Nail discoloration in a child with brucellosis

Soner Sertan Kara, Nurhan Döner Aktaş[1]

Departments of Pediatric Infectious Diseases and [1]Dermatology, Erzurum Regional Training and Research Hospital, Erzurum, Turkey

ABSTRACT

Brucellosis is a frequent zoonotic disease. During the course of brucellosis treatment, antibiotics can result in side effects. Nail discoloration due to doxycycline is a rare, benign, and self-limited presentation. It is important to recognize it in patients on antibiotic therapy in order to prevent overdiagnosis and unnecessary laboratory tests. Here, a case of an 11-year-old boy with nail discoloration during brucellosis treatment was presented.

Key words: Brucellosis, doxycycline, nail discoloration

An 11-year-old boy presented with fever, malaise, and arthralgia on knees for 2 months. He was living in a village and helping his family with farming and animal husbandry. Physical examination and laboratory investigations including hematological and biochemical tests revealed unremarkable findings. Brucellosis was diagnosed with serology and blood culture positivity. He was started on peroral rifampicin (1 mg × 600 mg) and doxycycline (2 mg × 100 mg) treatments. After 10 days, he discovered painless, black pigmentation on his fingernails. He was admitted again at the end of 45 days of treatment. He was asymptomatic except for the black discoloration on his fingernails. Onycholysis was not present and his skin, oral mucosa, teeth, and toenails were normal [Figure 1]. After the cessation of antibiotic treatment, nail discoloration disappeared 2 months later [Figure 2]. Doxycycline, a tetracycline-derived antibiotic, is one of the main drugs for brucellosis. All tetracyclines rarely chelate calcium ions in nails, and concurrent sunlight exposure causes the discoloration of skin and nails.[1] It is a phototoxic reaction that results from mitochondrial damage due to free oxygen radicals, occurs particularly in the summer months, and mostly affects body parts with greater sun exposure, as in our case.[2] Direct exposure to sunlight, more ultraviolet B (UVB) light penetration due to convex structure, being more prone to traumas, and relatively scarce melanin pigment of fingernails

Figure 1: Black pigmentation on fingernails with doxycycline treatment. There is no onycholysis and toenails appear normal

Address for correspondence:
Dr. Soner Sertan Kara, Department of Pediatric Infectious Diseases, Erzurum Regional Training and Research Hospital, Palandöken, Erzurum - 25280, Turkey.
E-mail: drsoner@yahoo.com

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Figure 2: The disappearance of black pigmentation on fingernails after cessation of doxycycline treatment and nail regeneration

make them more vulnerable to phototoxic damage.[3] Doses over 150 mg/day, as in our case, has been proposed to be associated with the increased degree of phototoxicity.[4] Nail discoloration is a rare and self-limited presentation. It disappears with the cessation of treatment and regeneration of nails after clipping. Knowing this would prevent overdiagnosis and unnecessary tests in patients with brucellosis treatment. It might be necessary to shorten sunlight exposure during the course of doxycycline therapy.

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Conflicts of interest

There are no conflicts of interest.

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