Atypical ultrasonographic patterns of papillary thyroid carcinoma: how to recognize them?

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Abstract

Purpose: To analyze the atypical papillary thyroid carcinoma (PTC) US patterns, comparing them with typical cases and to describe their main characteristics.

Methods and materials: Retrospective review of thyroidectomies between 2013 and 2016 with PTC. Classical PTCs (Group A) were separated from those that showed atypical patterns (Group B). These were compared according to age, gender, size, histological subtype and association with Hashimoto’s thyroiditis (HT). Shapiro-Wilk, chi-2, Students t tests or Mann-Whitney- Wilcoxon tests were used.

Results: A total of 453 PTC met inclusion criteria. In 51 cases (11.2%) [19 men (38%), median age 41 years (14-68)] an atypical pattern was observed. Median size: 14 mm (5-50 mm), 32 (63%)> 10 mm. 27% were associated with HT. A significant difference was found between Groups A and B in terms of gender (p <0.025), size (p <0.001) and histological subgroup (p <0.01), finding more men, larger lesions and more follicular variant of PTC with atypical pattern. The dominant characteristics observed in Group B were: solid-cystic mixed structure, similar to colloid nodule but without hyperechoic foci 23 (45%), isoechogenicity 19 (37%) and presence of capsule 20 (40%), findings that were shared in the majority of the cases, with or without association to calcifications. In addition, pooled microcalcifications without associated nodule were detected in 6 cases (12%).

Conclusion: One in every 10 PTCs has an atypical ultrasound appearance. It is important to recognize the characteristics described as concerning for malignancy in order to recommend FNAs in a timely manner, since 63% are macrocarcinomas.