Standardization of terminology in dermoscopy/dermatoscopy: Results of the third consensus conference of the International Society of Dermoscopy

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Abstract

Background—Evolving dermoscopic terminology motivated us to initiate a new consensus.

Objective—We sought to establish a dictionary of standardized terms.

Methods—We reviewed the medical literature, conducted a survey, and convened a discussion among experts.

Results—Two competitive terminologies exist, a more metaphoric terminology that includes numerous terms and a descriptive terminology based on 5 basic terms. In a survey among members of the International Society of Dermoscopy (IDS) 23.5% (n = 201) participants preferentially use descriptive terminology, 20.1% (n = 172) use metaphoric terminology, and 484 (56.5%) use both. More participants who had been initially trained by metaphoric terminology prefer using descriptive terminology than vice versa (9.7% vs 2.6%, $P < .001$). Most new terms that were published since the last consensus conference in 2003 were unknown to the majority of the participants. There was uniform consensus that both terminologies are suitable, that metaphoric terms need definitions, that synonyms should be avoided, and that the creation of new metaphoric terms should be discouraged. The expert panel proposed a dictionary of standardized terms taking account of metaphoric and descriptive terms.

Limitations—A consensus seeks a workable compromise but does not guarantee its implementation.

Conclusion—The new consensus provides a revised framework of standardized terms to enhance the consistent use of dermoscopic terminology.

Keywords

Dermoscopy (dermatoscopy) is a widely used noninvasive diagnostic technique. It improves the diagnostic accuracy for pigmented lesions in comparison with examination with the unaided eye.[1–4] Although initially it was mainly used for diagnosis of neoplastic lesions, its indications have recently been expanded to include inflammatory skin diseases[5–7] and hair[8–10] and nail[11–15] diseases. During the last years the vocabulary of dermoscopy has expanded so significantly that it became difficult even for experts to oversee the multitude of terms. The main driving forces for the creation of new terms were the expansion of dermoscopy to new realms and the introduction and dissemination of polarized dermatoscopes that allowed observations of structures previously unseen with nonpolarized dermoscopy.[16–20] As a result, the vocabulary of dermoscopy rapidly proliferated, becoming unwieldly and counterproductive.

The language of dermoscopy is technical because of its specific vocabulary that is incomprehensible outside its context. Many terms are metaphors, such as "starburst" pattern or "leaflike" areas.[21] Although colorful metaphors are memorable, their sheer number and the fact that some are ambiguous, redundant, or just bad analogies make them a potential barrier to learning and research. This was the motivation for creating a descriptive language with a simple and logical structure. The major disadvantage of the descriptive terminology is that complex structures, which can be characterized elegantly in a metaphor, may lead to rather cumbersome and long descriptive expressions.

Because of the pros and cons of metaphoric versus descriptive terminology[22–25] and the appearance of a significant number of new terms we organized a new consensus conference. Our primary aims were to harmonize metaphoric and descriptive terminology, to seek consensus on definitions of terms, and to establish a dictionary of standardized terms.

METHODS

In 2013, the International Skin Imaging Collaboration was established to create a set of standards for skin imaging and to create a public repository of skin images. The 3 breakout International Skin Imaging Collaboration working groups were focused on dermoscopic technology, technique, and terminology. To facilitate annotation and markup of reference images, the terminology working group was charged with developing a dictionary of standardized terms.

In the initial phase of the project, the team leader of the terminology working group (H. K.) selected a group of experts to discuss possible strategies to reach a consensus on terminology standards in dermoscopy. The initial discussions of the expert group centered on the advantages and disadvantages of metaphoric versus descriptive terminology. There was general agreement that a standardized dictionary should include both terminologies. In an initial attempt to develop a list of standardized terms, it became obvious that a significant number of new terms were published since the last consensus conference in 2003. In an effort to list all new relevant metaphoric terms, we performed a literature search.

Identification of new technical terms

We searched the PubMed database to identify articles written in English that were published since the last consensus conference in 2003 using the key words "dermoscopy" or "dermatoscopy." The search identified 2469 publications. Two authors (H. K. and P. T.) screened the abstracts and titles and selected 371 articles for full-text review. In a first round we excluded review articles, articles on trichoscopy, and articles centered on dermoscopy of nails and mucous membranes or the description of inflammatory diseases. After the first full-text review, we identified 113 publications that included 128 new technical terms. In a final round, we excluded terms that are fairly descriptive and terms that could be understood outside the context of dermoscopy (ie, "blood spots"). The final list included 49 new terms that were mainly metaphorical.[26–71]

