

## A Case of Longitudinal Melanonychia Secondary to Hydroxyurea

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Dear Editor,

Melanonychia commonly appears as a longitudinal band, starting from the matrix and extending to the tip of the nail plate. Less often it presents a transverse band or may involve whole nail plate.<sup>1,2</sup> Cutaneous side effects of hydroxyurea are described in 13% of patients including increased pigmentation, hyperkeratosis, skin atrophy, xerosis, lichenoid eruptions, palmar and plantar keratoderma, cutaneous vasculitis, alopecia, melanonychia. Rarely, mucosal changes such as oral ulcers, stomatitis, hyperpigmentation of the oropharyngeal mucosa have been reported.<sup>3-5</sup> Herein, a patient is reported who developed longitudinal melanonychia and periungual hyperpigmentation on his finger- and toenails several months after initiation of hydroxyurea therapy.

A 57-year-old male was first referred to plastic surgery clinic for possibility of melanoma. And then, he was sent to our dermatology outpatient clinic with a 4 week history of progressive hyperpigmentation of his nails. He first noted the color changes in fingernails 5 months after initiation of hydroxyurea therapy for myelofibrosis. On dermatological examination, we saw multiple longitudinal brownish-black bands arising from the nail matrix and extending to the distal edge of all nails. Additionally, the adjacent skin presented hyperpigmentation (Figure 1). Thickness and density of the nails examined normal and dermatoscopy showed a re-

gular distribution pattern of melanin pigment. Thorough examination of the rest integument did not reveal any hyperpigmentation. Mycological examination was negative on direct microscopy of nail specimens. Ultimately, diagnosis of hydroxyurea induced melanonychia was established concerning with his medical history.

Melanonychia can be as a result of melanocytic activation, or melanocytic hyperplasia; as in lentigo, nevi or melanoma. Common causes of longitudinal melanonychia due to melanocytic activation include racial melanonychia, inflammatory and traumatic nail disorders, systemic diseases and drugs.<sup>1-3</sup> In this case diagnosis based on the patient's medical history, negative mycological examination, dermatoscopic and clinical findings. Polydactylic, monochromic lesions with regular size and shapes were determinant.

Melanonychia is the most frequent pattern of nail discolorations induced by antineoplastic drugs including doxorubicin, cyclophosphamide and hydroxyurea. Hyperpigmentation of adjacent skin or diffuse pigmentation of skin may accompany with melanonychia. As in our case, longitudinal melanonychia and periungual hyperpigmentation, together, may be confused with Hutchinson's sign in malignant melanoma. Crucially, subungual malignant melanoma should be excluded in all cases of melanonychia.<sup>6-8</sup>



**Figure 1.** Longitudinal melanonychia in fingernails and toenails

Hydroxyurea is one of the main drugs used in myeloproliferative disorders. It has also antiretroviral properties and used in diseases such as AIDS. One mechanism of action is thought to be based on its reduction of production of deoxyribonucleotides via inhibition of the enzyme ribonucleotide reductase.<sup>9,10</sup> The exact mechanisms leading to activate melanocytes, have not been clarified yet. Toxicity impairing the nail bed or nail matrix, focal stimulation of nail-matrix, melanocytes, and photosensitization are possible causes.<sup>8</sup>

Our patient exhibited a most commonly seen pattern of melanonychia and also periungual hyperpigmentation. He continued to take hydroxyurea for myelofibrosis.

Cases of hydroxyurea-induced melanonychia are not frequent, however, clinicians have to consider hydroxyurea induced mucocutaneous side-effects and also inform their patients.

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