Dermatology Practical & Conceptual

Dermoscopy for Cutaneous Melanoma: Under the Eye of Both the Dermatologist and the Legal Doctor

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Worldwide, melanoma is the 20th most common cancer, with 287,723 estimated new cases (1.6% of all cancers) and 60,712 related deaths (0.6% of all cancer deaths) in 2018, and a five-year prevalence of 965,623 cases [1]. Cutaneous melanoma (CM) is by far the most common melanoma subtype and a potentially fatal disease. Early recognition is of utmost importance to improve the prognosis, since if melanoma is diagnosed at noninvasive stage, the patient will be treated by excision of the primary tumor, but if melanoma becomes invasive, the chance of recovery decreases as invasion thickness increases [2]. Given its dramatic rise in incidence, its predilection for middle-aged patients, and its ability to masquerade as a benign lesion, melanoma is easily misdiagnosed, providing a basis for malpractice claims [3,4].

Dermatoscopy, commonly referred as dermoscopy, is a noninvasive technique allowing microscopic visualization of subsurface skin structure not visible to the naked eye [5]. A trained user, through a hand-held microscope, equipped with a magnification lens and a light source (the dermatoscope), can appreciate the deeper primary morphology of cutaneous lesions beyond the gross morphologic features, such as size, shape, colors, contours, and topography. This approach improves the diagnostic accuracy for melanoma [6] and the observers confidence in their clinical diagnosis [7].

Unfortunately, even with dermoscopy, some melanomas remain clinically and dermoscopically indistinguishable from other lesions, such as seborrheic keratoses, whose suggestive features might be displayed in up to 18% of melanomas, vascular lesions and pyogenic granulomas, lichen planus-like keratoses, warts, dermatofibromas, ulcers and, finally, from melanocytic nevi, hence difficult to diagnose [8-16]. This is particularly true in patients with atypical mole syndrome, whose nevi share clinically some, or all, the features of CM (the ABCDs: asymmetry, border, irregularity, color variability, and diameter > 6 mm).

A strategy involves the dermoscopic follow-up of atypical lesions, through sequential digital dermatoscopy imaging, and excision only of those lesions that change over time [17].

The introduction of digital dermatoscopes or so-called videodermatoscopes (VDS), the sequential digital dermatoscopy imaging (SSDI) and total body photography (TBP) are further options in the general digital progress within medicine and dermatology. These systems are equipped with high-resolution color video cameras that reveal monitor images obtained using non-polarized or polarized light. They achieve higher magnifications than most common hand-held dermatoscopes and simplify image acquisition, storage, organization, analysis, and retrieval. These techniques are appreciated and requested by the patients who, however, might do not fully understand the rational of the methods , often believing their nevi are being monitored because at risk of malignant evolution, especially the atypical ones [18]. Indeed, the actual risk of any given nevus of transforming into a melanoma has been estimated to be low, whereas the majority of melanomas appear to arise de novo [19], and "atypical" nevi are at no higher risk of developing into a melanoma; rather, the "atypical" nevus is more likely to actually be a melanoma whose dermoscopic features may not differ significantly at baseline from nevi [15].

A discrepancy between patients and physician' expectations towards VDS and TBP might be even at the base of the doctor-patient relationship, and this is not without danger. The availability of monitoring during follow-up changes the clinician threshold for biopsy suspicious pigmented lesions, resulting in a fall in the sensitivity for melanoma at the first examination, to increase the specificity and the accuracy for melanoma detection at the next evaluation. There are 2 main approaches: short-term follow-up (3 months) is used to make a clinical decision about single, flat or slightly raised suspicious melanocytic lesion, lacking dermoscopic features of melanoma; while medium or long-term monitoring, generally restricted to patients with multiple nevi, mainly aims at comparison of multiple inconspicuous lesions over standard surveillance periods (usually 6 or 12 months) [20].

To work properly, this method of follow-up needs patients' compliance with follow-up timing. Unfortunately, it has been proven that patients compliance strongly decreases with long-term control visits, with the risk of melanoma un-treatment [21–23], and we cannot exclude this is due to a misunderstanding and miscommunication between patient and physician about how the method works.