IDS survey

Of 8562 IDS members who were invited to participate by e-mail, 1093 took the online, anonymous survey. We asked all participants which dermoscopic education they received as trainees (mainly metaphoric, descriptive, or both terminologies) and which terminology they prefer in current practice (mainly metaphoric, mainly descriptive, or both). In the main part of the survey we presented 62 metaphoric terms in random order. We asked the participants whether the term is known to them (possible answers: known, not sure, unknown) and whether they use the term (possible answers: often, occasionally, rarely, never). For 3 terms we included synonyms and asked the participants which of them they prefer. These synonymous terms were (1) "chrysalis,"[71] "chrysalides,"[72] "crystalline,"[73–75] and "shiny white streaks"[19,76–79]; (2) "gyri and sulci,"[28] "brainlike appearance,"[21] "fissures and ridges,"[26] and "cerebriform pattern"[21]; and (3) "hand-glider appearance,"[80] "delta-wing jet,"[81] and "delta-glider aspect."[82]

IDS general meeting and conference for discussion

Before the Fourth World Congress of Dermoscopy in Vienna, the IDS held a general conference for discussion. Three short presentations summarizing background and aims of the consensus conference opened the conference. The presentations were followed by an open discussion among participants. Finally, the chairmen posed 4 questions to the audience who voted by hand: (1) Is there broad consensus that both metaphoric and descriptive terminology are suitable methods for the description of dermoscopic features?; (2) Is there broad consensus that metaphoric terms should have a definition?; (3) Is there broad consensus that if new dermoscopic criteria are described, existing metaphoric terms or descriptive terms should be used preferentially instead of inventing new terms (if possible)?; and (4) Is there broad consensus that the number of metaphoric terms should be reduced and synonyms should be replaced by the most popular or the most appropriate term?

Statistical analysis

All continuous data are given as mean and the SD unless otherwise specified. We used t tests for the comparison of continuous data and χ^2 tests for the comparison of proportions. A P value less than .05 indicates statistical significance. We used R[83] for all statistical analyses. Figures were created using the package ggplot.[84]

RESULTS

Preliminary discussion among experts and PubMed search

In a preliminary discussion among the members of the expert group there was general agreement that it would be desirable to harmonize metaphoric and descriptive terminologies and to establish a dictionary of standardized terms but there was considerable disagreement about which terms should be included. To solve this issue the panel decided to perform a PubMed search to get an overview on the technical terms that were published since 2003 and to test their practical relevance in a survey among IDS members.

Survey among IDS members

Of 1093 participants from 84 different countries, 855 (78.2%) responded to the question about the type of education they received. The majority (64.7%, n = 553) received a balanced training including metaphoric and descriptive terminology. Significantly more participants were trained preferentially in metaphoric (21.8%, n = 186) than in descriptive (13.6%, n = 116, $P < .001$) terminology. With regard to use, 484 (56.5%) participants reported using both terminologies, 172 (20.1%) prefer metaphoric, and 201 (23.5%) descriptive terminology. Type of training and use in current practice varied according to country (Fig 1). More participants trained in metaphoric terminology preferred descriptive terminology than vice versa (9.7% vs 2.6%, $P < .001$). Responders who preferred descriptive terminology used dermoscopy for a shorter period of time than participants who preferred metaphoric terminology or both (7.00 ± 6.25 vs 8.90 ± 5.48 years, $P = .008$).

Of 1093 participants, 329 (30.1%) responded to all questions regarding knowledge and use of specific terms. The 49 terms that were published after 2003 were known only by a minority of respondents (Fig 2). Of all 62 terms the 3 most well-known terms were "blue-whitish veil" (96.2%), "milia-like cysts" (96.2%), and "comedo-like openings" (95.5% of respondents). The 3 most well-known terms from the 49 newer terms were "moth-eaten border" (86.7%), "strawberry pattern" (68.3%), and "fat fingers" (67.5% of respondents).

When asked about synonyms, the respondents preferred "shiny white streaks" (41.7%) to "chrysalis" (20.9%), "chrysalides" (19.9%), or "crystalline" (7.9%). For scabies, there was a preference for "delta-wing jet appearance" (46.0%) versus "handglider appearance" (7.7%) and "delta-glider aspect" (7.7%); of note, all three terms were known only to a minority of respondents, and a significant proportion preferred to use none of these terms (38.7%). For seborrheic keratoses the respondents preferred "cerebriform pattern" (54.0%) over "brainlike appearance" (15.1%) to describe the pattern and "fissures and ridges" (16.5%) over "gyri and sulci" (8.4%) to describe the structural components of the pattern.

Discussion at the IDS conference

All members of the expert group attended the general meeting during the IDS World Congress to which all IDS members were invited. As indicated by hand vote at the end of the session, there was broad consensus that: (1) metaphoric and descriptive terminology are both suitable methods for the description of dermoscopic features; (2) metaphoric terms should have a definition; (3) if new dermoscopic criteria are described, existing metaphoric terms or descriptive terms should be used preferentially instead of inventing new terms (if possible); and (4) the number of metaphoric terms should be reduced and synonyms should be replaced by the most popular or the most appropriate term.

Dictionary of standardized terms

Guided by the results of the IDS survey and the session for discussion at the IDS Congress, the expert panel agreed on a standardized dictionary of dermoscopic terms. In Table I, suitable terms are described in descriptive and metaphoric terminology. The definitions of metaphoric terms are described in Table II. The suitable terms for vascular structures[27,85–97] with their definitions are described in Table III.

