



EDITORIAL

The never-ending success story of BI-RADS



Any physician who wants to become familiar with the Breast Imaging Reporting and Data system (BI-RADS) will discover more than 1600 papers on Pub Med. What makes another paper about BI-RADS interesting? Hasn't everything already been written about the subject?

The paper published in this issue of *Diagnostic & Interventional Imaging* by Spak et al. [1] summarizes the most recent changes in the fifth and latest edition of the BI-RADS [2]. It represents a quick help in daily practice to keep the radiologist updated on the appropriate use of words and what to include in a clearly written breast imaging report.

BI-RADS had initially been designed by the American College of Radiology to describe all significant breast imaging findings using specifically designed words to avoid wordy and inconclusive reports. The first lexicon dedicated to mammography was published in 1993 [3] in an effort to make clinicians and radiologists understand the language of mammographic findings and their significance. One of the initial criticisms was that the BI-RADS was restricted to morphology alone, which means defining what a lesion looks like, rather than what it represents in terms of pathology. This flaw was quickly overcome by the inclusion of final assessment categories (normal, benign, probably benign, probably malignant, malignant) and appropriate management options such as "short term follow-up" or "biopsy" to allow mammography to become "decision oriented".

Burnside et al. recently summarized the evolution of BI-RADS through subsequent editions [4] and explained that the design of BI-RADS improved expertise because it provided standardized recommendations that could be used for performance tracking. When checking the inclusion of BI-RADS in the material and method section of published papers in breast imaging, one can easily conclude that this item had become mandatory as papers not referring to BI-RADS had little or no chance to get accepted.

The success story of the BI-RADS became evident when ultrasound and magnetic resonance imaging (MRI) were included in the fourth edition after a grant from the Office of Woman's health that allowed the development of a dedicated lexicon for breast ultrasound and breast MRI [5,6]. Moreover, the BI-RADS system was not supposed to be static but tested the reproducibility of terms and their usefulness in characterizing lesions [7]. The latest edition is an example that this goal has been accomplished as several underused terms have been taken off the BI-RADS, thus making the latest edition easier to apply.

The effort to adapt a common language took also place among different breast imaging modalities. Spak et al. mention that the latest BI-RADS edition includes an extended description of lesion localization in the mammography section to make comparison with the MRI localization easier [1]. This edition also took great care to simplify mass description across different imaging modalities and avoid confusion as the language had been simplified and made more consistent between mammography, ultrasound and MRI. The purpose was to reduce differences in wording similar messages among imaging modalities. This can potentially help the radiologist in comparing similar imaging modalities to discriminate benign from malignant lesions or to correlate findings from one imaging modality to another. The Table 1 in Spak et al. paper is an ideal tool in any breast imaging reading room as it gives a quick overview of major changes between the 4th and the 5th edition.

Spak et al. also highlight that new terms have been introduced due to recent published results such as the value of developing mammographic asymmetry, or stiffness descriptors of a mass for elastography in ultrasound and degree of background enhancement in MRI. These additions prove that the BI-RADS is indeed an evolving tool, ready to be adapted to changing practice and taking into account newly available diagnostic tools.

The international success of the BI-RADS started with the French and German translations in 2002 and followed by numerous other translations, including Chinese in 2007. By using clear final recommendation communication with gynecologists, breast surgeons or oncologists has increased in clarity and helped establish the radiologist's role within any multidisciplinary team [8]. Indeed the help of a radiologist increases translational research and goes beyond the standardized communication.

Moreover, the concept of the BI-RADS has largely crossed the boundaries of breast imaging alone. In 2009, the European Society of Urogenital imaging (ESUR) started a working group on a Prostate Imaging Reporting and Data System (PI-RADS). The first version of the PI-RADS guidelines aimed at standardising the acquisition, interpretation and reporting of prostate MRI and was published in 2012 [9], followed by a second version that lead to a similar article than the one published by Spak about the changes in the 5th version [10]. Parallel to the prostate example, the female pelvis-working group within ESUR developed an interpretation system for the characterization of complex adnexal masses called ADNEX scoring system [11]. The score combines perfusion, diffusion and morphological information and is currently tested in a multicentre European prospective study (EURAD study). The purpose of this study is to validating the score and to standardize the MRI report in adnexal lesion characterization pretty much as in the beginning of the BI-RADS story.

In a context of multidisciplinary patient care, there is a crucial need to increase and simplify communication among physicians. The BI-RADS is one of these tools to convey clear messages in breast imaging. The paper by Spak et al. will ease the use of the latest edition and therefore contribute to the never-ending success story of the BIRADS.

Disclosure of interest

The author declares that he has no competing interest.

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