An itchy rash on the fingertips

A case study

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A previously healthy woman, aged 37 years, presented with a 4-week history of pruritic periungual rash and subungual pain. Physical examination revealed scaly, fissured, erythematous plaques around her fingernails (*Figure 1*). Underneath the acrylic artificial nails that she had been wearing for 6 weeks, onycholysis and nail bed hyperkeratosis were evident. Oral terbinafine and amorolfine nail polish were prescribed by the general practitioner but had no clinical benefit.

Question 1

What is the most likely diagnosis?

Question 2

How would you diagnose this disease?

Question 3

Given the clinical presentation, what other diseases should be considered?

Question4

What are the treatment options?

Answer 1

The most likely diagnosis is allergic contact dermatitis (ACD) caused by acrylates present in the artificial nails. The frequency of this diagnosis is steadily increasing, although the exact prevalence in individuals who use artificial nails is unknown.[1] There are several forms of artificial nails, including sculptured nails, photobonded nails and preformed nails, which usually contain or are glued on with acrylates. They belong to the class of plastic materials and synthetic resins that are well-known skin sensitisers. The delayed hypersensitivity reaction later develops into a contact dermatitis in the exposed areas. Skin lesions, itching and discomfort can occur after new exposure.[2] It should be noted that ACD to acrylates may occur not only in people who use artificial nails, but also in professional nail beauticians or manicurists (occupational).[1]

Answer 2

The diagnosis of ACD to acrylates in artificial nails is usually suspected by clinical presentation, although it should be confirmed with epicutaneous patch testing. This test is still regarded as the best method for the diagnosis of ACD and helps to identify which substances may be causing the reaction in the patient.[3] It is a safe and well-tolerated method that increases the probability of a correct diagnosis, reduces costs of treatment and increases the chances for complete remisson.[3–5] A comprehensive history and careful physical examination are essential to determine the need for patch testing and selection of substances to be tested. Skin reactions to artificial nails in sensitised patients include contact dermatitis,

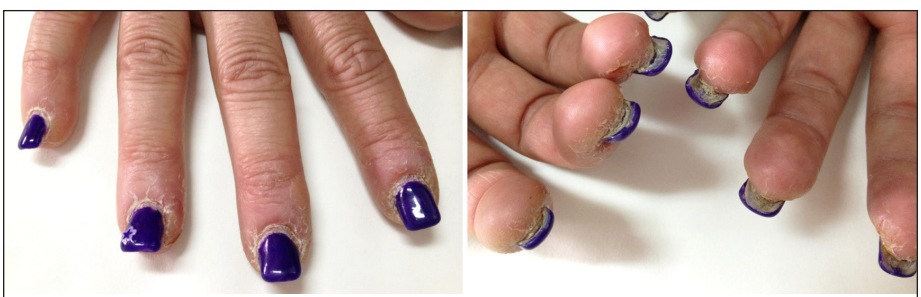

Figure 1. Clinical appearance of the patient's nails

paronychia, onychodystrophy, onycholysis, nail bed hyperkeratosis, paronychial and subungual pain, and peripheral paresthesias.[1,6–10] Although the lesions are usually confined to the area of contact, they can also arise in other sites, such as the face, eyelids and neck, through nail contact with the skin in those areas, or exposure to organic vapours and airborne dust.[6,10] Asthma has also been associated with the application of artificial nails.[11]

In our patient, patch testing with the Portuguese standard series and acrylates series revealed positive reactions to different types of acrylates present in artificial nails.

Answer 3

The two main differential diagnoses to be considered in this case are onychomycosis and psoriasis. Curiously, the former can occur simultaneously as the lateral portions of the nail that become exposed are more likely to develop bacterial or fungal infections.[1] Manifestations of nail psoriasis include pitting, onycholysis, oil drop discoloration, subungual hyperkeratosis, splinter haemorrhages, transverse furrows, crumbling nail plate and onychomadesis.[12] Isolated nail involvement is rare in psoriatic patients. Nail disease is usually associated with the typical well-demarcated scaly, erythematous plaques, which can present anywhere on the skin.

Answer 4

As with any allergy, avoidance of contact with the allergen is essential. Therefore, removal of acrylic nails is mandatory. Careful local hygiene should be recommended in order to prevent infection. Management of contact dermatitis may include treatment with topical corticosteroids and emollients. Antihistamines, especially those with sedative properties, are frequently used to control itch and to provide some relief of symptoms.[2,13]

Case follow-up

Our patient was advised to remove the acrylic artificial nails and was treated with topical betamethasone dipropionate cream, with significant improvement after 1 week. Her nails grew out normally from the base and after several months had fully recovered.

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