

Focal Nodular Hashimoto's Thyroiditis: Comparison of Ultrasonographic Features with Malignant and Other Benign Nodules

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Abstract

Introduction: Hashimoto's thyroiditis (HT) can present as focal nodular disease. This study aimed to determine the distinguishing sonographic features of nodules in biopsy-proven focal HT. **Materials and Methods:** The study included 388 thyroid nodules from 310 patients who underwent ultrasound-guided fine-needle aspiration biopsy (FNAB). There were 28 focal HT, 27 malignant and 333 other benign nodules. Sonographic features of focal HT nodules on prebiopsy ultrasound were compared with malignant nodules and other benign nodules using multinomial logistic regression adjusting for the correlation between multiple nodules obtained from the same patient. **Results:** Most focal HT nodules were purely solid (92.8%), iso-hyperechoic (70.4%), had regular margins (75.0%) and central vascularity (85.7%). Hypoechoogenicity (29.6% vs 42.3%; $P = 0.017$) and microcalcifications (3.6% vs 44.4%; $P = 0.003$) were significantly less common in focal HT than malignant nodules. None of the focal HT nodules demonstrated marked hypoechoogenicity, irregular margins or cervical lymphadenopathy, which are traditionally associated with malignancy. Compared to other benign nodules, focal HT nodules were significantly more likely to be purely solid (92.8% vs 49.0%; $P = 0.016$), ill-defined (25.0% vs 7.0%; $P = 0.004$) and lack comet-tail artefacts (92.9% vs 66.1%; $P = 0.012$), which in combination were 17.9% sensitive and 94.6% specific for focal HT. **Conclusion:** Awareness of the above-described sonographic appearances of focal HT may aid in differentiating them from malignant nodules and risk-stratify for FNAB. While there is substantial overlap with other benign nodules, a combination of the above-mentioned 3 ultrasound features is highly specific for focal HT and can prompt further serological evaluation in clinically unsuspected HT.

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