DISCUSSION

The expansion of the vocabulary during recent years and the controversy between metaphoric and descriptive terminology created a demand for a new consensus on dermoscopic terminology. In a representative survey among members of the IDS we demonstrated that most members are not familiar with, nor use, most new terms. Of the 49 terms that were published after 2003 only 4 terms were known to more than 50% of the participants. One of these term is "strawberry pattern," which is a good example of a metaphoric term that sticks in the memory because it is a good metaphor for a complex feature, has been well defined, represents a useful diagnostic clue (for actinic keratosis) (Fig 3, *A*), and has been propagated by an eminent figure in dermoscopy based on a large study.[27] It fulfills important criteria for stickiness: adequacy, significance, and privileged dissemination. Many less familiar terms are bad metaphors and ill-defined with dubious diagnostic significance that have been published in case reports.

Although it is true that the year of publication has an impact on familiarity it is also true that terms that fulfill criteria for stickiness are better known than terms that do not. For example the term "zig-zag pattern"[36] (similar to "polygons"[98] or "angulated lines"[99]) that has been introduced to describe a specific clue to lentigo maligna is relatively new but relatively high up on the familiarity level when compared with other terms published in the same year. Familiarity and usage in the community are important measures of the practical utility and we used them as objective criteria for inclusion in the standardized dictionary. In general, a term had to be known and used by more than 30% of participants to be a potential candidate. The expert panel also considered other important decisive factors such as adequacy, reproducibility, significance, and lack of redundancy. With regard to significance it is important to note that we included terms even if they are not highly specific, such as "rosettes"[73,100–103] or "rainbow pattern,"[33,104–106] because they describe common features or patterns. Notably, terms that have not been included in the dictionary may still be useful. It is possible that a new term that has not yet achieved wide use will get increased attention in the future. Dermoscopic terminology is a living language and the given dictionary will be reviewed every 5 years and adapted if necessary. It is also important to note that some useful terms such as "ulceration" are not included in the dictionary because they are easily understood outside the context of dermoscopy.

We also tried to solve the problem of redundancy. If obvious synonyms existed we included the term that was preferred by the survey participants. There are, however, terms that describe similar criteria but, strictly speaking, are not synonyms. They rather constitute a family of terms with similar meanings. An example would be the family "rhomboids," "polygons," "angulated lines," and "zig-zag pattern." "Rhomboids" was introduced years ago[107] to describe the angulated pigmented lines around follicular openings in lentigo maligna (the new term "zig-zag" pattern[36] can be regarded as a variant of rhomboids on facial skin). "Angulated lines"[99] and "polygons"[98] and have been introduced recently to characterize pigmented lines that form angles in flat melanomas on nonfacial, sun-damaged skin (Fig 3, *B*). Although we acknowledge that the 4 terms describe similar structures we separated "rhomboids" and "zig-zag pattern" from the other 2 because "rhomboids" and "zig-zag pattern" are reserved for facial skin and the others are used for nonfacial skin.

The second development that demanded a new consensus was the controversy between metaphoric and descriptive terminology.[25] The descriptive terminology is confined to 5 basic elements: "lines," "dots," "clods," "circles," and "pseudopods." If any of these basic elements is missing, the term "structureless" can be applied. With the addition of color and, if necessary, spatial arrangement, these 5 building blocks are sufficient to describe even complex dermoscopic structures. As indicated in Table I all metaphoric terms can be translated into descriptive terminology. It is important to note that the descriptive terms on the left are not the definitions of the metaphoric terms on the right. The descriptive terms in the left column are used by those who prefer descriptive terminology over the metaphoric terms on the right. The definitions of the metaphoric terms are given in Table II. Purely descriptive terms are not included in Table II because they do not need a definition beyond the definition of the basic elements. It is one of the major advantages of the descriptive terminology that it is based on only 5 basic elements that, like letters of the alphabet, are the building blocks of any new term. This structure regulates the creation of new terms. Because of its simplicity and logic the descriptive terminology has become very popular (Fig 1). According to our survey 23.5% preferably use descriptive terminology whereas 20.1% prefer metaphoric terminology. Most participants, however, use both terminologies, which underlines the importance of harmonizing them. In general, more participants received training in metaphoric terminology than in descriptive terminology. This is expected because the descriptive terminology is relatively new and most teachers grew up with metaphoric terminology. In this regard it is important that more participants trained in metaphoric terminology preferable use descriptive terminology than vice versa. We think that teachers of dermoscopy should be familiar with both languages and should ideally be able to teach both terminologies.

The current consensus provides a framework for all issues related to dermoscopic terminology and is intended to serve as a guideline for students, teachers, and researchers. We are aware of the limitations of this endeavor. A consensus seeks a workable compromise but does not guarantee its implementation. We also acknowledge that the consensus we found does not include all fields of dermoscopy. We did not include nails, mucosa, and trichoscopy, which have their own vocabulary.

