

## IMAGE IN NEPHROLOGY

# Cyclophosphamide-induced melanonychia

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### ABSTRACT

A case of drug-induced melanonychia due to cyclophosphamide is described in a patient with lupus nephritis. This resolved completely at 20 weeks after stopping the drug. Clinicians should be aware of the causes of melanonychia, and, if drug-induced melanonychia is suspected, the offending drug should be stopped whenever possible.

**Keywords:** cyclophosphamide; melanonychia; adverse drug reaction.

A 62-year-old woman with systemic lupus erythematosus presented with new-onset hypertension and renal failure (serum creatinine 744  $\mu\text{mol/L}$ ), with an active urine sediment. A kidney biopsy revealed class IV lupus nephritis with >50% crescents. She was initiated on induction therapy using intravenous pulse methylprednisolone (1 g over 3 days) followed by oral cyclophosphamide and prednisone. The dose of cyclophosphamide was 75 mg daily for 2 months and subsequently 100 mg daily for 7 months. Prednisone was initiated at a dose of 60 mg daily and tapered to 10 mg daily over the course of 6 months.

During routine follow-up at 9 months, she complained of the gradual onset of black discoloration of all her fingernails (Figure 1, panel A). Examination revealed symmetrical, almost homogeneous, grey-black discoloration of the nails that did not blanch with pressure. No other mucocutaneous areas were affected. The patient was otherwise clinically well.

Melanonychia is a rare and under-reported adverse effect of cyclophosphamide therapy [1]. Dermoscopy shows longitudinal thin grey lines on a homogeneous grey background [1]. Drug-induced melanonychia is thought to result from melanocyte activation with subsequent increased melanin synthesis and deposition [1], which is

readily reversible after drug cessation. This form of melanonychia is not associated with any deleterious effects on health and there is no specific treatment. The differential diagnoses include melanoma, psoriasis, Addison's disease, phototherapy, electron beam therapy and exposure to various drugs [1,2].

In our patient, discontinuation of the cyclophosphamide resulted in complete resolution at 20 weeks of follow-up (Figure 1, panels B and C). Her lupus nephritis is in partial remission and she is currently receiving mycophenolate mofetil as maintenance therapy.

Clinicians should review their patients' prescriptions regularly, be aware of the various causes of melanonychia, and, if drug-induced melanonychia is suspected, the offending drug should be stopped whenever possible.

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### Supplementary materials

A PowerPoint slide of Figure 1 can be accessed via the supplementary materials link on the Journal website.



**Figure 1. Melanonychia due to cyclophosphamide.** Panel A shows the prominent black discoloration of the nails (arrows) after 9 months of oral cyclophosphamide treatment. Panels B and C illustrate resolution after stopping the drug at 9 and 20 weeks, respectively.

**REFERENCES**

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2. Mishra K, Jandial A, Khadwal A, Malhotra P. Reversible melanonychia. *BMJ.* 2017; 358:j3499.