

CASE 28

Patient: A 48-year-old Thai man from Bangkok.

Chief Complaint: Nail discoloration for 6 months.

Present Illness: He developed slow progressive greenish-black nail plate discoloration of 2nd, 3rd and 4th digit left hand for 6 months. He had no previous trauma or manicures.

Past History: No underlying disease
Occupation: government officer
Hobby: gardening

Dermatological Examination: Physical examination revealed >50% greenish-black discoloration of nail plate 2nd, 3rd and 4th digit on his left hand with mild erythematous swelling of proximal nail fold in 4th digit.



Diagnosis: Green nail syndrome

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Discussion:

In green nail syndrome (GNS), the greenish-black discoloration is caused by pyocyanin, a blue-green pigment produced by gram-negative bacterium *Pseudomonas aeruginosa*¹⁻². They cause a pigmentation that usually originates under the junction of the lateral and proximal nail folds or in the lateral nail groove and may eventually spread over most of the nail plate³.

Predisposing factors include onycholysis, chronic paronychia, nail trauma, prolonged exposure to water and contact of detergents and soap³⁻⁶. For these reasons, *Pseudomonas aeruginosa* involvement of the nail is commonly seen in housewives, barbers, and medical personnel. Recognition of this phenomenon is especially important in healthcare personnel because of the increase risk of spreading of the pathogen, *Pseudomonas aeruginosa* to highly susceptible patients who debilitated or immunocompromised².

Histopathology of the nail plate reveals bacteria on the surface or sometimes also the under surface³.

The diagnosis of GNS is usually clinical, and, if necessary, can be confirmed by gram stain and culture of exudate and nail fragments¹, although the fact that the latter is negative does not rule out the diagnosis as the greenish discoloration can be located at a distance from the infection, and persist for some time after healing. If the culture is negative, a test for solubility of the pigment can be carried out by immersing a sample of the affected nail in 1 ml of chloroform or distilled water. In the case of present or previous *Pseudomonas aeruginosa* infection, the liquid turns a bluish-green color in 24 hrs. On the other hand, if we are dealing with *Candida* or *Aspergillus* infection, the test will be negative. This

test will also be negative in the case of *Pseudomonas* species that do not produce pigment².

The differential diagnosis of Green nail syndrome include subungual hematoma, melanocytic nevus, melanoma, *Proteus*, *Candida*, and *Aspergillus* infection²⁻³.

Treatment involves the avoidance of predisposing factors, clipping back of the nail, and the use of topical solution of fluoroquinolones, aminoglycosides or 2.5-5% acetic acid two or three times a day for 1-4 months. Administration of systemic antibiotics is unnecessary^{1-2, 6}.

Our patient was treated with topical 3% acetic acid twice daily.

References

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