Finally, we found no consensus with regard to the name of the technique itself. "Dermoscopy" is short and popular, whereas "dermatoscopy" is traditional and rooted in history and language.[108] As in any scientific field there are traditional and innovative streams in dermoscopy/dermatoscopy and the constructive dialogue between both groups has enriched our discipline. In this spirit and in the spirit of the broad consensus reached with this work we consider both terms appropriate.

Acknowledgments

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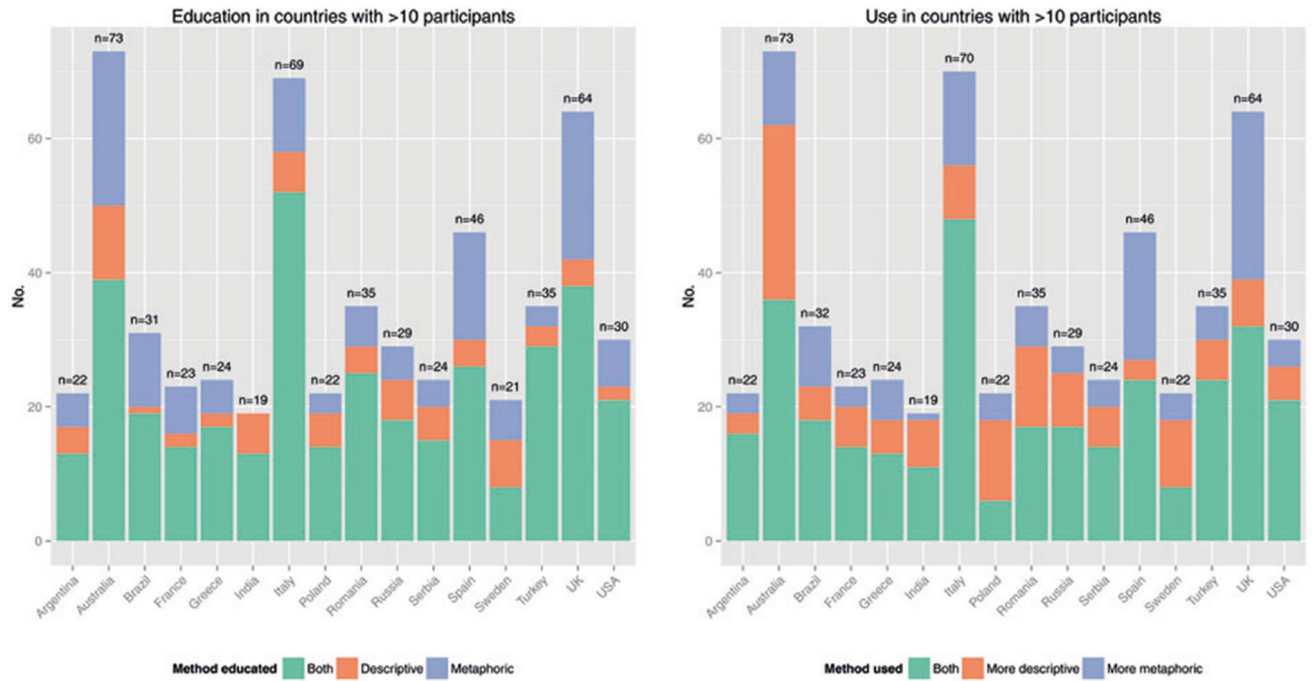
Fig 1.
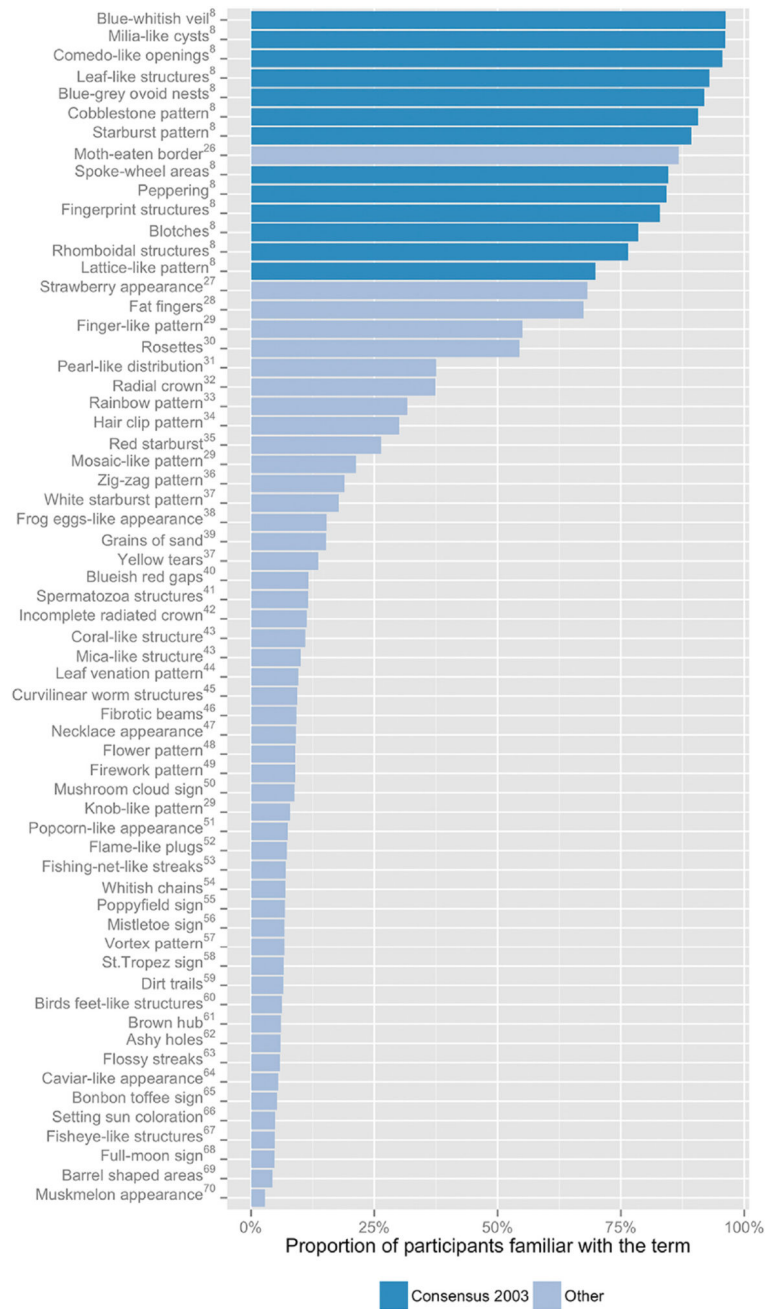Education and current use of dermoscopic terminology in countries with more than 10 respondents.

