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**Does heterogeneous echogenicity of the thyroid parenchyma influence the detection of multifocality and bilaterality for papillary thyroid carcinoma on preoperative ultrasound staging?**

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**PURPOSE:** To evaluate whether if heterogeneous echogenicity of the thyroid parenchyma can influence the diagnostic performances of ultrasonography (US) in detection of multifocality and bilaterality of papillary thyroid carcinoma (PTC).

**MATERIALS AND METHODS:** Between December 2010 and January 2011, 162 patients had preoperative staging US for PTC, and underwent total or near-total thyroidectomy. Seven experienced radiologists performed preoperative US for T and N staging. Underlying parenchymal echogenicity of the thyroid gland, multifocality, and bilaterality of the thyroid nodules were also evaluated. Patients were divided into two groups according to the underlying echogenicity of thyroid parenchyma on US. To evaluate the diagnostic accuracy of preoperative staging US according to the underlying thyroid echogenicity, diagnostic performances including sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and accuracy were calculated and compared among the two groups.

**RESULTS:** Of the 162 patients, underlying echogenicity of thyroid was heterogeneous in 42 patients (25.9%), and homogenous in 120 patients (74.1%). Thirty-eight (23.5%) of the 162 patients had multifocal lesions, and 49 (30.2%, 49 of 162) had bilateral lesions on pathologic examination. The incidence of coexistence of PTC with DTD was 37.7%. Diagnostic performances of preoperative staging US did not show significant differences in detecting multifocality and bilaterality between patients with homogenous and heterogeneous parenchymal echogenicity.

**CONCLUSION:** Heterogeneous echogenicity of underlying thyroid parenchyma does not significantly influence the detection of multifocality and bilaterality for PTC on preoperative US staging.