Multiple Habit-Induced Nail Problems Including Diffuse Brownish Chromonychia

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Dear Editor:

Chromonychia is the discoloration of the nail plate or subungual soft tissue with various causes¹. Exogenous causes such as occupational agents, trauma or infection may provoke nail color change, and rarely, overproduction or storage of endogenous pigments is also responsible for chromonychia^{1,2}. External dye stains the nail plate along the proximal fold, whereas endogenous pigmentation follows the shape of the lunula². Melanonychia is a specific type of chromonychia with brown or black pigmentation¹. Several reports have indicated that nail associated habits induce longitudinal melanonychia³⁻⁵, but none mentioned diffuse brownish chromonychia. Herein, we report a case of brownish chromonychia occurred with other nail deformities because of nail irritating habits. This study is approved by Catholic Medical Center (IRB No. SC13RISI0039).

A 15-year-old girl presented with diffuse dark brown discoloration of the fingernails for several months. The patient had no remarkable medical or family history. The physical examination revealed brownish chromonychia, periungual erythema and swelling, cuticle loss and nail pitting on the left 3rd, 4th, and 5th fingernails (Fig. 1A). Onychoschizia and onycholysis with irregular grooves on the left thumbnail were also detected (Fig. 1C). Moreover,

her right 4th fingernail had a longitudinal depression on its medial side (Fig. 2A). She said that she had been poking under the proximal nail folds of the left 3rd, 4th, and 5th fingers with the lead of a mechanical pencil. She had been sucking and biting the left thumbnail and had a peculiar pencil grip that was supported by the right 4th fingernail (Fig. 2B).

Because the patient's nail trauma history and development of melanonychia presented sequentially, we considered a strong association between them and delayed nail matrix biopsy. We educated her on discontinuing all habits and applying diflucortolone valerate 0.3% ointment to the periungual area of the affected fingernails regularly. In 4 months of follow-up, the fingernails gradually restored their natural shapes and colors (Fig. 1B, D).

Because of the diffuse brownish pigmentation along the proximal nail fold and obvious improvement after stopping habit, we presumed that the lead had stained the nail plate.

Repetitive mechanical stimulation on the nail matrix such as picking, chewing, breaking or rubbing would fluctuate the nail formation and make nail thickness irregular^{1,3}. These habitual behaviors are easily seen in children, as 60% of children and 45% of teenagers are indulged in onychophagia¹.

In our case, we observed diffuse brownish chromonychia with other forms of nail deformities caused solely by her habits. Observing multiple nail problems in different fingers of a patient simultaneously is notable, because habit induced nail problem usually occurs as one type at a time. Fortunately, she managed to stop all habits so that the disfigurements improved. Occasionally, children with onychophagia may need psychiatric consultation for the obsessive-compulsive features and treatment with a selective serotonin reuptake inhibitor¹.

Thorough history taking and physical examination would be enough for diagnosis in children with nail irritating

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Fig. 1. (A) Brown chromonychia on the left 3rd, 4th, and 5th fingernails. (B) After 4 months of treatment. (C) Onychoschizia and onycholysis with irregular grooves on the left thumbnail. (D) Left thumbnail fully recovered after 4 months of treatment.

Fig. 2. (A) A longitudinal groove on the right 4th fingernail. (B) Probably the effect of a peculiar pencil grip.

behaviors, avoiding unnecessary invasive examination including nail matrix biopsy^{4,5}.

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