

ULTRASONOGRAPHIC FEATURES PREDICTING RECURRENT LARYNGEAL NERVE INVOLVEMENT IN THYROID CANCER

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Background/Purpose: The recurrent laryngeal nerve (RLN) is vulnerable to invasion by thyroid cancer due to its anatomical location. The aim of this study was to identify preoperative ultrasonographic (US) features that are able to predict RLN invasion in thyroid cancer patients

Methods: Between May 2009 and April 2011, among 1,636 patients who underwent thyroid cancer surgery, 150 patients with thyroid cancer bound to the thyroid posterior capsule, except the tracheal side, were enrolled. US features associated with the RLN invasion were evaluated by one board-certified radiologist, including tumor margin status, internal echogenicity, relationship between the tumor and posterior capsule, and transverse and longitudinal locations of the tumor.

Results: The rate of RLN invasion was 20% in 150 PTC bound to the posterior capsule and the RLNs were completely enveloped by the tumor in 3 of 150 cases (2.0%). RLN invasion was closely related to US features of PTC; infiltrative tumor margin, internal echogenicity, relationship between the tumor and posterior capsule, and transverse and longitudinal locations of the tumor

Discussion & Conclusion: When PTC is bound to the posterior capsule, the independent factors in predicting RLN invasion are; poorly defined edge, coarse and strong echo, destroyed capsule, and tumor location in the upper one third in the longitudinal view and in medial one half in the transverse view.