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Challenging Case

White Bands on the Nails: A Diagnostical Clue

A 51-year-old woman was referred to our clinic because of nail lesions characterized by lunular erythema affecting the lunulae of both first fingers and toes, accompanied by dizziness, generalized weakness, lack of strength, and elevated hepatic and muscle enzyme levels (Fig. 1). The patient had been on rosuvastatin, 20 mg daily, for 5 months following a myocardial infarction. Discontinuation of rosuvastatin led to remission of the constitutional symptoms and lunular erythema. Systemic autoimmune, inflammatory, and infectious diseases were excluded based on serologic findings.

The patient returned to our clinic 1 month later with the presence of unique pale, milk-white transverse lines on the fingernails and toenails. On physical examination, these lines did not blanch upon applying pressure to the nail plates (Figs. 2 and 3). No other pathological skin findings were identified, and the patient reported no recent introduction of medications or any other health issues.

Fig. 1. Lunular erythema affecting the first fingernails and toenails, which resolved after discontinuation of rosuvastatin.

Fig. 2. Transverse white lines on fingernails lines affecting the entire width of the nail plate.

Fig. 3. Transverse white lines affecting the toenails.

What is your diagnosis?

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Diagnosis

Mees' lines.

Course of the disease and comment

During follow-up visits to our clinic, these white lines progressed along the nail plate until they disappeared 10 weeks after onset at the distal free edge.

Leukonychia refers to the loss of normal transparency of the nail plate, which is replaced by a whitish coloration.[1] Leukonychia can also be classified according to its clinical presentation as total, partial, striated, or punctate. Within striated leukonychia, it is possible to differentiate between transverse leukonychia and longitudinal leukonychia.[2] According to Baran,[3] leukonychia can be classified as apparent leukonychia, originating in the underlying tissue; true leukonychia, attributed to alterations in the nail plate itself that impede the typical pink hue of the subjacent nail bed; and pseudoleukonychia, when the cause is neither in the nail matrix nor in the nail bed.

Apparent leukonychia was first described by Muehrcke in 1956 in patients with decreased albumin levels in conditions such as nephrotic syndrome caused by various entities (membranous glomerulonephritis, systemic lupus erythematosus, liver cirrhosis, etc.).[4] The common denominator among these conditions is hypoalbuminemia and edematous states, suggesting a possible causal mechanism involving vascular compression of the nail bed secondary to localized edema. Apparent leukonychia has also been associated with agents such as cyclophosphamide, doxorubicin, and 5-fluorouracil, as well as systemic conditions such as rheumatoid arthritis and cardiac transplantation.[2]

Although Mees' lines are classically associated with acute arsenic poisoning, alternative etiologies have been described. These include several pharmacologic agents, particularly chemotherapeutic agents, cyclosporine, and synthetic opioids.[5] Trauma, environmental factors such as high altitude, nutritional deficiencies such as pellagra, and infectious diseases including respiratory infections, septicemia, malaria, leprosy, herpes zoster, and measles have also been identified as potential causes.[6] In addition, Mees' lines have been reported in systemic conditions such as COVID-19, heart failure, Hodgkin disease, hepatic disorders, immune hemolytic anemia, acute renal failure, and lupus erythematosus.[2]

Histologic studies have shown persistent parakeratosis in Mees' lines, characterized by disordered large and globular onychocytes exhibiting perinuclear vacuolization and disorganization of cytoplasmic structural filaments.[2,5]

It is important to differentiate Mees' lines from other causes of transverse leukonychia, such as Muehrcke lines. Unlike Muehrcke lines, Mees' lines do not blanch under nail pressure and progress distally along the nail plate as the nail grows. This distinction highlights the importance of recognizing Mees' lines as a pathology originating from the nail matrix rather than the nail bed. Traditionally, they have been associated with arsenic intoxication; however, cases have also been reported in association with systemic conditions including pellagra, Hodgkin disease, renal allograft rejection, and exposure to chemotherapeutic agents.

Conflict of interest

The authors declare that they have no conflict of interest.

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