

Editorial

How useful is dermoscopy?

Dermoscopy is not a common practice locally. This instrument is only recently introduced into the public sector and the frequency of its use in the private sector is unknown. Limited exposure may be one of the factors of its unpopularity. Although dermoscopy has already been known for 20 years, studies on its application in pigmented skin lesions has only blossomed in the recent five or ten years. For dermatologists who have finished their training more ten years ago, dermoscopy is a new item to them; while dermatology trainees do not receive any formal training on dermoscopy, since their trainers know little about the instrument. Since time and money are already very restricted in training centres, whether resource should be diverted to this recently emerging instrument would, in part, depend on its usefulness.

Dermoscopy was primarily developed to examine pigmented skin lesions so that early melanoma could be recognised. The principles behind are firstly, melanoma carries a high mortality if diagnosed at a late stage and secondly, early melanoma is difficult to be recognised with the unaided eye. The diagnostic accuracy of melanoma unaided is around 60% and it is hoped that dermoscopy can improve this performance. A meta-analysis of 27 studies by Kittler et al¹ in 2002 supported that clinical inspection coupled with dermoscopy gave a better diagnostic accuracy for melanoma than without dermoscopy, but on one condition: it was performed by a dermatologist well-experienced in dermoscopy. In the hands of the untrained, dermoscopy did not improve diagnostic performance. This is not surprising since the appreciation and

interpretation of those complex dermoscopic features need knowledge and experience. Since malignant melanoma is relative uncommon in our locality, the time needed to accumulate enough experience is expected to be longer. Hence dermoscopy can be a useful diagnostic tool for melanoma provided that there is adequate training.

Despite the encouraging report of Kittler et al¹, Skvara et al² in his article in 2005 commented dermoscopy might not be too useful when we needed it most. We can divide all melanoma into 4 quadrants or groups (Table 1). Quadrant 1 lesions possess both clinical and dermoscopic features of melanoma and the dermoscope is redundant here. Quadrant 2 lesions are diagnosed clinically but not dermoscopically, which will do no harm if we are aware of the limitations of dermoscopy and proceed to biopsy despite of the negative dermoscopic finding. Quadrant 3 lesions are diagnosed by dermoscopy but are not otherwise suspected clinically, and it is the quadrant where dermoscopy improves the diagnostic accuracy. Quadrant 4 lesions are missed both clinically and dermoscopically. It is in this quadrant that problem arises. Skvara et al found that a significant proportion of their

Table 1. The four quadrants of malignant melanoma²

	Dermoscopically Positive	Dermoscopically Negative
Clinically positive	1	2
Clinically negative	3	4

melanoma belonged to quadrant 4 and were initially featureless both to the unaided eye and under the dermoscope.

Fortunately this limitation of dermoscopy in diagnosing melanoma is now well recognised and there is evidence to support that these early featureless lesions can be recognised by observing their changes over time. With the advent of digital dermoscopy (a dermoscope coupled with a digital camera or other digital data storage devices), the comparison of clinical and dermoscopic features over time are now possible. Digital dermoscopic monitoring devices are developed for the sequential imaging of both clinical and dermoscopic images. It enables the long term comparison of atypical naevi over 6 or 12 months and short term monitoring on suspicious lesions that lack features of melanoma over 3 months interval. Demonstrating changes over time may enable early detection of melanomas that lack the clinical and dermoscopic features of melanoma, however, more supporting evidence is needed.

The use of dermoscopy is not limited to the diagnosis of malignant melanoma. Over the past ten years, its scope of use has expanded to the diagnosis of hair and scalp disorders; papulosquamous conditions such as psoriasis, lichen planus; non-melanocytic lesions such as angioma, dermatofibroma, seborrhoeic keratosis, sebaceous hyperplasia and last, but not least, basal cell carcinomas (BCCs).

The usefulness of dermoscopy in diagnosing BCCs, which constitute the commonest malignant primary cutaneous tumour worldwide, need some special considerations. BCCs behave differently from melanoma. BCCs grow slowly, though locally invasive they hardly metastasize and the mortality from them is much lower than melanomas. Most BCCs diagnosed with the unaided eyes can be cured by surgery or radiotherapy. These features

may limit the usefulness of dermoscopy in the diagnosis of BCCs. Borrowing the four quadrants of melanoma in Table 1, we need to find out the proportion in quadrant 3 before deciding whether dermoscopy is useful in the diagnosis of BCCs. Considering the metastatic potential of BCCs, quadrant 4 may be much less important than in melanoma.

Of course the application of dermoscopy should not be limited only to its performance in diagnosis. It may also be employed in management planning. A common example is a clinically basal cell carcinoma supported by dermoscopic finding. If it is small and occurs on cosmetically unimportant sites, it can be excised with adequate margins without going through the step of a tiny biopsy on a already small lesion.

The knowledge and experience of a dermoscopist and the lesion concerned will determine the usefulness of dermoscopy. While more evidence on the diagnostic performance of dermoscopy is emerging, its diagnostic accuracy is never 100% and can never replace histopathology. Therefore, when managing a skin growth, "if in doubt, cut it out."

References

1. Kittler H, Pehamberger H, Wolff K, Binder M. Diagnostic accuracy of dermoscopy. *Lancet Oncol* 2002;3:159-65.
2. Skvara H, Teban L, Fiebiger M, Binder M, Kittler H. Limitations of dermoscopy in the recognition of melanoma. *Arch Dermatol* 2005;141:155-60.

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