Cyclophosphamide-induced melanonychia striata

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Accepted 1 September 2022

DESCRIPTION

Melanonychia striata is a benign condition seen as longitudinal, demarcated and pigmented streaks or bands within the nail plate. Melanonychia striata can be seen in one nail or many nails. If more than one nail is involved usually systemic causes have to be ruled out like medications used for any underlying medical conditions.

A woman in her 40s with a confirmed diagnosis of systemic sclerosis both clinically, histologically, and serologically was on 50/mg daily oral dose of cyclophosphamide for her pulmonary involvement. Her HRCT (High-resolution computed tomography) and pulmonary function tests were suggestive of interstitial lung disease. The American College of Rheumatology-European Alliance of Associations for Rheumatology criteria for the classification of systemic Sclerosis were used. Puffy fingers, abnormal nail fold capillaries, interstitial lung disease and the presence of scleroderma related antibodies—with a total score of nine was noted in the index patient. Patients having a total score of 9 or more are classified as having definite systemic sclerosis.[1] The patient did not have desired results after 2 weeks course of oral steroids and was referred to the present tertiary healthcare setup non-selective immunosuppressors are still the main treatment for Interstitial lung disease, with cyclophosphamide most widely used to obtain remission.[2] Hence, the index case was put on cyclophosphamide. The patient noticed nail pigmentation that started proximally and spread distally around 6 weeks after initiation of therapy. The pigmentation involved only the nails of both hands sparing the little digit nails (figure 1). There was no associated skin or mucous membrane pigmentation. She did not have any evidence of systemic toxicity. Complete haemogram, LFT (Liver function tests) and RFT (Renal function tests) were within normal limits. A clinical diagnosis of melanonychia striata due to cyclophosphamide was made. The patient was counselled about the benign nature of the condition.

Figure 1 Linear pigmented bands in all the fingernails except in both little fingers.

Learning points

- Suspect any drug or systemic cause for any pigmented bands affecting multiple nails.
- When you administer drugs like cyclophosphamide, be aware of such nail pigmentation which can be a cosmetic concern for the patient.
- Good counselling is all that is needed as the change is a benign condition.

Normally, melanocytes within the nail matrix are in a non-activated state without the ability to produce melanin. When the melanocytes are activated melanin is secreted and accumulates in the nail plate clinically manifesting as pigmented streaks.[3]

Either increased activity of melanocytes or melanocytic hyperplasia in the nail matrix with consequent increased melanin deposition in the nail plate are the causes of melanonychia striata.[2] Common causes of melanonychia striata can be classified as—conditions due to melanocytic activation and melanocytic hyperplasia. The elaborate list of causes is found in the reference by Leung *et al*.[4]

The focal stimulation of melanocytes in the matrix disturbed or activated by the antimitotic activity of cyclophosphamide may cause the pigmented bands in the nail plate as seen in the index case.[5 6]

Drugs reported to cause nail pigmentation include chemotherapeutic agents, antiretroviral agents, commonly used tetracycline group of drugs and antimalarial. The known drug causing nail pigmentation consists of—cyclophosphamide, doxorubicin, hydroxyurea, bleomycin, chloroquine, tetracyclines and zidovudine.[7] Fortunately, most of these changes regress once the therapy is completed, except for their cosmetic concerns needing good counselling.

Contributors AI is the sole author drafting the manuscript with literature search.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Consent obtained directly from patient(s)

Provenance and peer review Not commissioned; externally peer reviewed.

Case reports provide a valuable learning resource for the scientific community and can indicate areas of interest for future research. They should not be used in isolation to guide treatment choices or public health policy.

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To cite: Inamadar A. *BMJ Case Rep* 2022;**15**:e251441. doi:10.1136/bcr-2022-251441

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