Beau’s Lines

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An 11-year-old girl, was diagnosed to have acute myeloid leukemia, and received induction chemotherapy with duanorubicin and cytarabine (3+7 regimen). During induction she developed febrile neutropenia lasting 3-4 weeks. Post-recovery she noted horizontal grooves and pigmented lines in her nails, which were picked up as Beau’s lines with melanonychia resulting from chemotherapy and prolonged illness. Beau’s lines are transverse depressions in the nail plate that run parallel to the white, moon-shaped portion of the nail bed (lunula), first described in 1846 by Joseph Honoré Simon Beau. They result from a sudden interruption of nail keratin synthesis during a severe systemic illness, malnutrition, zinc or iron deficiency, peripheral vascular disease or during a trauma or local disease. Recurrent disease or insult may produce repeated transverse grooves in a single nail.

Beau’s lines are commonly seen in chemotherapy patients as a result of suppressed growth of the nail matrix by antimitotic drugs. The most common offending agents being adriamycin, taxanes, vinca alkaloids, 5-fluorouracil, cyclophosphamide and bleomycin. Other common nail changes induced by antineoplastic drugs are melanonychia – dark pigmentation of nails seen as diffuse, transverse, or longitudinal bands and leukonychia striata (Muehrcke’s lines) – transverse white bands. Many a times a combination of these changes are present in the same patient, as here.

Beau’s lines grow distally and disappear as the nail grows. Because finger nails grow at a rate of 0.1 mm and toe nails 0.03 mm per day, the duration as well as the time elapsed since the causative insult can be inferred. Treatment includes investigation for possible causes and the correction of same, besides simple nail care and hygiene may be advised.

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Figs. 1 and 2: Horizontal grooves and pigmented transverse band involving finger nails.