

INTRODUCTION

Ultrasound (US) characterization of mammographic and palpable abnormalities is indicated in the evaluation and management of breast disease. Ultrasound can improve the specificity of mammography in characterizing masses, and US is most often the imaging guide of choice for percutaneous procedures. Referring physicians, other radiologists and patients will benefit from standardization of terms for lesion characterization and reporting. The descriptors comprising a lexicon for breast US are defined and exemplified in the section that follows. The effective use of an US lexicon is predicated on excellent sonographic technique. Crucial to accurate assessment of masses is an understanding of lesion characterization achieved through analysis of multiple features rather than any single one. Some features are unique to US, such as orientation and echogenicity, and some are fundamental to interpreting breast lesions with any imaging technique, such as shape and margins.

The Breast Imaging and Reporting Data System (BI-RADS®) for mammography has improved the assessment of masses and calcifications, and the management recommendations that accompany the final assessments have been incorporated into the federal MQSA (Mammography Quality Standards Act of 1992). The progressive integration of US and mammographic findings improves the assessment and management of abnormalities.

The need for an US lexicon was recognized upon receipt by the American College of Radiology (ACR) of a grant from the Office on Women's Health, Department of Health and Human Services, to support protocol development for research in breast US. An Expert Working Group, with national and international representation,

convened in 1998. Research topics for protocol development included breast cancer screening with US, differentiation of benign from malignant solid masses and the possible therapeutic applications of US, using US itself as an agent as well as a guide for interventions of many different types. The need for consistent and universally understood terminology became acute, particularly in formulating projects studying characterization of solid masses and screening, where criteria for probably benign masses required strict definition.

Using techniques similar to those used for mammography BI-RADS®, agreement on terminology and assessment categorization was reached by consensus of this expert working group and its subcommittee on lexicon development. Proceeding through a number of iterations, the proposed terminology was presented and tested at several meetings, including the Society of Breast Imaging biennial meeting in San Diego in 2001. Statistical (kappa) analysis of interobserver consistency in usage showed good agreement among the participants for both experienced and novice breast imagers for most terms.

Several feature descriptors are frequently used in analyzing mammographic findings, with the most worrisome feature dominant in selecting a final assessment category and recommendation. Similarly, when the mammographic and US reports are combined, the features most associated with malignancy should influence characterization of the lesion. With clear communication and the use of accepted terms, the operator dependence of US, which has limited its usefulness in the past, can now be addressed.

With these aims and considerations, a lexicon of descriptors with attendant assessment

categories has been developed to promote the clinical efficacy of breast US. Wherever possible and appropriate, the descriptive terms in the lexicon for mammography have been utilized for ultrasound interpretation. In the important feature categories of shape and margins, many of the descriptors work equally well for both. In an effort not to confuse the users of this scheme by

using a term twice, *irregular* has been used to describe shape and not margins. This document will change as breast ultrasound evolves further, possibly with expanded applications for adjunctive screening for occult masses in selected patient groups, such as women with dense breasts at high risk for breast cancer.