Half-and-half nails in a patient on antituberculosis treatment

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DESCRIPTION

A Nigerian-born British national aged 24 years presented to our tuberculosis (TB) clinic after a positive, screening, quantiFERON blood test. She had been in the country for 12 years, had no known exposure to TB and no previous medical history. She was counselled regarding the risks and benefits of treating latent TB and then, following normal liver and kidney function blood tests, was started on combined rifampicin and isoniazid. She returned 4 weeks later to follow-up clinic with no systemic symptoms or side effects but with nail changes as shown in figure 1.

The diagnosis is half-and-half nails, in this case caused by isoniazid, likely due to its effects on niacin metabolism. However, half-and-half nails are most commonly seen in renal failure, and therefore, renal function tests are critical part of the work-up.

Half-and-half nails are when the distal nail bed discolours to red-brown and the proximal nail bed becomes white. Importantly, the diagnosis requires that at least 20% of the distal nail should be red-brown, otherwise the diagnosis is Terry's nail.[1] The pathogenesis of these nail changes is not understood, though melanin deposition in the nail plate may explain the red-brown discolouration. Thickening of the extracellular matrix between the nail and bone may lead to lower blood supply to the proximal nail and its whiter colour. The condition can occur in isolation, though it is also associated with renal failure, Bechet's disease, Crohn's disease and pellagra.

In our patient, the nail changes appeared with the isoniazid treatment, though interestingly she developed no other symptoms or signs in keeping with fulminant pellagra (the four D's of diarrhoea, dermatitis, dementia and death). This differentiates her case from two other case reports presenting half-and-half nails secondary to isoniazid.[2 3] Our patient was young, healthy and had no other symptoms or signs before, during or after her treatment with combined rifampicin and isoniazid. Furthermore, her nail changes have completely resolved since completion of her 3 months of therapy. She therefore constitutes a unique case highlighting a rare dermatological side effect of an increasingly common treatment. Indeed, it is no longer just rifampicin that can be blamed for changing elements of the body orange, or at least red-brown.

Figure 1 Photograph November 2015 showing the nail changes across all fingers and close up.

Learning points

- Isoniazid can cause the isolated side effect of half-and-half nails without systemic changes.
- It is essential to check renal function in all patients presenting with half-and-half nails.

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REFERENCES

1 Iorizzo M, Daniel CR, Tosti A. Half and half nails: a past and present snapshot. *Cutis* 2011;88:138–9.
2 Ma Y, Xiang Z, Lin L, *et al*. Half-and-half nail in a case of isoniazid-induced pellagra. *Postepy Dermatol Alergol* 2014;31:329–31.
3 Cakmak SK, Gönül M, Aslan E, *et al*. Half-and-half nail in a case of pellagra. *Eur J Dermatol* 2006;16:695–6.

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