Fig 2.
List of terms included in the survey and proportions of respondents knowing the term.
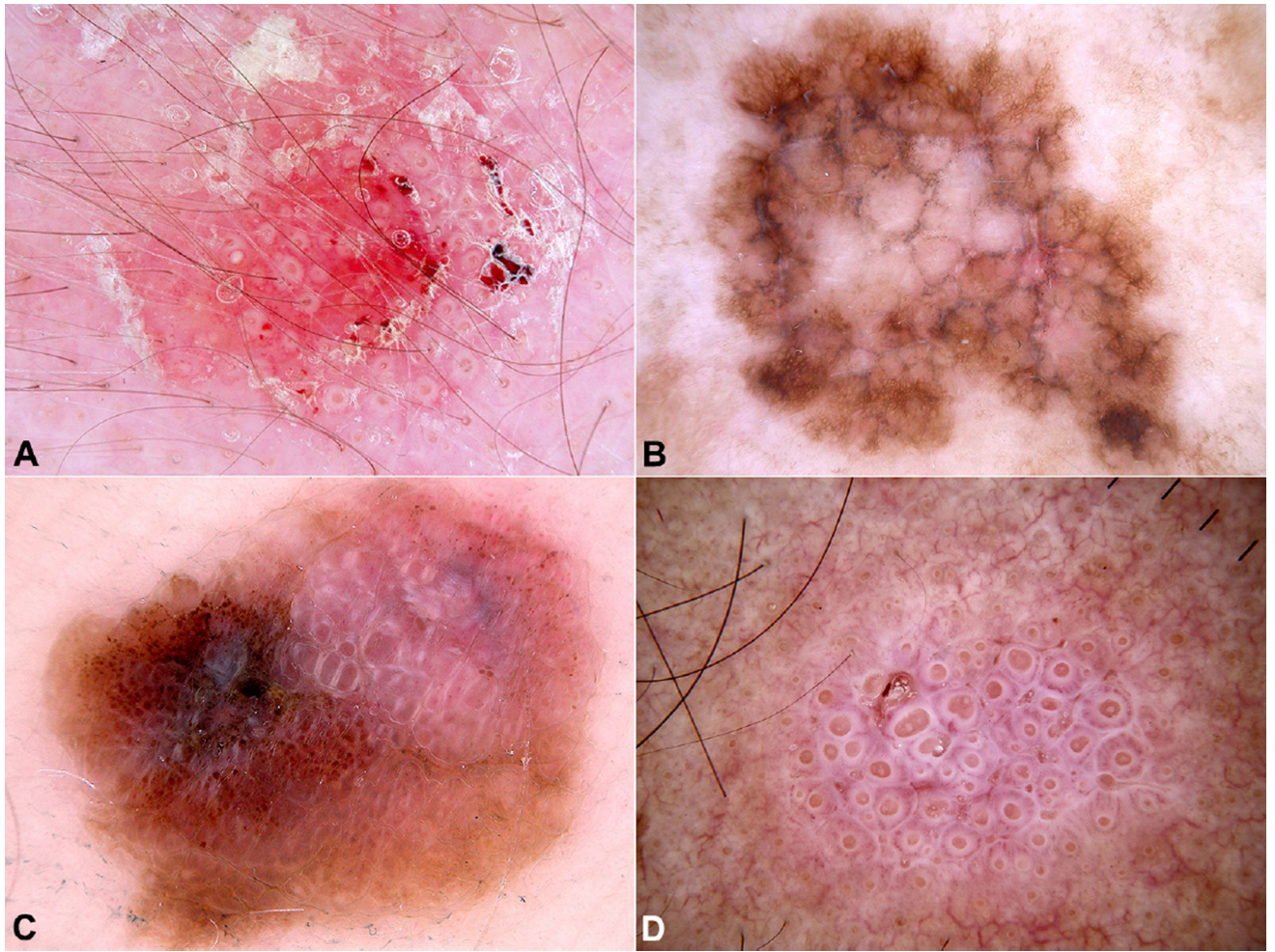
Fig 3.
Important new patterns and clues published since the last consensus conference **A**, Structureless red background interrupted by prominent follicular openings ("strawberry pattern") in a facial actinic keratosis. **B**, Angulated lines ("polygones") in flat lentiginous melanoma on nonfacial skin. **C**, Perpendicular white lines ("shiny white lines" or "shiny white streaks" formerly also known as "chrysalis") in the right upper part of an invasive melanoma. **D**, "White circles" in a squamous cell carcinoma (image courtesy of Cliff Rosendahl).

