Chemotherapy induced transverse leukonychia (Mees’ lines)

A 16-year-old boy, with acute lymphoblastic leukemia was noted to have a single band of transverse leukonychia (around 3-4 mm) on the nail plates of all fingers/toes 20 days after completion of intensification phase of therapy (total cumulative dose of daunorubicin 150 mg/m²) (Fig. 1). The lines typically were homogenous with smooth borders, not palpable, non-blanchable and spanned the entire breadth of the nail plate.

Mees’ lines are single transverse white bands that occur on the nail plate. These are classically associated with arsenic intoxication but have been reported with carbon monoxide poisoning, cardiac failure, chemotherapeutic drugs, Hodgkin’s disease, pneumonia, psoriasis, renal failure, sickle cell, thallium poisoning and helminthic infections. They should be distinguished from other nail changes. Beau’s lines are transverse depressions in the nail plate (temporary cessation in nail growth) that often follow local trauma or systemic disease and tend to appear about one month after the inciting event. Muehrcke’s lines are narrow, white transverse lines (usually two); they occur with hypoalbuminemia. Mee’s lines resemble Muehrcke’s lines, but the lines are thicker and may be single or multiple. Trauma-induced transverse white bands tend to be more linear, they resemble the contour of the proximal nail fold, and they usually do not spread across the entire breadth of the nail plate, whereas systemic disease-associated lines typically have a contour similar to the distal lunula and a rounded distal edge. These nail changes are benign requiring no specific intervention and resolve spontaneously, by moving distally.

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Fig. 1. Mees’ lines (arrowhead) presenting as a single transverse band of white discoloration of the nail plate.