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 diminuíram 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.


INTRODUCTION

It has been reported that thyroid cancer worsens during pregnancy1–3 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 pregnancy4,11.

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 features4,13. 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, since the vegetation had tripled in volume and presented hypervascularization, both signs suspicious for malignancy4,13. 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, hypechoenic and presented microcalcifications, suggesting malignancy4 (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 authors4,13, others only consider...
the Doppler pattern as malignant in cases where de mass is completely hypervas-
cularized\(^4,5,8\), and the 2008 consensus in-
dicates FNAP for the investigation of such
odules\(^5\). 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 preg-
nancy. It was observed that the nodule de-
creased about 58\% between the first and
the third US studies, the fluid component
was resorpted, and suspicious signs ap-
peared: a three-fold increase in size and
hypervascularization of the solid compo-
nent. It is more likely that malignancy was
present since the beginning, and the preg-
nancy contributed to the accelerated growth
of the mass. The US follow-up allowed the
investigators to raise the suspicion of ma-
lignancy that was confirmed by FNAP. The
authors conclude that the pregnancy may
have influenced the growth of the pre-ex-
isting malignant thyroid nodule, and that
the evolutive follow-up was fundamental
to the correct diagnosis in the present case.

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