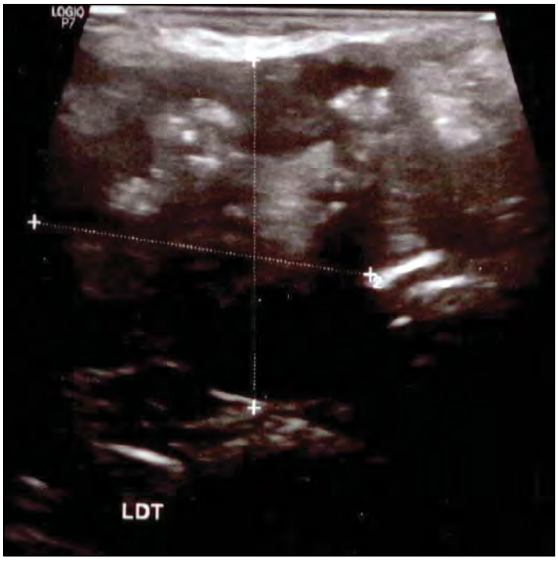

FIGURE 1B. *Right lobe at thyroid ultrasound: 3.3 by 3.2 by 4.3 cm (inhomogenous, hypoechoic pattern, poorly shaped aspect)*

The isthmus also associates a nodular conglomerate with displays the normal structure, of 1.3 by 0.88 by 1.8 cm (Fig. 2).

FIGURE 2. *Thyroid ultrasound: istm with a nodule of 1.3 by 0.88 by 1.8 cm*

The left lobe has 4-5 micronodules of maximum 0.52 cm. No local lymph nodes were detected. TSH (Thyroid Stimulating Hormone) is normal, so is blood calcitonin, and anti-thyroid antibodies. Despite the high malignancy risk based on fine needle aspiration pointing a papillary carcinoma, the patient still refused thyroid removal.

Case presentation 2

This is a 48-year old non-smoking female, resident for non-endemic area, who had a routine ultrasound done at the level of thyroid. A suspect nodule of 3 cm is identified. On admission, the multinodular goitre is also clinically detected with normal thyroid function confirmed by blood TSH. The ultrasound reveals: the right thyroid lobe has 1.49 by 1.59 by 4.73 cm, the isthmus has 0.84 cm, the left lobe has 2.5 by 3.03 by 5.23 cm with inhomogeneous, hypoechoic pattern, polinodular aspect: right lobe has a nodule with some small area on necrosis insight of 1.33 by 0.88 by 0.93 cm, left lobe has another several nodules which are poorly shaped forming a conglomerate of 3 by 2.5 by 2.27 cm, and another nodule of 0.89 by 0.54 by 0.73 cm; the isthmus has a micronodule of 0.6 by 0.4 by 0.6 cm, and a macrocalcification of 0.22 by 0.13 cm. No latero-cervical adenopathy is identified (Fig. 3).

