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LETTER TO THE EDITOR

A new TADA-inspired decision algorithm for training primary care practitioners in dermoscopy

Dear Editor,

Dermoscopy has proven to be an effective tool for triaging suspicious skin lesions when performed by properly trained primary care practitioners (PCPs).[1,2] In this regard, several dermoscopic training programs have been developed and demonstrated to improve the PCPs' skills for skin tumour triage in the short term.[3,4] However, the skills acquired tended to regress rapidly after most trainings.[5]

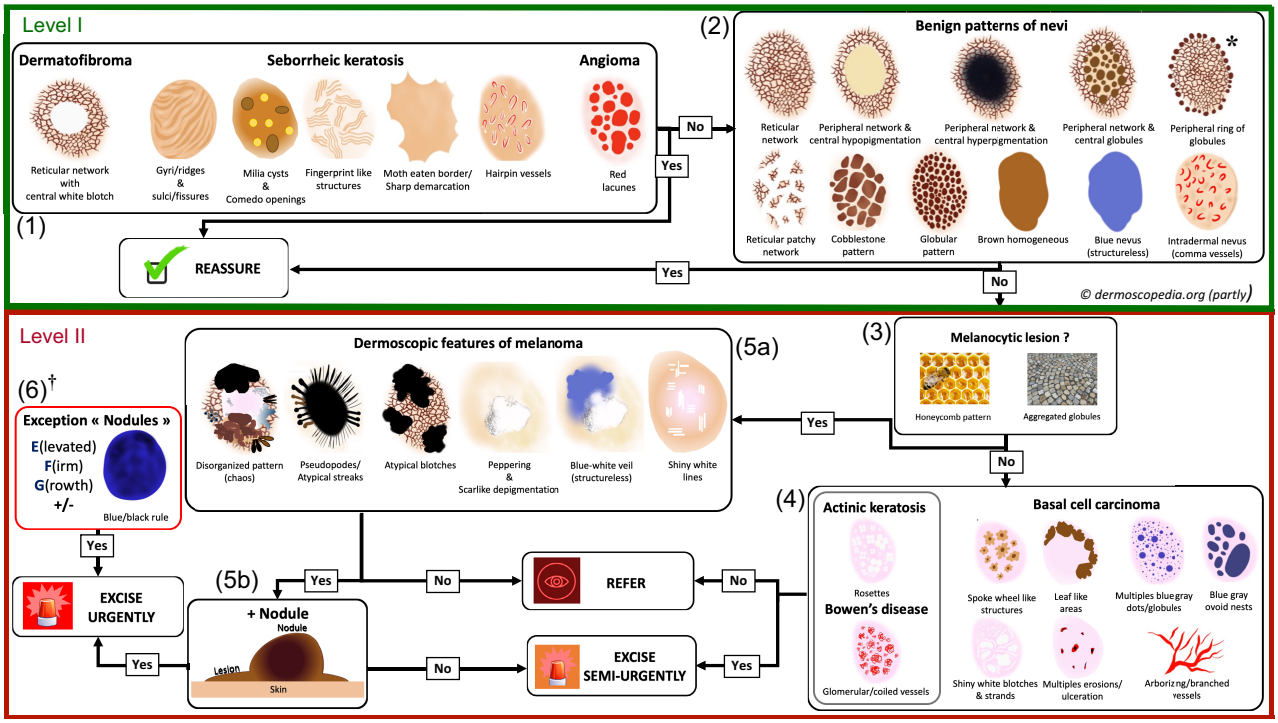

FIGURE 1 TADA-inspired Decision Algorithm (TIDA) designed for skin tumour diagnosis in primary care. Most icons representing the dermoscopic criteria used in the algorithm have been taken from www.dermoscopedia.org, to facilitate universal learning. The main purposes of this algorithm for lesion-directed screening are as follows: firstly to clearly identify the most common benign tumours (Level I) and secondly, to detect skin lesions suspicious of malignancy (Level II). In level I, first (1) look for dermoscopic features corresponding to one of the three most common benign non-melanocytic skin tumours (dermatofibroma, seborrheic keratosis or angioma). If one is clearly identified, reassure the patient and no further investigation is needed. If not, (2) identify whether the lesion manifests one of the classic dermoscopic patterns of common benign nevi (including blue nevus and intradermal nevus). If a benign pattern is found, stop the investigation. *Caution: If a nevus with a peripheral ring of globules is found in a patient over 50 years of age, excise it as it may be a symmetrical melanoma. Otherwise, apply level II. First, (3) differentiate melanocytic from non-melanocytic lesions by looking for the presence of a honeycomb pattern (reticular network) or aggregated globules within the lesion. If absent, the lesion is non-melanocytic and (4) look for dermoscopic features of basal cell carcinoma, actinic keratosis or Bowen's disease (squamous cell carcinoma in situ). If one of these tumours