

To the Editor:

I read with interest the review article, “Imaging of Thyroid Nodules,” in the January-February 2019 issue of *Applied Radiology*. I wish to point out what I believe to be two oversights in Table 1. First, the table indicates that “hyperechogenicity” is associated with malignancy; this is likely a typographical error. Rather, both the ACR¹ and Korean-TIRADS^{2,3} indicate that a “markedly hypoechoic” nodule is associated with malignancy. The authors confirm this in both the text and figure 4D. Second, the table indicates that continuous rim calcifications are associated with benignity; this is no longer thought to be correct. Specifically, the ACR-TIRADS¹ considers continuous rim calcifications to be a risk factor for malignancy, and assigns such calcification two points in its scoring system (even greater than for intranodular macrocalcification, which is assigned only one point). Finally, rim calcification that obscures the underlying nodule is now thought to be a risk factor for malignancy, and places such a nodule in the intermediate suspicion category within the Korean-TIRADS paradigm.⁴

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1. Tessler DN, Middleton WD, Grant EG et al. ACR thyroid imaging, reporting and data System (TI-RADS): white paper of the ACR TI-RADS committee. *J Am Coll Radiol*. 2017;154: 587-595.
2. Moon W-J, Baek JH, Jueng SL et al. Ultrasonography and the ultrasound-based management of thyroid nodules: consensus statement and recommendations. *Korean J Radiol*. 2011; 12: 1-14.
3. Shin JH, Baek JH, Chung J et al. Ultrasonography diagnosis and imaging-based management of thyroid nodules: revised Korean society of thyroid radiology consensus statement and recommendations. *Korean J Radiol*. 2016; 17: 370-395.
4. Na DG, Kim DS, Ryoo JW et al. Thyroid nodules with isolated macrocalcification: malignancy risk and diagnostic accuracy of fine needle aspiration and core needle biopsy. *Ultrasonography*. 2016; 35: 212-219.

The corresponding author responds:

We appreciate your comments. As you correctly identified, Table 1 does contain errors regarding nodule echogenicity and rim calcifications. A nodule that is hypoechoic, rather than hyperechoic, is associated with malignancy, which we describe in the body of the article as you aptly noted. In addition, rim calcifications are associated with malignancy rather than benignity. Thank you again for taking the time to read our article and for your comments.

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Editor’s note: The online version of this article has been updated accordingly.

Feature	Associated with benignity	Associated with malignancy
Location – right or left lobe (upper, middle, lower thirds), isthmus	-	-
Size – measured in 3 dimensions	<1 cm	>1 cm
Composition – based on ratio of cystic to solid portion	Cystic, Spongiform	Solid
Solid: no cystic component		
Predominantly solid: ≤50% cystic		
Predominantly cystic: ≤50% solid		
Cystic: no solid portion		
Spongiform: ≥50% multicystic change		
Echogenicity – relative to adjacent thyroid parenchyma and strap musculature	Hyperechoic	Hypoechoic/ Markedly hypoechoic
Hyperechoic: > thyroid parenchyma		
Isoechoic: = thyroid parenchyma		
Hypoechoic: < thyroid parenchyma		
Markedly hypoechoic: < strap muscles		
Margin – border between nodule and uninvolved parenchyma	Smooth	Irregular margins (spiculated, infiltrative, microlobulated)
Well-defined: distinct border		
Smooth		
Irregular margins		
Spiculated/infiltrative		
Microlobulated		
Ill-defined: indistinct border		
Orientation	Parallel	Non-parallel/ Taller-than-wide
Parallel: AP < transverse or longitudinal		
Non-parallel/Taller-than-wide: AP > transverse or longitudinal		
Calcification – present or absent, type of calcification	Colloid crystals	Microcalcifications/ Continuous rim/ Discontinuous rim calcifications with protruding soft tissue component
Microcalcifications: <1 mm		
Macrocalcifications: >1 mm		
Rim calcifications		
*Echogenic reflectors with comet tail artifact: colloid crystals		
Vascularity – present or absent, can be further described as intranodular or peripheral	Absent	Present
Extrathyroidal Extension – extension into adjacent structures or lymph nodes	Absent	Present