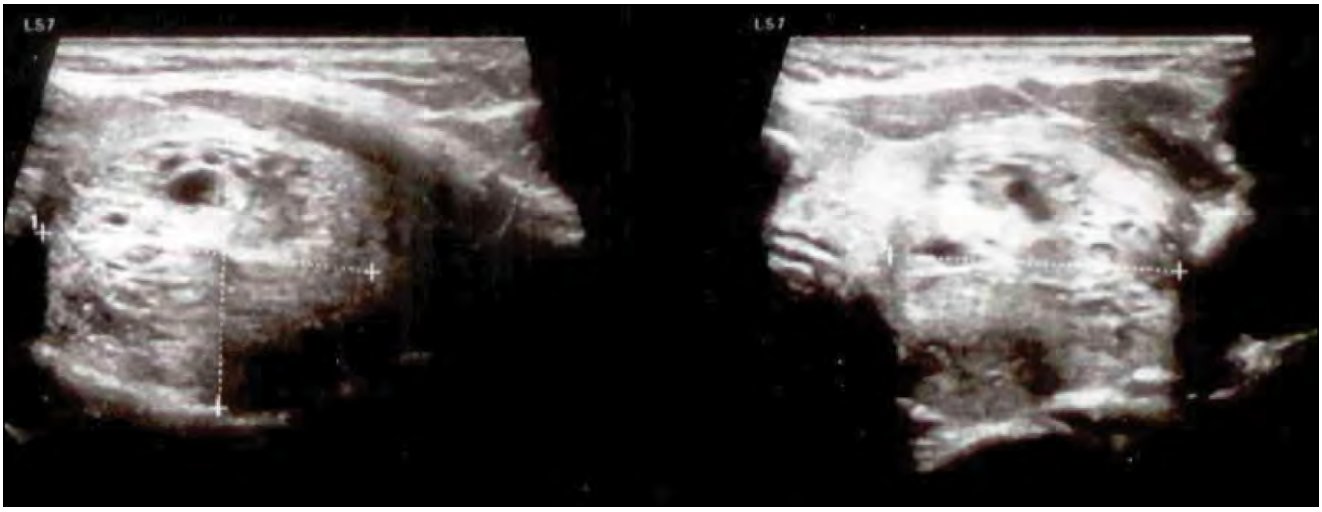

FIGURE 3A. *Thyroid ultrasound showing a large macronodule on left lobe*

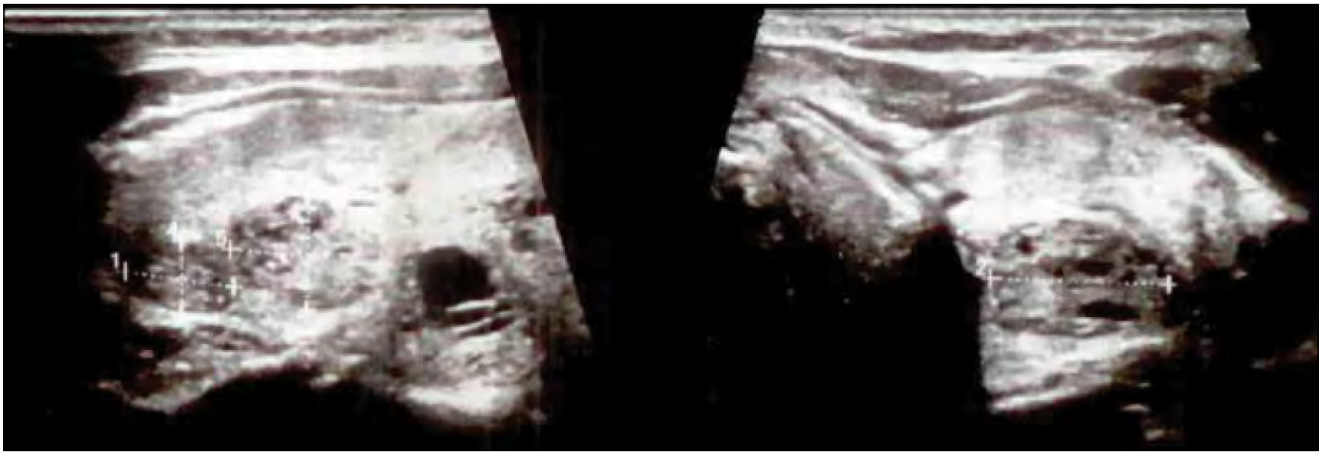

FIGURE 3B. *Thyroid ultrasound showing a multiple micronodules on left lobe*

Fine needle aspiration showed Hurtle cells with potential follicular proliferation. Total thyroidectomy is performed without surgical complications. The pathologic report confirmed a papillary carcinoma of follicular type. Further radioiodine I^{131} was added and life suppressive levothyroxine therapy was initiated.

DISCUSSION

The first case has indication of thyroidectomy because of ultrasound aspects. The fine needle aspiration is useful in addition to ultrasound to point the malignancy risk but the patient was not compliant. Highly introduced TI-RADS classification combines composition, margins, hypoechoic foci, shape, and echogenity to a scoring system in order to indicate the risk of malignancy and further approach like fine needle aspiration or thyroidectomy (9,10). TI-RADS 4 means a risk of malignancy of 50-85% (9,10). The second cases introduce Hurtle cells connected issues. The cancer with this type of cells has a more aggressive profile and their identification starts from cytological report (this particular aspect was study including in Romanian population) (10,11,12). However, in our second case their post-operative histological confirmation was not done.

CONCLUSION

Thyroid ultrasound remains the best tool for high risk nodules in both pre- and post-menopausal women if direct information based on fine needle aspiration or pathological exam is not done.

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