

## Nailing the diagnosis

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With sufficient training and expertise, clinicians can use dermoscopy to improve diagnostic accuracy for melanocytic lesions and other common skin tumours. Dermoscopy may also be useful in the examination of other elements of the skin, including the vasculature, hair and nails.

### Case presentations

#### Case 1

A 60-year-old woman presented for assessment of progressive splitting of her left third fingernail associated with chronic paronychia. She admitted to picking at the nail and thought that some of the changes were self-induced. There was no other specific history of trauma or psoriasis.

Examination demonstrated a localised dystrophy of the radial aspect of the involved fingernail. There was some associated onycholysis (lifting of the free margin of the nail plate) and a number of pigmented bands spanning two-thirds of the nail plate (Figure 1).

On dermoscopy, multiple bands of pigment in varying shades of brown were seen (Figure 2). These bands were of variable width and spacing, and their parallel nature was disrupted in some areas. The lateral limit of the pigmentation was indistinct, and occasional melanin inclusion was visible. Pigment



Figure 1. Case 1: an ill-defined pigmented band and associated nail dystrophy affecting the left third fingernail.



Figure 3. Case 2: nail plate pigmentation with prominent band medially of the right great toenail.

was visible beneath the cuticle but not beyond it.

#### Case 2

A 55-year-old man was noted incidentally to have a pigmented right great toenail (Figure 3) when attending for another problem. He had been aware of the change, which had developed slowly over several months.

Examination revealed patchy pigmentation of the right great toenail with a narrow blackened band medially and some distal subungual hyperkeratosis.

On dermoscopy, this band was seen to comprise both a blackened pigment and waves of yellowish discolouration (Figure 4). Distally, close to the free margin, multiple yellowish spears could be seen on either side of the dark band showing retrograde growth. Scattered

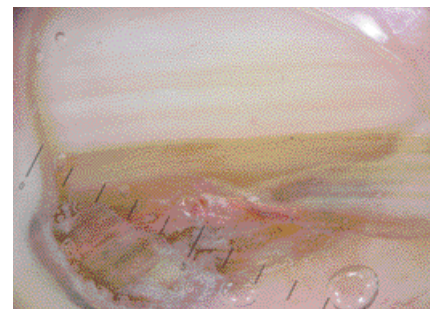


Figure 2. Case 1: dermoscopy showing dystrophy and multiple pigmented lines of varying colour. Disrupted parallelism is prominent (scale is in millimetres).

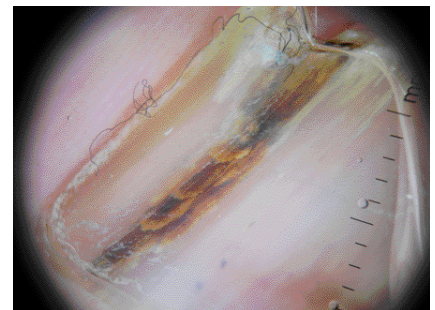


Figure 4. Case 2: dermoscopy showing a blackened band with waves of yellowish discolouration on the right great toenail. Distal spears are also seen (scale is in millimetres).

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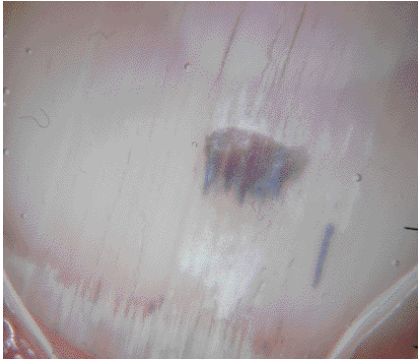


Figure 5. Dermoscopy of a toenail showing a small resolving subungual haematoma situated mid-nail. Note the capillary-like streaks distally (scale is in millimetres).

blood spots were visible beneath the nail and laterally a large resolving haemorrhage could also be seen.

Clippings were taken because of a suspicion of the presence of a nail plate fungal infection, and this was confirmed by both microscopy and culture.

### Diagnosis

An initial biopsy of the woman's fingernail in case 1 confirmed the presence of a subungual melanoma. On partial amputation of the digit, the depth of the melanoma was found to be level III and 0.93 mm.

The diagnosis in the man in case 2 was pigmented onychomycosis (*Trichophyton rubrum* var. *nigricans*).

### Discussion

These two cases highlight the clinical dilemma when faced with band-like nail plate pigmentation ('longitudinal melanonychia'), which usually implies a subungual melanocytic lesion. The critical decision lies in which cases to undertake biopsy, which in itself is invasive with a risk or permanent nail dystrophy.

The woman in case 1 showed many of the typical features of nail apparatus melanoma with a broad and patchy pigmented band on the nail associated with localised dystrophy. Dermoscopy proved useful for identifying features typical of

melanoma. When looking at nails, dermoscopy is always best performed using a gel interface.

Clinically, a subungual melanoma should be suspected when a pigmented band wider than 3 mm occurs in an adult nail and particularly when it is darkening or widening. These bands are typically broader at the proximal aspect in cases of melanoma and may cause dystrophy at a late stage.

The dermoscopic features that are suggestive of melanoma are multiple pigmented bands of variable width, spacing and colour. In some areas, the lines may lose their parallel alignment or end abruptly. Adjacent nail-fold pigmentation that is only visible dermoscopically is known as a 'micro Hutchinson's sign' and this too is a useful feature. This irregular pigmentation pattern of melanoma is distinct from the pattern seen in subungual naevi with bands of pigment that are very uniform in colour, spacing and width.

Onychomycosis, as seen in case 2, can simulate a melanocytic lesion of the nail and produce a pigmented band. This is not limited to dermatophyte infection because it may also be caused by certain moulds such as *Scytalidium* or *Scopulariopsis* species.

Subungual haematoma is simpler to diagnose, and dermoscopy is valuable in the assessment process. These haematoma typically appear as red or purple subungual discolouration with blood spots at the proximal or lateral margin. A capillary-like effect may be seen at the distal margin with multiple linear streaks (Figure 5). Subungual haematomas grow out over months, and this can be documented with serial imaging to reassure the patient. Curiously, not all patients will recall a specific traumatic episode.

### Key points

Nail pigmentation may be due to a number of causes. When pigmentation is band-like in appearance and isolated to one digit in an adult, a melanocytic lesion

is most likely. Dermoscopic examination aids assessment of pigmented bands. Where there is a broad band consisting of irregularly pigmented, sized and spaced lines, consider a diagnosis of a subungual melanoma. MT

### Further reading

Braun RP, Baran R, Le Gal FA, et al. Diagnosis and management of nail pigmentations. *J Am Acad Dermatol* 2007; 56: 835-847.

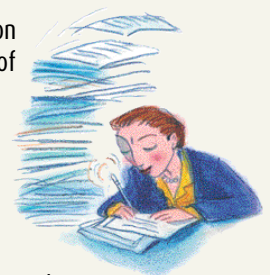
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Ronger S, Touzet S, Ligeron C, et al. Dermoscopic examination of nail pigmentation. *Arch Dermatol* 2002; 138: 1327-1333.

COMPETING INTERESTS: None.

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