is identified, excise or biopsy the lesion within a few weeks (treat the lesion in case of actinic keratosis). If none of these tumours are suspected, refer the patient to the dermatologist (for second opinion/monitoring/additional examinations). If the lesion is melanocytic, (5a) rule out melanoma by looking for dermoscopic features characteristic for melanoma. If none are present, refer to the dermatologist. In presence of one or more melanoma criteria, (5b) check the lesion for a nodular component. If not, excise the lesion completely within a few weeks. In presence of a nodule, excise the lesion urgently (within 1 week). Finally, (6) check if the nodular lesion examined has the following criteria: Elevated, Firm, Growth (EFG) or the presence of structureless combined blue and black colour (blue/black rule). If so, perform complete lesion excision urgently to exclude nodular melanoma. †Caution: any Elevated, FIRM, continuously GROWING lesion, pigmented or non-pigmented, should be considered for excision even if it has the apparent morphology of one of a benign condition illustrated in Level 1.

We developed a new short training program in dermoscopy for the diagnosis of pigmented and non-pigmented skin tumours by PCPs. It combines a basic training, to use a new dermoscopic algorithm, and spaced test-based refresher sessions. This short dermoscopy training proved to be non-inferior to a longer traditional training in improving PCPs' competence in selective triage of skin tumours (benign vs. malignant) in a randomized non-inferiority trial. The methodology and outcomes of this clinical trial are described in a previous scientific publication.[6] This research letter is dedicated to the presentation of the new dermoscopic algorithm and the short training required to learn its use for effective skin cancer detection in primary care.

Because it is short and simplified, this type of training seems to appeal to a larger number of PCPs who wish to be trained in dermoscopy, thereby resulting in increased skin malignancy detection. This could reduce unnecessary referrals to dermatologists and/or biopsies for benign

