

Residents' Corner

Chemotherapeutics nailing it!

Pratibha Singh¹

¹Department of Haematology, Nil Ratan Sircar Medical College and Hospital, Kolkata, West Bengal, India.

***Corresponding author:**

Pratibha Singh,
Department of Haematology,
Nil Ratan Sircar Medical
College and Hospital, Kolkata,
West Bengal, India.

drpratibhasingh21@gmail.com

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The effects of chemotherapy agents on rapidly proliferating organs such as hair, skin, nails, and gastrointestinal tract are both associated with systemic as well as cutaneous changes. The common findings are alopecia, mucositis, dermatitis, and nail changes. Here, we will reflect on some typical nail changes in a patient undergoing chemotherapy and the various chemotherapeutic agents implicated for the same.

A 14-year-old girl, diagnosed with B – acute lymphoblastic leukemia, with multiple relapses, recently received Hyper CVAD – regimen, consisting of cyclophosphamide, vincristine sulfate, doxorubicin, dexamethasone in Phase A, and methotrexate along with cytarabine in Phase B 2 months back. She presented with pigmentary changes over the nail plate, along with transverse white lines running across the plate at equal intervals. The proximal end at the lunula maintained its normal hue.

Cytotoxic chemotherapy agents can induce a temporary arrest of the proliferative functions of the nail matrix which can present as multiple Mees' lines in the nail plate. They appear as one or multiple transverse white bands, affecting nails at the same level and moving in the direction of nail growth distally [Figure 1]. The proliferative potential of the finger nails and



Figure 1: The nail matrix along with the nail plate showing melanonychia along white alternating transverse white ridges over the nail plate – Mees' lines.

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toe nails is different; therefore, similar changes were not seen in the toe nails. Our patient also had melanonychia [Figure 1], dark pigmentation of nails observed as transverse bands. This usually occurs due to melanocyte activation in the matrix epithelium. The alternating bands of normal and hyperpigmented bands often correspond to the chemotherapy cycles and intermittent administration of drugs. Mees' lines in our patient are most relevant with administration of cyclophosphamide, vincristine, and doxorubicin, and melanonychia can be due to methotrexate in addition to cyclophosphamide and daunorubicin. It is the most reversible change, often corrects once chemotherapy is stopped. The cosmetic changes often add to the anxiety and apprehension of the patient receiving these drugs. It is important to counsel the

patients regarding these asymptomatic changes and instill a state of composure.

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