Table I

Dictionary of suitable terms in descriptive terminology and corresponding metaphoric terminology

Descriptive terminology	Metaphoric terminology	Significance[*]
Lines		
Lines, reticular	Pigment network	Melanocytic lesions, dermatofibroma, solar lentigo
Lines, reticular and thick	Broadened network	Melanoma
Lines, reticular and thin	Delicate network	Melanocytic nevi
Lines, reticular and thick or reticular lines that vary in color	Atypical pigment network	Melanoma
Lines, reticular, white		Melanoma, Spitz nevus, dermatofibroma
Lines, reticular, hypopigmented, around brown clods	Negative pigment network (former synonyms: inverse network, reticular depigmentation)	Melanoma, Spitz nevus
Lines, white, perpendiculary[†]	Shiny white streaks (former synonyms: chrysalis, chrysalids, crystalline)	Melanoma, BCC, Spitz nevus, dermatofibroma
Lines, branched	Branched streaks	Melanocytic lesion
Lines, radial (always at periphery)	Streaks	Reed nevus, melanoma, recurrent nevus
Lines, radial and segmental	Radial streaming	Melanoma, recurrent nevi
Lines, radial, connected to a common base	Leaflike areas (sometimes variously shaped large clods have also been termed leaflike areas)	BCC
Lines, radial, converging to a central dot or clod	Spoke wheel area (sometimes a clod within a clod has also been termed spoke-wheel area/concentric structure)	BCC
Lines, curved and thick	Cerebriform pattern (former synonyms: brainlike appearance) to describe the pattern and fissures and ridges (former synonyms gyry and sulci and fat fingers) to describe the structural components of the pattern	SK
Lines, brown, curved, parallel, thin	Fingerprinting	Solar lentigo
Lines, curved and thick, in combination with clods	Crypts	SK
Lines, parallel, short, crossing ridges (volar skin)	Fibrillar pattern	Acral nevi
Lines, parallel, thick, on the ridges (volar skin)	Parallel ridge pattern	Acral melanoma
Lines, parallel, thin, in the furrows and crossing the ridges (volar skin)	Latticelike pattern	Acral nevi
Lines, parallel, thin, in the furrows (volar skin)	Parallel furrows pattern	Acral nevi
Lines, angulated or polygonal (facial skin)	Rhomboids/zig-zag pattern	Lentigo maligna
Lines, angulated or polygonal (nonfacial skin)	Angulated lines/polygons	Lentiginous melanomas (nonfacial, nonacral)
Clods		
Clods, small, round or oval	Globules	Various diagnoses
Clods, brown, circumferential	Rim of brown globules	Growing nevi
Clods, brown, yellow, or orange (rarely black)	Comedo-like openings	SK
Clods, brown or blue, concentric (clod within a clod)	Concentric globules	BCC
Clods, brown or skin colored, large and polygonal	Cobblestone pattern	Dermal nevi
Clods, blue, large, clustered	Blue-gray ovoid nests	BCC

