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Uniform Nomenclature to Describe Clinical Features of Pigmented Lesions

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Uniform terminology to describe features of malignancy facilitates communication among physicians and disciplines, enabling any clinician to reconstruct the lesion or mass in their mind simply based on the description. It is time to revisit the plethora of terms describing the clinical features of pigmented lesions. In the beginning of mammography, reports by radiologists lacked uniform, clear language, which is similar to the array of terms used in dermatology to describe pigmented lesions (Figure). Mammography readings varied between physicians and institutions, ultimately diminishing the quality and delivery of patient care. In response, the American College of Radiology (ACR) developed the Breast Imaging Reporting and Data System (BI-RADS) with the hopes of standardizing mammography language and reporting.^{4,5} The Reporting and Data System (RADS) framework was pivotal in the management of breast cancer.⁴ Furthermore, this system has been replicated in the imaging of several organs. Given the maturity of the RADS framework and its proven success, we are proposing a nomenclature system for the visual classification of melanocytic lesions based on the RADS model.

Under BI-RADS, radiologists assess breast lesions using a set of agreed upon clinical descriptors. Patients are then stratified into 1 of 7 possible risk categories that determine the clinical management. This universal framework standardizes the approach to patient care and streamlines clinical decision making.⁵ Furthermore, BI-RADS facilitates communication between physicians. Not only do radiologists use BI-RADS, but surgeons, oncologists, and pathologists also use it.⁴ By eliminating institution or provider-specific terminology, BI-RADS alleviates confusion. Additionally, having a well-defined vocabulary facilitates the education of trainees.⁴

The ACR also uses BI-RADS as a means for quality assessment among radiologists. Accuracy statistics in the BI-RADS system are calculated annually and inform a radiologist

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on their performance compared with benchmark practice standards.⁴ Furthermore, access to objective quality outcomes data encourages radiologists to continuously review and reassess their approach to the diagnosis of breast cancer. Lastly, BI-RADS facilitates epidemiological research through a universal language and standard reporting system.

While dermatology and radiology infrequently overlap, both fields rely on visual diagnosis to identify cancer. Unlike radiology, however, the classification system of melanocytic lesions is immature and less well developed. While the ABCD framework (asymmetrical shape, border, color, and diameter of suspicious lesions) is useful in the assessment of nevi, the words dermatologists use in each category are physician-dependent, nonspecific, and subjective. Variegated, for example, is frequently used to describe pigment distribution. However, the definition of variegated is ambiguous: “marked with patches or spots of different colours; varied in colour; of diverse or various colours; many-coloured, varicoloured.”⁶ This word, among others referenced in the Figure, is not specific nor is it reproducible; it cannot be followed clinically for changes nor can it be used to reliably exchange information between physicians.

The current terminology used by radiologists according to BI-RADS for mammography and ultrasonography, as well as the terminology used in 2 other RADS frameworks (Thyroid Imaging Reporting and Data System [TI-RADS] and Lung Computed Tomography Screening Reporting and Data System [Lung-RADS]), provides a framework for the consideration of uniform terminology to describe the clinical features of pigmented lesions (Figure).¹⁻³ A synopsis of the many vernacular descriptors used by dermatologists serves to illustrate the difficulty others have in understanding dermatologists. The authors’ proposed vocabulary for the description of nevi, developed using the language in RADS as a springboard, with corresponding sample graphic illustrations, is provided.

We believe this universal terminology will provide several advantages to the field of dermatology. One benefit is that a common lexicon will facilitate concise, standardized communication between physicians. For example, if a patient needs to change physicians, there is more utility in knowing that the borders of a lesion are “spiculated,” rather than “irregular,” because “irregular” is a vague term that can have multiple interpretations. Additionally, when a dermatologist’s clinical description of pigmented lesions concerning for melanoma are entered in the electronic medical record (EMR) and reviewed by primary care physicians, having a uniform vocabulary will enable the primary care physician to understand the dermatologist’s physical examination. Providing a more descriptive, illustrative term using standardized vocabulary thereby enhances communication and may improve primary care physician’s descriptions too.

Furthermore, having consistent terminology within the EMR will allow researchers to determine the predictive value of individual criteria and facilitate data collection for research purposes. As described by D’Orsi and Kopans, “...without standardized terms to describe the important features [...] there is no means of training or obtaining objective data to improve our specificity.”⁵(p595) By using an agreed-upon vocabulary, there is potential to study specific features of melanocytic lesions and determine the predictive value of each feature.

As commonly used, the ABCD criteria have a sensitivity and specificity of diagnosis of melanoma of 89.3% and 65.3%, respectively, if 2 criteria are present, and a sensitivity of 65.5% and a specificity of 81.0% if 3 criteria are present.⁷ Perhaps the proposed refined description of clinical features will improve the specificity of a single feature (eg, border). Consistent terminology will support future analysis. With further assessment of each individual characteristic's weight and influence on melanoma risk, the lexicon can be developed into an evidence-based, risk-stratified categorical system based on visual appearance.