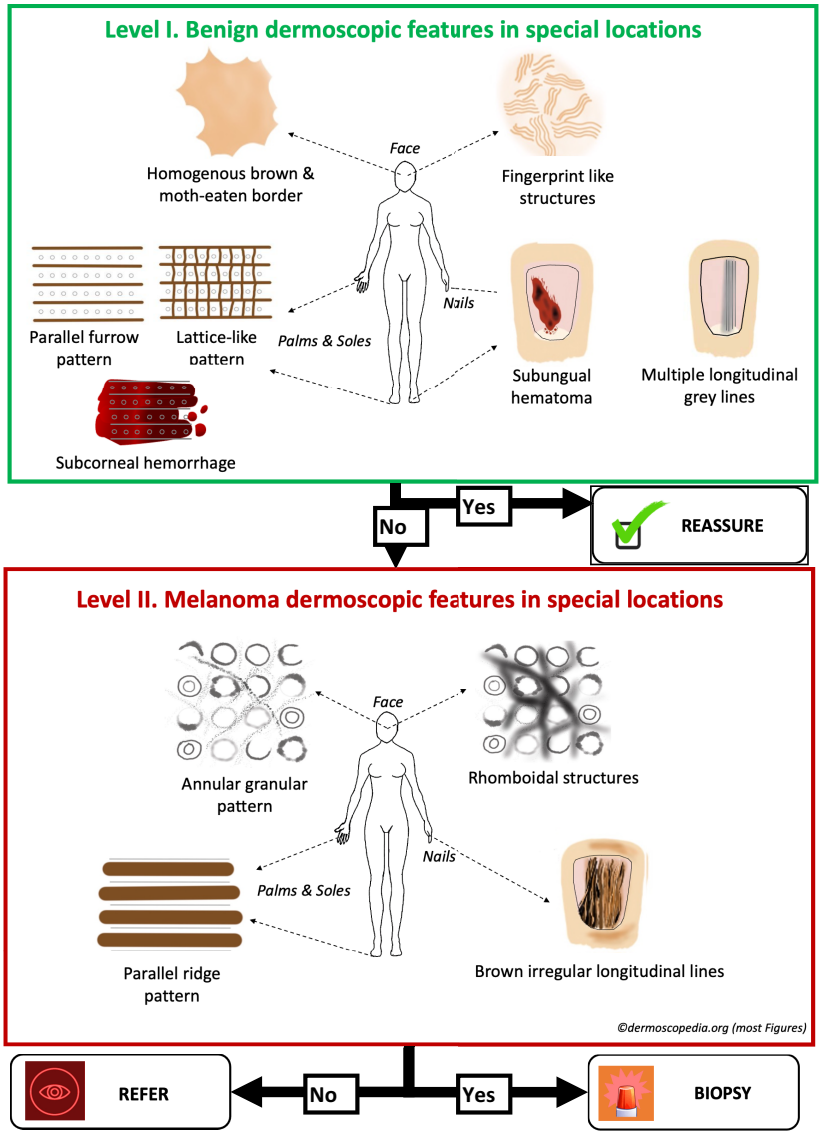

FIGURE 2 Algorithm extension for tumours in special locations. Most icons representing the dermoscopic criteria used in the algorithm have been taken from www.dermoscopedia.org, to facilitate universal learning. This extension aims to help in the diagnosis of skin tumours located on the face, palms and soles, and nails. As intended for use in primary care, the algorithm includes only frequent dermoscopic features of common benign and malignant lesions. The two-level method is applied. Firstly, level I seeks to identify common benign tumours and their characteristic dermoscopic features (on the face: seborrheic keratosis with fingerprint like structures and actinic lentigo with homogeneous brown colour and moth-eaten borders, on the nails: subungual haematoma and grey melanonychias (=melanocytic activation), and on the palms and soles: subcorneal haemorrhages and benign nevi). If one of these lesions is clearly identified, reassure the patient. If not, level II looks for malignant dermoscopic features of early melanoma in special locations (on the face: annular granular pattern and rhomboidal structures characteristic for lentigo maligna; on the nails: brown irregular longitudinal lines, and on the palms and soles: parallel ridge pattern). If one of these dermoscopic criteria is found, biopsy the lesion in the most suspicious area (for nail lesions, refer the patient for a nail matrix biopsy) to rule out melanoma. To note that any longitudinal melanonychia with onset after puberty, on a single nail and progressively enlarging, requires further examination (including nail matrix biopsy). If absent, refer the patient to a dermatologist for second opinion/monitoring or additional investigations.

skin tumours, and accelerate the management of malignant tumours.

The training program is a 4-h online course (e-learning) easily accessible to PCPs, especially those working in remote rural areas. Firstly, the training covers the proper use of a dermatoscope and the basics of dermoscopic structures. Secondly, it teaches PCPs how to use the newly created two-level decision algorithm, inspired from a pre-existing method, the Triage Amalgamated Dermoscopic Algorithm (TADA).[7] This TADA-inspired decision algorithm (TIDA) summarizes the specific dermoscopic patterns of the most common benign and malignant skin tumours. Finally, the training focuses in detail on the dermoscopic patterns of the most common benign skin tumours (dermatofibroma, seborrheic keratosis, angioma and common benign nevi).

The TIDA is an innovative dermoscopic decision-making algorithm specifically designed for PCPs. It focuses on the most common dermoscopic criteria of frequently encountered skin tumours in primary care. Level I of the TIDA aims to clearly identify the most common benign tumours, and Level II aims to detect skin lesions suspicious of malignancy (Figure 1). While TADA focuses on triage only, the TIDA allows for specific diagnosis by distinguishing melanocytic from non-melanocytic malignancies. Another added value of the TIDA is the inclusion of an extension with the dermoscopic characteristics of the most common benign and malignant skin tumours in special locations, that is face, palms and soles, and nails (Figure 2).

In conclusion, the strengths of the TIDA approach specifically dedicated to PCPs are, on the one hand, the short training time needed to learn the dermoscopic criteria included in the TIDA algorithm and, on the other hand, the availability of spaced refresher training sessions with instant corrective feedback to improve knowledge retention after training. Furthermore, the TIDA appears to be a very promising new tool for early-stage detection of skin cancers in primary care. The main goal of TIDA is to enable PCPs to make an accurate diagnosis in order to provide their patients with the most appropriate and prompt management of their skin lesions.

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CONFLICT OF INTEREST STATEMENT

None declared.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ETHICS STATEMENT

The study received ethical approval from the ethics committee of the Cliniques universitaires Saint-Luc in Brussels, Belgium.

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