

US Lexicon Update: New Descriptors and the Emerging Category of Non-Mass Lesions

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I. Updates to Mass Descriptors

The talk will cover several significant revisions and reintroductions to the terminology used for describing masses in ultrasound.

- **Shape: Lobulated:** This term is being **reintroduced** for the 2025 edition after being removed in 2013. A lobulated mass is generally oval but features indentations that create an undulating contour. While not specific enough to diagnose malignancy or establish benignity on its own, it carries a slightly higher level of suspicion than a purely oval mass.
- **Echo Pattern: Mixed Solid and Cystic:** This term replaces the previous "complex cystic and solid". The change is intended to emphasize that the solid component is the most significant feature of the mass and to avoid confusion with "complicated cysts".
- **Posterior Features: Shadowing:** Terminology has been simplified by removing the "combined" category. In the new lexicon, if any shadowing is present—even behind only a portion of the mass—it supersedes all other posterior features because it is a highly significant finding for malignancy.

II. Calcification Descriptors

Improvements in ultrasound technology now allow for better visualization of calcifications independent of a mass or duct.

- **New Categories:** The lexicon now explicitly distinguishes between macrocalcifications (large enough to cause posterior shadowing) and microcalcifications (tiny echogenic foci, typically without shadowing).
- **Contextual Reporting:** Calcifications are now described as being located within a mass, non-mass lesion, or duct, or located outside of these structures.

III. Associated Features

Two new descriptors for the area surrounding a lesion have been introduced to help differentiate between benign and malignant findings.

- **Echogenic Pseudocapsule:** Defined as a uniformly thin white line surrounding the entire margin of a mass. This is typically associated with benign findings like oval or lobulated masses.
- **Echogenic Rind:** A thick echogenic band surrounding all or part of a lesion. This finding has a high positive predictive value (PPV) for malignancy and should be included when measuring the overall size of the lesion.
- **Vascularity:** Terms have been updated to include "Avascular" and "Peripheral hypervascularity" (formerly 'Vessels in rim').

IV. Emerging Category: Non-Mass Lesions (NML)

A major focus of the talk is the formalization of "Non-Mass Lesions" as a distinct category.

- **Definition:** An NML is a discrete finding that is distinctly different from normal tissue and visible in three dimensions, but lacks the discrete margins and specific shape of

a mass. It is often detected through the disruption of background tissue. The lecture clarifies that heterogeneous breast tissue on its own does not qualify as an NML.

- **Key Descriptors:** NMLs are characterized by their distribution (Regional, Focal, Linear, or Segmental), echo pattern (Hyperechoic, Heterogeneous, or Hypoechoic), and posterior features.
- **Predicting Malignancy:**
 - Segmental Distribution: This is identified as the single most predictive feature of malignancy in non-mass lesions. It is described as a triangular area with its apex toward the nipple.
 - Other Suspicious Findings: Malignancy risk increases with associated calcifications, posterior shadowing, abnormal ductal changes, size greater than 3 cm, and the absence of multiple small cysts.
- **The Importance of Correlation:** For NMLs, the presence of a correlate on other imaging modalities (Mammography, MRI, or Contrast-Enhanced Mammography) is more significant and predictive of malignancy than any individual morphologic feature seen on ultrasound. Furthermore, the probability of malignancy increases significantly if the patient presents with clinical symptoms.