Lastly, a consistent vocabulary will facilitate large-scale research because the clinical measures reported in patient charts will be universal among physicians. For example, mammography reports must include specific elements as dictated by the ACR. Therefore, large volume data collection can be performed as the information is indexed in a standardized way. Similarly, if the field of dermatology mandates uniform reporting on clinically suspicious melanocytic lesions, this would facilitate analysis.

RADS is a well-established approach to the visual diagnosis of cancer. Dermatologists may adopt a similar approach to the inspection of nevi. This universal vocabulary and approach has many potential benefits including improved communication between clinicians, improved predictive values of clinical descriptors, and tangible, universal criteria that can be easily searched in medical records to perform clinical research.

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Radiology Descriptor and Corresponding ABCD Rule	BI-RADS Mammography Report ¹	BI-RADS Ultrasonography Report ¹	TI-RADS ²	Lung-RADS ³	Clinical Descriptors of Pigmented Lesions Commonly Used in Dermatology	Proposed Dermatology Terminology	Illustrations of Proposed Dermatology Terminology
Shape, morphology, or asymmetry of shape	Oval, round, irregular	Oval, round, irregular	Wider than tall, taller than wide	Solid, part solid (composed of solid and nonsolid parts), nonsolid (also called "ground glass")	Eclipse, oval, round, starburst, symmetrical, or asymmetrical	Oval, round	Asymmetry or symmetry Symmetrical Oval Round Asymmetrical
Margin or border	Circumscribed, indistinct, microlobulated, obscured, spiculated	Circumscribed or not circumscribed (ie, angular, indistinct, microlobulated, and/or spiculated)	Ill-defined, irregular, lobulated, smooth, with or without extrathyroidal extension	Lobulated, smooth, spiculated	Blurred and/or fuzzy, ill-defined and/or indefinite, irregular, jagged and/or ragged, notched, poorly defined, regular outline, scalloped, sharply circumscribed or well circumscribed, smooth, well demarcated, and/or well defined	Circumscribed or poorly circumscribed (ie, indistinct, lobulated, spiculated)	Border Circumscribed Poorly circumscribed Indistinct Lobulated Spiculated
Composition or symmetry/asymmetry of color distribution	Asymmetry, focal asymmetry, global asymmetry, developing asymmetry	Anechoic, hypoechoic, hyperechoic, complex cystic and solid, heterogeneous	Cystic or almost completely cystic, spongiform, mixed cystic and solid, solid or almost completely solid	Soft tissue, fat, type of calcification, if present	Regular or irregular, symmetric or nonsymmetric, uniform or nonuniform, variegated	Uniform, globally nonuniform or focally nonuniform	Color: pigment symmetry Uniform Globally nonuniform Focally nonuniform
Description of calcification or color	Distribution: diffuse, regional, grouped, linear, and/or segmental Descriptors: amorphous, coarse or "popcornlike," fine pleomorphic, fine linear or linear branching, heterogeneous, large rod-like, milk of calcium, round, rim ^a	Calcifications: in a mass, outside a mass, and/or intraductal calcifications	NA	Central, concentric rings, complete, popcorn	Clustered pigment, cockade, cobblestone, deeply pigmented eclipse, eccentric pigmentation, even pigmentation, fried egg appearance, homogenous, mottled, multiple shades, pebbly, pigment stippling, rosette, speckled, target appearance, variegated and/or variable pigmentation	Hypopigmented and/or hyperpigmented: central, divided, eccentric, peripheral, speckled, variegated	Color: pigment pattern Central Divided Eccentric Peripheral Speckled
Size or diameter	Measure the longest axis and an axis at a right angle from the original measurement	Measure at least 2 dimensions (3 is preferable)	Height: measure parallel to sound beam Width: measure perpendicular	Average diameter of the nodule	NA	Measure the length of the longest diameter and the length perpendicular to that line	Diameter or size Measure the longest axis and the axis at a right angle from the original measurement

Figure. Dermatology Clinical Description of Pigmented Lesion Terminology Comparable to Radiology and Illustrations of Dermatology Terminology

BI-RADS indicates Breast Imaging Reporting and Data System; Lung-RADS, Lung Computed Tomography Screening Reporting and Data System; NA, not applicable; TI-RADS, Thyroid Imaging Reporting and Data System.

^aIn this category the American College of Radiology also includes the following descriptors of calcifications in mammography reports: coarse heterogeneous, skin, vascular, dystrophic, and suture. These were excluded from the current table as they do not translate well to descriptors of melanocytic lesions but are included here for completeness.