CLINICAL IMAGES

Nail the Diagnosis

A 46-year-old woman from eastern Nepal with no known comorbidities presented to the outpatient department of Patan Hospital, Lagankhel, Lalitpur, Nepal with palpitations, fatigue, and lightheadedness for 1 mo, which had worsened gradually to a state of

inability to perform even usual daily activities. She also experienced cramps in her calf muscles. On examination, she was found to have nail abnormalities (Figures 1 and 2).

What is your diagnosis?

Figure 1. Classic spoon shaped concave nails of finger. Photograph by Buddha Basnyat, MD.

Figure 2. Concave toe nails with significant mud staining. Photograph by Buddha Basnyat, MD.

Answer: Clinching Koilonychia

The nail abnormalities seen in these figures are classic transverse and longitudinal concavities of the nails, resulting in spoon-shaped nails, known as koilonychia.¹ Koilo is Greek for “hollow.” The nails are abnormally thin and lose their normal convexity. They can be flat or concave (as in this case). Koilonychia has multiple etiologies. It may be hereditary, acquired, or idiopathic. It has been classically associated with iron deficiency, inflammatory dermatoses such as lichen planus or psoriasis; however, it is more commonly seen in occupationally induced cases such as exposure to petroleum, high altitude, and trauma.² Several mechanisms for spooning of the nail have been proposed such as angulation of the nail matrix secondary to connective tissue changes or a relatively thin distal matrix as compared with the proximal matrix, although the exact cause is unknown.³ Ruling out iron deficiency anemia in someone with koilonychia in a developing country such as Nepal is an important first step because iron-deficiency anemia, especially due to hookworms, is very common in people working bare feet in fields in rural areas. In such cases, the term “clinching koilonychias” is sometimes used to indicate that the presence of koilonychia “clinched” the diagnosis. Figure 2 also shows mud staining in the toenails of our patient because of working in fields.

On further examination, she had pallor. Investigations revealed the following, with the normal range of values presented in parentheses: hemoglobin 5.2 (12–15.5) gm·dL⁻¹, hematocrit 19 (37–48)%, mean cell volume 54 (80–96) fL·cell⁻¹, mean cell hemoglobin 15 (27–33) pg·cell⁻¹, and mean cell hemoglobin concentration 27 (33–36) g·dL⁻¹. The peripheral smear revealed a

picture of microcytic, hypochromic anemia. Iron profile studies showed serum iron of 32 (65–175) mcg·dL⁻¹, total iron binding capacity of 392 (265–497) mcg·dL⁻¹, and serum ferritin of 4.32 (6.24–137) ng·dL⁻¹, confirming iron deficiency. Her menses were normal. The stool examination showed hookworm ova.

She was treated with albendazole and iron supplementation. At follow-up examination about 3 mo later, she had complete resolution of anemia and nail abnormalities.

It is important to be vigilant for classic nail abnormalities like koilonychia to help clinch the diagnosis.

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