The thyroid nodule ultrasonic characteristic referred to as “Taller-than-Wide” (TtW) is defined as a nodule’s anterior-posterior diameter/left-right diameter ratio (i.e., AP/LR ratio) on transverse view. This characteristic is regarded as a major feature suggesting malignancy. On the American College of Radiology’s TIRADS (“Thyroid Imaging Reporting and Data System”) guidelines, TtW status usually indicates the need for an aspiration biopsy (FNA). Given this importance, and the subjective and technical limitations of ultrasonic linear measurements of nodule diameters, it would be prudent to be aware of the probabilities that an AP/LR ratio may be underestimated or overestimated, potentially causing a false-negative or false-positive TtW interpretation, respectively. To assess these probabilities two approaches were taken. Eight observers were trained how to carefully measure the AP and LR diameters of thyroid nodules by ultrasound. The observers measured these diameters on the same transverse image from each of 34 benign thyroid nodules without knowledge of the measurements obtained by other observers. Thus, 272 independently obtained, rank-ordered individual AP/LR ratios (34 nodules x 8 observations each) were plotted on the y-axis against the mean AP/LR for each nodule (34 mean AP/LRs, regarded as the consensus “true” AP/LRs for the corresponding nodule). By Spearman’s rank correlation method, variations in individual AP/LR ratios (i.e., the individual AP/LR ratios minus their corresponding mean AP/LR ratios) were plotted on the x-axis as a function of their rank-ordered fraction of the total population on the y-axis. By this method, the top 20% of individual AP/LR ratios were 0.075 to 0.550 greater than their corresponding mean AP/LRs. The bottom 20% of individual AP/LR ratios were 0.085 to 0.300 lower than their corresponding mean AP/LR ratios. To determine the clinical significance of these variations, the individual AP/LR ratios of the 34 nodules were plotted on the y-axis as a function of their corresponding mean AP/LR ratios. Of the 28 nodules whose mean AP/LR ratios were <1, 31 (13.8%) of the 224 associated individual AP/LR ratios (28 x 8) were read as >1 (False Pos TtW status). Of the 6 nodules whose mean AP/LR ratios were >1, 6 (12.5%) of their 48 individual AP/LR ratios (6 x 8) were read as <1 (False Neg TtW status). In conclusion, although interpretative deviations in the AP/LR ratio are common and frequent, their clinical consequences in terms of generating false positive and false negative attributions of Taller-than-Wide nodular status are fortunately much less frequent (13.8% and 12.5%, respectively). None of the authors have any relevant disclosures.

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