

Can pregnancy influence the outcome of a malignant thyroid nodule?*

Pode a gestação influenciar a evolução de nódulo tireoidiano maligno?

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Abstract The authors report the case of a patient with a thyroid nodule with benign sonographic and cytopathological features that had presented a decrease of more than 50% in three years and changed its pattern during her pregnancy, being diagnosed as papillary carcinoma. It was concluded that pregnancy can either increase the risk for malignant transformation or accelerate the growth of a malignant thyroid nodule, corroborating pre-existing literature data.

Keywords: Pregnancy; Cancer; Thyroid; Carcinoma; Papillary.

Resumo Os autores descrevem um nódulo tireoidiano com padrões ultrassonográfico e citopatológico benignos que diminuiu mais de 50% em três anos e se modificou durante a gestação, constatando-se que era carcinoma papilífero. Conclui-se que a gestação pode aumentar o risco de malignização ou acelerar o crescimento de nódulo tireoidiano maligno preexistente, corroborando dados da literatura.

Unitermos: Gestação; Câncer; Tireoide; Carcinoma; Papilífero.

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INTRODUCTION

It has been reported that thyroid cancer worsens during pregnancy^(1–3) and the worst prognosis would be related to the estrogen receptor alpha-mediated growth factor, whose expression is enhanced in thyroid tumors that run their courses with pregnancy⁽¹⁾.

The present case report describes a thyroid nodule followed-up before, during pregnancy and during lactation, that had presented a 58% decrease in volume since its diagnosis with benign sonographic and cytopathological features⁽⁴⁾. Sonographic findings suggesting malignancy only were detected during pregnancy and lactation, when fine-needle aspiration puncture (FNAP) was repeated, demonstrating the presence of a papillary carcinoma. In the present case, the follow-up of the disease

progression was critical for the detection of the change in the morphological texture and Doppler patterns, suggesting the lesion malignancy and allowing the adoption of an appropriate approach.

CASE REPORT

A female 31-year-old patient accidentally detected a thyroid nodule, whose first FNAP performed on August 9, 2005 diagnosed a benign hemorrhagic cystic lesion. On November 3, 2005, ultrasonography (US) demonstrated the presence of a mass with mixed echogenicity in the left thyroid lobe (Figure 1), with a benign pattern, and measuring 1.2 × 0.8 × 0.6 cm in the longitudinal, transverse and anteroposterior diameters, respectively, and whose cystic component presented fluid-fluid level suggesting density stratification like in the mixture of water and oil, that is frequently found in cases of intranodular hemorrhage. Doppler study demonstrated a single vessel penetrating the vegetation (Figure 2). A further US study performed on October 6, 2006 revealed a 33% decrease in the nodular volume resulting from partial fluid resorption, while the solid component of the mass remained unchanged. On November 4, 2009, at the 22nd week of pregnancy, US

study (Figure 3) revealed a 36% nodule volume decrease resulting from cystic resorption, since the vegetation had tripled in volume and presented hypervascularization, both signs suspicious for malignancy^(1,4,5). A second US-guided FNAP was indicated and performed on April 23, 2010, suggesting two hypotheses: pseudo-papillary hyperplasia in adenomatous goiter, or papillary carcinoma. Another sonographic study performed on May 10, 2010, 40 days after delivery, demonstrated that the thyroid nodule had grown 2.3 times in six months, was totally solid, poorly delimited, hypoechogenic and presented microcalcifications, suggesting malignancy⁽⁴⁾ (Figure 4). Surgery was performed on May 20, 2010, with diagnosis of a classical pattern of a T1A stage encapsulated papillary carcinoma measuring 0.5 cm.

DISCUSSION

The initial FNAP and US classified the lesion as a benign thyroid nodule, but it was malignant when it was operated three years after the diagnosis. Although the presence of a single vessel in the central region of the mass at the initial Doppler study is considered as a suspicious sign of malignancy by some authors^(6,7), others only consider

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Figure 1. First ultrasonography study (November 3, 2005) demonstrating a mixed nodule in the left thyroid lobe, with benign morphologic pattern and with cystic component presenting density stratification like in water and oil mixture, that is a frequent finding in intranodular hemorrhage.



Figure 2. Doppler study of the nodule in the left thyroid lobe showing a vessel penetrating the vegetation (arrow), characterizing it as live tissue (blood clot is excluded).

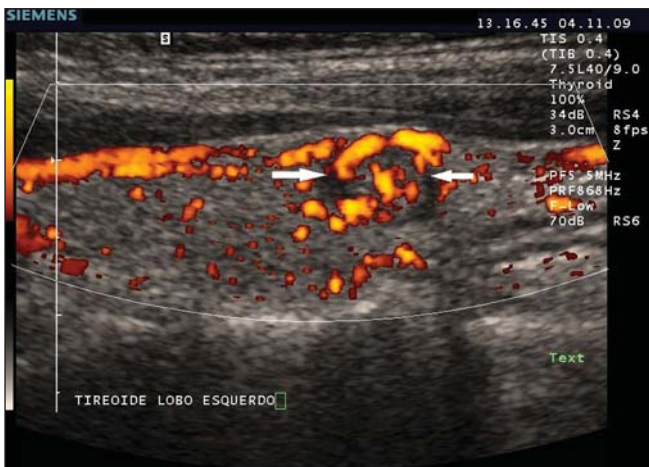


Figure 3. Twenty-second week of gestation. Longitudinal section of a nodule in left thyroid lobe with hypervascularization in the solid component (arrows).

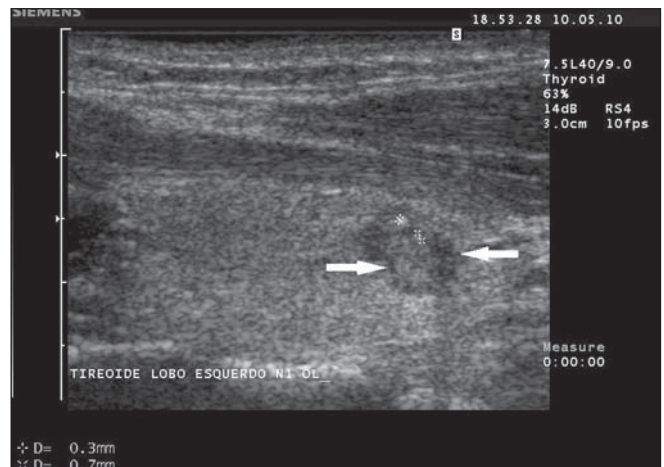


Figure 4. Forty days after delivery, the nodule in the left thyroid lobe (arrows) is completely solid, poorly delimited, hypoechoic and with microcalcifications (calipers).

the Doppler pattern as malignant in cases where the mass is completely hypervascularized^(4,5,8), and the 2008 consensus indicates FNAP for the investigation of such nodules⁽⁵⁾. Two hypotheses prevail in the present case: either the nodule was benign and became malignant, or it was already malignant (false-negative at FNAP and US), accelerating its growth during pregnancy. It was observed that the nodule decreased about 58% between the first and the third US studies, the fluid component was resorbed, and suspicious signs appeared: a three-fold increase in size and hypervascularization of the solid component. It is more likely that malignancy was present since the beginning, and the pregnancy contributed to the accelerated growth

of the mass. The US follow-up allowed the investigators to raise the suspicion of malignancy that was confirmed by FNAP. The authors conclude that the pregnancy may have influenced the growth of the pre-existing malignant thyroid nodule, and that the evolutive follow-up was fundamental to the correct diagnosis in the present case.

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