

## **SERUM THYROGLOBULIN IMPROVES THE SENSITIVITY OF THE MCGILL THYROID NODULE SCORE FOR WELL-DIFFERENTIATED THYROID CANCER**

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**Background/Purpose:** The McGill Thyroid Nodule Score (MTNS) allows physicians to assess the preoperative risk that a thyroid nodule is malignant. It uses 22 known risk factors for thyroid cancer (radiation exposure, microcalcifications on ultrasound, positive HBME-1 stain on biopsy...etc) and attributes a percentage risk that the nodule is malignant. Recently, preoperative thyroglobulin (Tg) levels has been shown to correlate with the risk of malignancy. The aim of this study was to incorporate Tg levels into the already established MTNS.

**Methods:** This is a retrospective analysis of 1042 consecutive thyroidectomy patients at our center. Patients with preoperative Tg levels were included in the study, and patients with non-well-differentiated carcinoma on final pathology were excluded, yielding a final sample size of 184. MTNS scores were calculated for all patients. Tg levels of 75ng/mL added 1 point to the MTNS, and levels of 187.5ng/mL added 2 points. The new score is named MTNS+.

**Results:** The malignancy rates for scores from 0-1 were <5%, 14.29% for 2-3, 28.95% for 4-6, 32.65% for 7-8, 64.86% for 9-11, 71.43% for 12-14, 78.57% for 15-18, and 92.31% for 19-22, and 100% for 23 and above. Patients with scores >8 had a relative risk of 2.5 (95% CI 1.79-3.49) of malignancy compared to patients with lower scores. MTNS+ showed good specificity at higher scores, with 89%, 96%, and 100% at scores above 11, 14, and 20, respectively. Compared to MTNS, adding Tg levels improved sensitivity by 7.89% at scores >8.

**Discussion & Conclusion:** Adding Tg to the MTNS increases its sensitivity. Moreover, the MTNS+ can accurately stratify the risk of well-differentiated malignancy in patients with thyroid nodules.