

Non-mass lesions on ultrasonography based on anatomy and histopathologic knowledge

Breast ultrasonography is the cornerstone of a next-generation population-based breast cancer screening program for women with dense breasts because women with dense breasts seem to benefit little from screening mammography alone due to low mammographic sensitivity. Breast ultrasonography should be proposed as a supplemental screening modality for women with dense breasts, especially in Asian countries. However, ultrasonography is highly operator-dependent and thus could lead to many false-positive and false-negative results. Achieving familiarity with breast ultrasonography techniques based on anatomy and histopathologic knowledge will be critical in detecting subtle abnormal lesions such as ductal carcinoma in situ, which usually manifests non-mass lesions.

Contrast-enhanced breast MRI is a powerful and extremely sensitive breast imaging tool; however, its specificity is limited. Suspicious MRI-detected lesions require a biopsy and histological examination to determine the optimal management. Suspicious MRI-detected lesions with non-mass enhancement are frequently undetected on second-look ultrasonography. Even though detected on ultrasonography, MRI-detected lesions can appear so subtle on breast ultrasonography that they tend to be classified as non-mass lesions on ultrasonography. Especially, DCIS is often diagnosed as non-mass enhancement on MRI. Therefore, non-mass findings on breast ultrasonography should be considered analogous to non-mass findings according to the ACR BI-RADS breast MRI lexicon. Wherever possible and appropriate, it is important that we should use standardized terminology to describe non-mass lesions on both breast MRI and ultrasonography equally. As a result, breast ultrasonography community and breast MRI community can promote a mutual understanding about the terminology of non-mass lesions. Therefore, the standardized terminology for describing non-mass lesions detected on breast ultrasonography will be important.

Purpose of this lecture is to provide essential understanding about non-mass lesions on breast ultrasonography based on anatomy and histopathologic knowledge with being conscious of the terminology in breast MRI. After seeing the presentation, you will understand and get interested in the definition of non-mass lesions on breast ultrasonography.