

Dermoscopic Features of Green Nail Syndrome Associated with Dermatophytosis and, Traumatic Onycholysis

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ABSTRACT

Green nail syndrome, also known as chloronychia, is characterized by greenish discoloration of the nail plate. The causative agent is *Pseudomonas aeruginosa*. Constant exposure to water, soaps, detergents and, mechanical trauma are the known risk factors. Nail dermoscopy is a useful non-invasive diagnostic tool in differential diagnosis of nail pigmentation. Here, we report dermoscopic features of nail *pseudomonas* infection associated with dermatophytosis and traumatic onycholysis in two different cases.

Keywords: dermoscopy, green nail, *pseudomonas*

INTRODUCTION

Pseudomonas aeruginosa is an opportunistic, gram negative bacillus that can cause a wide variety of infections ranging from folliculitis to serious hospital acquired infection (1). The differential diagnosis for nail *Pseudomonas* infection mainly includes onychomycosis, subungual melanoma, and exogenous pigmentation (2). Dermoscopy may enhance the diagnostic accuracy which is essential for proper management of the entity. It may also provide useful clues to the predisposing cause of *Pseudomonas* infection.

CASE REPORT/CASE PRESENTATION

Case 1: A 42-years-old male presented with a painless subungual discoloration on the great toe of his right foot. The patient reported that there was only white discoloration in the same area for about 2 years and the green color occurred in the last 4 months. (Figure 1a). The patient had no similar lesions elsewhere. Dermoscopic examination revealed distal white jagged edges, white longitudinal striae and superficial scaling (which are suggestive of dermatophyte infection) and, diffuse yellowish to green discoloration (Figure 1b). Microbiological examinations confirmed the presence of *Pseudomonas* infection and dermatophytosis. The patient treated with oral terbinafin (250 mg daily) and topical nadifloxacin (twice daily). After 2 months of treatment, a considerable improvement was observed.

Case 2: A 36-years-old female presented with a painless subungual discoloration on the middle finger of her left hand (Figure 2a). The patient had a previous history of mechanical trauma about six months ago. The green to black discoloration is reported to occurred in last 2 months. Dermoscopic examination showed distal white sharp linear edges suggestive of traumatic onycholysis and, a band of green to black discoloration (Figure 2b). Direct microscopic potassium hydroxide preparation failed to reveal any fungal element but microbiological examination confirmed the presence of *Pseudomonas* infection. The patient was started on topical nadifloxacin (twice daily) and after 2 months a remarkable regression of pigmentation was observed.

DISCUSSION

Nail dermoscopy, also known as onychoscopy, is a practical diagnostic tool increasingly used in the field of nail diseases. It has been demonstrated to be an effective and useful method in many nail disorders including infectious and pigmentary conditions. Onychoscopic examination offers many advantages. It not only enhances macroscopically visible features but also provide additional unique findings and clues which are not visible to the naked eye (3).

Nail discoloration, also known as chromonychia, may be caused by benign melanocytic lesions, melanoma, subungual hematoma,



Figure 1 a, b. Green discoloration on the great toe nail (a). Distal white jagged edges, white longitudinal streaks, superficial scaling and diffuse yellowish to green discoloration (b).

onychomycosis, exogen pigmentation and even argyria (3, 4). Fungal agents and *Pseudomonas aeruginosa* are the common infectious causes of nail discoloration (5). Nail involvement of *Pseudomonas aeruginosa* is known as the green nail syndrome. Dermoscopic features of green nail syndrome have rarely been a subject of studies. Various shades of yellow, brown, red, green, red and black can be seen on dermoscopic examination of *Pseudomonas* nail involvement (5, 6). Diffuse yellowish to green and, green to black discoloration were the observed color changes in our cases. Fungal melanonychia shows distinct dermoscopic features including the presence of irregular brown to bands and subungual keratosis (7). Figure 3a and 3b demonstrates fungal melanonychia for comparison purpose

Trauma and underlying fungal infection can precipitate *Pseudomonas* infection. Dermoscopic examination may also provide useful clues to these predisposing conditions. In this report, dermoscopic examination of the case 1 showed additional distal white jagged edge and white to yellow longitudinal streaks which are well described dermoscopic features of onychomycosis (8, 9). As for case 2, additional distal white linear sharp edge was observed which is a well known dermoscopic feature of traumatic onycholysis (8, 9).

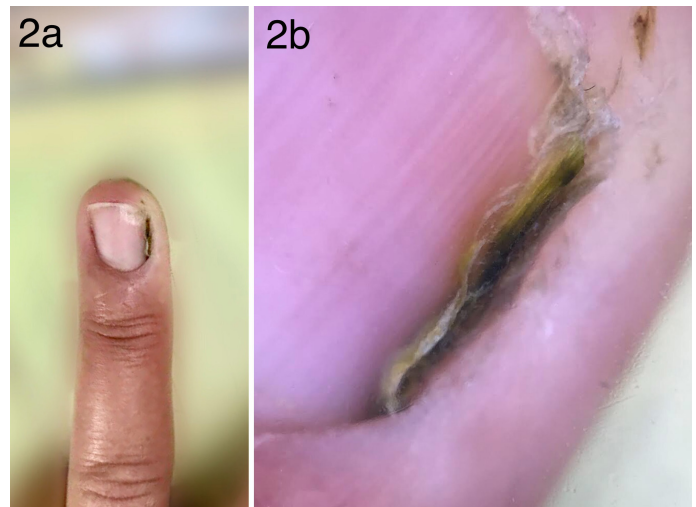


Figure 2 a, b. Green to black discoloration on the middle finger of left hand (a). Distal white sharp linear edges suggestive of traumatic onycholysis and, a band of green to black discoloration (b).



Figure 3 a, b. Fungal melanonychia clinically shows white to brown discoloration (a). Dermoscopy shows irregular white and brown bands, subungual hyperkeratosis and superficial transverse striate scaling (b).

In conclusion, dermoscopic examination may enhance diagnostic accuracy for *Pseudomonas* nail infection. On the other hand, understanding the predisposing factor of *Pseudomonas* infection by the aid of dermoscopy may also guide treatment leading more satisfactory outcomes.

Informed Consent: Patient

Peer-review: Externally peer-reviewed.

Author Contributions: Concept - OFE; Design - OFE; Supervision - OFE; Materials - OFE; Data Collection and/or Processing - OFE; Analysis and/or Interpretation - OFE; Literature Search - OFE; Writing Manuscript - OFE; Critical Review - OFE

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