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Editorial

Dermoscopy: the dermatologists' stethoscope?

Dermoscopy (also known as dermatoscopy, epiluminescence microscopy, or amplified surface microscopy) is a non-invasive technique for the *in-vivo* examination of melanocytic and non-melanocytic skin lesions. With a steadily increasing number of publications on its application in improving the detection and differential diagnosis of melanoma, as well as its use in various skin conditions in general dermatology, the use of dermoscopy is increasing rapidly, particularly in Europe, Australia and the United States. Its use is associated with both a significant increase of the sensitivity for melanoma diagnosis and a significant reduction of unnecessarily excised benign skin lesions.[1-3]

Handheld dermatoscopes utilise a light magnification system (usually x10) together with either a glass plate with a liquid medium at the skin-plate interface or cross-polarised filters without liquid. By reducing the scattering of light at the stratum corneum, the epidermis becomes translucent, revealing morphological structures that are not otherwise visible to the unaided eye from the cornified layer down to the mid-dermis. New generation commercially available handheld dermatoscopes are easily purchased today at a reasonable cost and are small enough to be carried in a dermatologist's pocket. Attaching a dermatoscope to a digital camera or mobile device has also made dermoscopic imaging and surveillance simple and convenient.

Historically, the use of dermoscopy has been dedicated to the differential diagnosis of pigmented skin lesions and the dermoscopic patterns of most common skin tumours, including melanocytic naevi, seborrhoeic keratoses, dermatofibromas, vascular tumours, melanomas, basal cell carcinomas and squamous cell carcinomas are well defined and established in everyday practice.[4-6] One of the main impacts of dermoscopy has been its use in enhancing the detection of melanoma while reducing the ratio of benign to malignant excisions (BMR).[7]

The indications of dermoscopy have expanded immensely in recent years. It has been used as an aid in the realm of skin infections and infestations (entomodermoscopy),[8-10] hair and scalp disorders (trichoscopy),[11] nailfold capillary abnormalities (capillaroscopy),[12,13] and inflammatory skin disorders (inflammoscopy).[14] Given the utility, convenience and safety of dermoscopy as a rapid diagnostic tool, dermoscopy is being seen as the dermatologists' "stethoscope" in its utility as an aid in clinical examination and management decision.[15]

In spite of the wealth of publications and robust data validating the value of dermoscopy, its applicability in our locality requires several considerations.

Firstly, the learning curve for dermoscopy is a long one and interpretation of complex dermoscopic features requires training and experience. Without adequate experience and training, dermoscopy may actually decrease diagnostic performance.[16,17] In a pilot study by Terushkin et al, the introduction of dermoscopy

into the practice of a general dermatologist required an approximately 18-month learning curve before the BMR approached that of a pigmented lesion specialist.[18] Since melanoma is relatively uncommon in the local population, the learning curve is expected to be longer.

The use of dermoscopy also has a number of limitations. When evaluating pigmented lesions, clinically obvious melanomas or malignant skin tumours can be diagnosed without the need for dermoscopy and managed accordingly. Early melanomas, particularly those that do not fulfil the clinical ABCD criteria are known to be difficult to diagnose. Dermoscopy is helpful in diagnosing those melanomas where the dermoscopic features appear earlier than the clinical characteristics, therefore allowing earlier detection. However, in some early melanomas, common dermoscopic algorithms have been found to be unable to reliably distinguish between naevi or melanomas.[19] These "featureless melanoma" may lack those melanoma-specific criteria and may even appear as benign melanocytic lesions or atypical naevi. Nodular melanomas, amelanotic and hypomelanotic melanomas are also known to be difficult to diagnose both clinically and dermoscopically. It is important to remember that sometimes lesional change may be the only feature suggesting malignancy, therefore the "if in doubt, cut it out" approach represents the safest strategy in the management of equivocal, changing or nodular lesions.

In summary, the use of dermoscopy is increasing worldwide and new research data are continually gathering in optimising its role in the evaluation and management of pigmented skin lesions. Its expanding applications in general dermatology and its use as a link between clinical and histopathological diagnosis makes the dermatosope a useful and convenient tool to supplement clinical examination. The usefulness of dermoscopy depends greatly on the knowledge and experience of the dermoscopist, and recognition of its limitations is important so as not to impair clinical judgement particularly in new users, as it is not a replacement for histopathological diagnosis.

In this issue we are delighted to have Professor Masaru Tanaka, an expert dermatologist and dermoscopist, share with us and our readers some of the basic concepts and interpretations of skin lesions using dermoscopy. Due to the volume of images in his manuscript, our editorial board has divided his article into two parts, and the second portion of his article shall be published in the next issue of this journal.

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