Descriptive terminology	Metaphoric terminology	Significance[*]
Clods, blue, small	Blue globules	BCC
Clod within a clod (concentric clods)	Variant of spoke wheel area	BCC
Clods, white, shiny [†]	Shiny white blotches and strands	BCC
Clods, pink and small	Milky-red globules	Melanoma
Clods, red or purple	Red lacunes	Hemangioma
Dots[‡]		
Dots, any color	Granularity or granules	Various diagnoses
Dots, gray	Peppering	Melanoma, LPLK
Dots, gray and circles, gray	Annular-granular pattern	Lentigo maligna
Dots or clods, white, clustered or disseminated	Milia-like cysts, cloudy or starry	SK
Dots, white, four arranged in a square [†]	Rosettes	Various diagnoses but mainly AK, SCC, actinic-damaged skin
Dots, peripheral, arranged in lines	Linear dots	Pigmented Bowen disease
Dots, brown, central (in the center of hypopigmented spaces between reticular lines)	Targetoid dots	Congenital nevi
Circles		
Circles, white		SCC
Circles, concentric	Circle within a circle	Lentigo maligna
Circles, incomplete	Asymmetric pigmented follicular openings	Lentigo maligna
Pseudopods		
Pseudopods, circumferential or lines, radial, circumferential	Starburst pattern	Reed nevus
Structureless		
Structureless zone, brown or black	Blotch	If centric hypermelanotic Clark (dysplastic) nevus, if eccentric melanoma
Structureless zone, blue	Blue-whitish veil	Melanoma
Structureless zone, pink	Milky-red areas	Melanoma
Structureless zone, white	Scarlike depigmentation	Melanoma
Structureless zone, white, central	Central white patch	Dermatofibroma
Structureless zone, polychromatic	Rainbow pattern	Various diagnoses
Structureless, red, interrupted by follicular openings	Strawberry pattern	AK
Structureless, brown (tan), eccentric		Melanoma
Structureless, any color	Homogenous pattern	Various diagnoses
Structureless, brown, interrupted by follicular openings (facial skin)	Pseudonetwork	Facial pigmented lesions
Else		
Sharply demarcated, scalloped border	Moth-eaten border	Solar lentigo

AK, Actinic keratosis; *BCC*, basal cell carcinoma; *LPLK*, lichen planus–like keratosis; *SCC*, squamous cell carcinoma; *SK*, seborrheic keratosis.

[*] Varies depending on context.

[†] Only visible by polarized dermoscopy.

[‡] Dots and clods can be best differentiated if they appear as a pattern. Multiple dots have the same size and shape (they are all small and round), multiple clods vary in size and shape. In general dots are not larger than the diameter of a terminal hair.

Table II

Definitions of metaphoric terms

Metaphoric term	Definition
Pigment network	Gridlike pattern consisting of interconnecting pigmented lines surrounding hypopigmented holes
Typical pigment network	Network with minimal variability in the color, thickness, and spacing of the lines; symmetrically distributed
Delicate network	Light-brown, thin network lines
Atypical pigment network	Network with increased variability in the color, thickness, and spacing of the lines of the network; asymmetrically distributed; gray color
Broadened network	Widening of the network lines
Negative network	Serpiginous interconnecting broadened hypopigmented lines that surround elongated and curvilinear globules
Shiny white structures	
Shiny white streaks	Short discrete white lines oriented parallel and orthogonal (perpendicular) to each other seen only under polarized dermoscopy
Shiny white blotches and strands	White structures in the form of circles, oval structures, or large structureless areas that are bright-white longer and less well-defined lines oriented parallel or distributed haphazardly, or forming blotches (shiny white clods); seen only under polarized dermoscopy
Rosettes	Four bright white dots or clods arranged together as a square (or a 4-leaf clover)
Globules	
Regular	Globules with minimal variability in their color, size, and shape
Cobblestones	Polygonal globules symmetrically distributed throughout lesion
Rim of brown globules	Globules distributed at the periphery of lesion
Irregular	Globules with variability in color, size, shape, or spacing and distributed in an asymmetric fashion
Dots	
Regular	Dots clustered at the center of the lesion, or located on the network lines (also called target network)
Irregular	Any distribution of dots other than dots as described for regular dots
Streaks	
Radial streaming	Radial linear extensions at the lesion edge
Pseudopods	Bulbous and often kinked projections seen at the lesion edge, either directly associated with a network or solid tumor border
Branched streaks	Broadened or widened network with broken lines and incomplete connections
Patterns	
Starburst pattern	This pattern consists of peripheral globules, pseudopods, or streaks (or a combination of them), located around the entire perimeter of the lesion
Homogeneous pattern	A pattern lacking any definable pigment structures, structureless pattern
Cerebriform pattern	Thick curved lines created by gyri and keratin-filled sulci; these gyri and sulci coalesce forming a brainlike appearance pattern
Fingerprint pattern	Light-brown thin curved lines that do not interconnect to form a network; these tend to be linear to curvilinear; they correspond to small and thin gyri
Rainbow pattern	Circumscribed structureless areas displaying colors of the whole spectrum of visible light
Strawberry pattern	Reddish pseudonetwork (erythema and wavy fine vessels) around hair follicle openings that are accentuated with a white halo appearance
Blotch	Dark structureless areas
Regular	One blotch within center of lesion and surrounded by network
Irregular	More than one blotch or a blotch that is located off center
Regression structures	