Moreover, the depth of invasion is the most critical prognostic factor of malignant melanoma, but dermoscopic findings do not allow a reliable evaluation of the tumor thickness, nor a sure distinction between an in situ and an early invasive phase [24-26] and, consequently, diagnosis remains only histopathological. The question is of more than academic interest because melanoma is a completely curable disease if diagnosed early, while still in situ. Once it becomes invasive, the diagnosis becomes easier but the best chance for recovery has been lost. It has been widely proven that sequential dermoscopy imaging detects mostly thin incipient melanomas [15,27,28] and patients with these lesions are generally considered to be at low risk for metastasis and melanoma-related death, but it is well known that a portion of this group will eventually experience disease recurrence and risk death from melanoma [29–32]. One can wonder if, comprehensively informed, a patient would rather opt for immediate surgical removal, sacrificing specificity over sensitivity. On the other hand, removal of all unusual-appearing nevi, especially in patients with multiple atypical nevi, is usually impractical.

The use of TBP might further facilitate the detection of new lesions, as well as visual changes in pre-existing lesions, by providing a comparative reference point of areas of skin for subsequent examinations [33].

During a dermoscopic and clinical visit, we might be tempted to feel that our conversation with a patient sufficiently ensures that the patient has freely and knowingly accepted the procedure. However, while dialogue is necessary, it is not sufficient for legally documenting informed consent, given that in some countries, Italy and Spain for example, the law stipulates that consent must be given by traceable means, such as in writing [34,35]. The informed consent doctrine has, in fact, three goals: (1) to include patients in the decision-making process; (2) to involve the patient in the choices that affect the psycho-physical aspect; and (3) to ensure the patient is aware of the potential benefits and hazards of the treatment [36].

In dermoscopy context, compared with the issue of patient's follow-up in medicine as a whole, for the several aforementioned issues and regarding especially the third point, proper documentation of the care planning, with information about prognosis, follow-up, and therapeutic approaches, to which the patient consents, is fundamental in the reduction of litigation related to melanoma misdiagnosis, usually seen as diagnostic delay and illicit reduction of survival and/or quality of life. In medicolegal cases, a physician note may provide additional evidence that the physician met the applicable standard of care, while inadequate documentation may reduce the likelihood of a successful defense [3].

Of great interest, a recent pronunciation of the II Civil Section of the Genua Tribunal (n. 939/2017) discusses two of the main issue on diagnostic delay for melanoma: at first, the importance of written health records, to identify the followed diagnostic procedure and the proper information; secondly, the need of standard formation of dermatologist about dermoscopy, to avoid, in cases of doubtful lesions, "that there was not even observation with a dermatoscope" [37]. In addition to documentation, photography becomes more widespread in both general dermatological setting, and in dermoscopy, because specific part of the method;

photography, in fact, may directly impact patient care by allowing the clinician to detect changes in pigmented lesions. A proper patient's disclosure over picture management must also be added in the medical records [38,39].

Hence, video-dermoscopy and sequential dermoscopy imaging, with their particular characteristics, might need a deep information and appropriate signed written consent [36].

At least in Italy, in litigations and trials regarding diagnostic delays of melanomas, the study of Lin et al is used to estimate the impact on the prognosis: in our opinion the article has to be considered with extreme caution, because only the rate of growth of the lesion, from a histopathological point of view, is investigated, so it is improper to directly convert this data into patients' prognosis [40]. Consequently, dermatologists and hospitals might face medicolegal concerns for some months delay, even in case of small and likely in situ melanomas, if not properly diagnosed and followed [41]. Thus, implementing enough instruments and specialists is mandatory to guarantee optimal follow-up and to meet the patients' needs and expectations. It is important to remember that the specificity for melanoma diagnosis at the second visit, however, increases only for those with experience with the method, hence the need for trained specialists [17,42]. Nowadays, TBP with standard VD is the best standard of care: to identify the best diagnostic tool for CM diagnosis means to define the parameter of the dermatologist diligence, namely, to exclude professional liability.

Beyond this information, it is critical to understand several key elements, clinical and medicolegal. Melanoma diagnosis remains difficult, with frequent misdiagnosis, so the definition of the dermoscopy "standard of care" and the identification of shared diagnostic guidelines is fundamental. To grant this "standard of care", it is important to be wary of quick and "magical" solutions, in the era of online diagnoses, and to refer to renowned centers and specialists on melanoma, enhancing clinician professionality. To avoid clinical and judicial delays, patients need to be informed about the aim of dermoscopy for CM diagnosis, and about the relevance of follow-up compliance. Moreover, lesion pictures and their storage are part of the diagnostic procedure: the patient must be properly informed, and he/she must properly disclose it.

In conclusion, the medicolegal gaze could be useful to the dermoscopist, providing him with a different and better confidence in the method, assuring a greater patient safety and peace of mind of both patient and physician.

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