

CONTACT POINT

Onychomadesis secondary to allergic contact dermatitis to tioconazole contained in a nail lacquer: Description of three cases

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Onychomadesis is the proximal separation of the nail plate from the matrix, caused by a temporary arrest of nail growth.¹ Common aetiological factors include nail trauma, systemic drugs, infections, and some autoimmune diseases.¹ To the best of our knowledge, only 1 case of an association between onychomadesis and allergic contact dermatitis (ACD) has been reported in the literature.² We describe 3 cases of onychomadesis associated with ACD, caused by tioconazole contained in a nail lacquer.

CASE REPORTS

Two women aged 24 and 31 years respectively, and a 25-year-old man presented to our department with perionyxis, itchy vesicles, and a purulent exudate from their big toes. The left big toe was affected in the older woman (Figure 1A) and the right big toe in the man (Figure 1B), while both big toes were affected in the younger woman (Figure 1C,D). The skin lesions appeared 1 month ago in the older woman and a few days ago in the other 2 patients. All 3 patients had been applying, for a period ranging from a few weeks to 3 months, a nail lacquer (Trosyd) containing tioconazole and undecylenic acid to treat what they suspected to be a fungal nail infection; no dermatological visit nor mycological examination had been performed.

In all 3 patients, the treatment was immediately stopped and the dermatitis resolved within 2 weeks with the use of topical clobetasol dipropionate (twice daily) and oral amoxicillin/clavulanic acid

(875/125 mg, twice daily for 7 days). Six weeks after the resolution of acute dermatitis, patch tests were performed with the SIDAPA (Società Italiana Dermatologia Allergologica Professionale Ambientale) baseline series (Euromedical, Calolziocorte Lecco, Italy) and the nail lacquer "as is." The patch tests were applied on the back and left in occlusion for 2 days, using the AI Test (Euromedical) on Scanpor Tape (Norgesplaster, Vennesla, Norway). Readings were performed on day (D) 2, D4, and D7³ and showed a positive reaction to the nail lacquer "as is" in all the patients. The younger woman was also positive to methylisothiazolinone. Subsequently, patch tests with all the nail lacquer ingredients were performed and all the patients were positive to tioconazole 1.0% eth. Ten healthy subjects were patch tested with tioconazole 1% eth. yielding negative results. Of note, at follow-up within 6 weeks of the resolution of the acute dermatitis, all patients showed onychomadesis of the previously involved big toes (Figure 2A-C).

DISCUSSION

We describe 3 cases of onychomadesis caused by ACD to tioconazole. Single-finger onychomadesis is most frequently caused by local trauma to the nail bed. When multiple fingers are involved, known possible causes include hand-foot-mouth disease, varicella, scarlet fever, fungal infections, some systemic drugs (azithromycin, carbamazepine, chemotherapeutic agents, lithium, valproic acid), lichen planus, Kawasaki disease, Stevens-Johnson syndrome, toxic



FIGURE 1 Acute allergic reaction to a nail lacquer in (A) the 31-year-old female, (B) the 25-year-old male and (C,D) the 24-year-old female



FIGURE 2 Onychomadesis following the resolution of the acute dermatitis in (A) the 31-year-old female, (B) the 25-year-old male and (C) the 24-year-old female

epidermal necrolysis, pemphigus vulgaris, and periungual dermatitis. The pathogenic mechanism is still unclear.^{1,4} The only report of onychomadesis associated with ACD was published in 2017 by Yamaguchi et al.² In that case, ACD was caused by a 10% topical solution of efinaconazole, a triazole antifungal used to treat tinea unguium.² Allergy to tioconazole was repeatedly reported in the literature in the years between 1989 and 1996, but showed a decreasing trend thereafter. The most recent paper in this field describes a series of 8 cases of ACD to tioconazole nail solutions.⁵ Generally, most published cases of allergy to topical tioconazole were related to the use of medicated nail solutions, but onychomadesis was never described in these patients. One of our patients also showed a positive reaction to methylisothiazolinone, of no apparent clinical relevance. A recent paper by Stingeni et al.⁶ showed, based on computerized conformational analysis, that the numbers and locations of positive and/or negative polarized areas of methylisothiazolinone and tioconazole are similar, suggesting a possible cross-reactivity between these molecules. As recently stated by Pérez-Mesonero et al.,⁵ contact dermatitis caused by tioconazole is still a concern and the lack of publications on

the topic does not necessarily mean that it no longer exists. Indeed, tioconazole is frequently used as a self-medication for the treatment of suspected onychomycosis, sometimes without medical advice. ACD (and subsequent onychomadesis) to tioconazole might be underestimated, because patients might consider allergic reactions to be irritant or infective and/or are not reporting use of the topical drug to their physician.

CONFLICT OF INTERESTS

The authors declare no conflicts of interest.

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REFERENCES

1. Salgado F, Handler MZ, Schwartz RA. Shedding light on onychomadesis. *Cutis*. 2017;99(1):33-36.

2. Yamaguchi Y, Hoshina D, Furuya K. Onychomadesis caused by efinaconazole. *Contact Dermatitis*. 2017;76(1):57-58.
3. Stingeni L, Bianchi L, Hansel K, et al. Italian Guidelines in Patch Testing - adapted from the European Society of Contact Dermatitis (ESCD). *G Ital Dermatol Venereol*. 2019;154(3):227-253.
4. Hardin J, Haber RM. Onychomadesis: literature review. *Br J Dermatol*. 2015;172(3):592-596.
5. Pérez-Mesonero R, Schneller-Pavelescu L, Ochando-Ibernón G, et al. Is tioconazole contact dermatitis still a concern? Bringing allergic contact dermatitis caused by topical tioconazole back into the spotlight. *Contact Dermatitis*. 2019;80(3):168-169.
6. Stingeni L, Rigano L, Lionetti N, et al. Sensitivity to imidazoles/nitroimidazoles in subjects sensitized to methylchloroisothiazolinone/

methylisothiazolinone: a simple coincidence? *Contact Dermatitis*. 2019;80(3):181-183.

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