Metaphoric term	Definition
Peppering/granularity	Consists of fine dots with a blue-gray color
Scarlike depigmentation	Area of white that is whiter than surrounding normal-appearing skin (true scarring); it should not be confused with hypopigmentation or depigmentation caused by simple loss of melanin; shiny white structures and blood vessels are not seen in areas of regression
Blue whitish veil	An irregular shaped blotch of blue hue with an overlying whitish ground-glass haze
Angulated lines (polygons, zig-zag pattern)	Gray-brown lines that are connected at an angle or coalescing to form polygons
Central white patch	Central white structureless area
Leaflike areas	Brown to gray/blue discrete linear or bulbous structures coalescing at a common off-center base creating structures that resemble a leaflike pattern
Spoke wheel area	Well-circumscribed radial projections, usually light brown but sometimes blue or gray in color meeting at a central darker clod that has a dark brown, black, or blue color
Blue gray ovoid nest	Well-circumscribed ovoid structures with confluent or near confluent blue-gray pigmentation
Milia-like cyst (cloudy or starry)	White to yellowish round opalescent structures corresponding to intraepidermal cysts; when they are small and bright they are called starry; when they are larger and less bright they are called cloudy
Comedo-like opening	Round to oval keratin-filled clefts
Crypts	Keratin-filled invaginations that are larger than comedo-like openings
Moth-eaten border	Border with concave or sharp punched-out invaginations
Milky-red areas	Milky-white appearance or pinkish structureless areas (strawberry and ice cream–like), consisting a red vascular blush with no specific distinguishable vessels
Facial skin	
Annular granular pattern	Dots and structureless areas arranged around follicle openings (and involving adnexal opening)
Rhomboids	Gray-brown angulated lines forming a polygonal shape around adnexal ostial openings
Pseudonetwork	A structureless pigment area interrupted by nonpigmented adnexal openings
Asymmetric pigmented follicular openings	Pigment associated with adnexal opening that does not uniformly surround the entire opening or curved (or crescent-shaped) pigment lines partially surrounding adnexal openings
Volar skin	
Parallel furrow pattern	Volar pigmentation forming solid or dotted lines, parallel, thin, on the furrows (sulci superficiales or invaginations in dermatoglyphics); the lines are occasionally doubled, each line is beside the furrows
Parallel ridge pattern	Volar pigmentation forming lines, parallel, diffuse, and irregular, along the ridges or cristae superficiales (raised portion of the dermatoglyphics)
Latticelike pattern	Volar pigmentation forming thin lines, parallel on the furrow or sulci superficialis (invaginations in dermatoglyphics) and crossing perpendicular on the ridges
Fibrillar pattern	Linear pigmented filamentous lines of similar length with one end at the furrows and oriented at a certain angle to the furrows and crossing the ridges

Table III

Suitable terms for vessel morphology and arrangement with definitions and significance

Descriptive term	Metaphoric term	Definition	Significance[*]
Vessel morphology			
Dots		Tiny pinpoint vessels	Flat melanocytic lesions, inflammatory diseases, Bowen disease
Clods	Red-purple lacunes	More or less sharply demarcated, roundish, or oval areas with a reddish, red-bluish, maroon, or dark-red to black coloration, separated from each other by intervening stroma, without vessels inside the lacunae	Hemangioma
Linear		Linear, mildly curved vessels, considered irregular when different sizes, shapes, and curves with a haphazard, or random, distribution are presented and considered regular when short and fine (thin) linear vessels prevail	Various diagnoses
Coiled	Glomerular	Tightly coiled vessels resembling the glomerular apparatus of the kidney	Bowen disease
Looped	Hairpin	Two parallel linear vessels forming a half looped or hairpin-like structure	Seborrheic keratosis, viral warts
Serpentine	Linear irregular	Linear vessels with multiple bends	Flat BCC, melanoma
Helical	Corkscrew	Twisted looped vessels with bends twisted along a central axis	Melanoma, metastasis
Curved	Comma	Linear, curved, short vessels	Dermal nevi
Monomorphous		One type of vessel dominates	Various diagnoses
Polymorphous		Multiple types of vessels are present	May indicate malignancy in appropriate context, for example in flat melanocytic lesions
Vessel arrangement			
Radial	Crown vessels	Radial, serpentine, or arborizing vessels at the periphery of the lesion that radiate toward the center but do not cross the midline of the lesion	Sebaceous hyperplasia
Serpiginous	String of pearls	Coiled or dotted vessels arranged in lines	Clear cell acanthoma
Branched	Arborizing vessels	Bright-red, sharply in focus, large or thick-diameter vessels dividing into smaller vessels	BCC
Clustered		Coiled or glomerular vessels arranged in groups	Bowen disease
Centered dots	Targetoid vessels	Red dots (vessels) in the center of hypopigmented space between reticular lines	Congenital melanocytic nevus

BCC, Basal cell carcinoma.

[*] Significance of vascular structures depends on the context and is generally weaker than for pigmented structures.