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Novitas in antiquo: magnetic nails

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Allergy to cosmetics is frequent and often misdiagnosed, and this problem is exacerbated by the continuous introduction of new technologies/formulations.

Case Report

A 26 years old asthmatic female student, presented with a 6 months history of recurrent, moderately itchy eczematous lesions to the left mandibular angle and the palmar side of the left metacarpal area. Patch test were undertaken with the Italian Society of Allergologic, Professional and Environmental Dermatology (SIDAPA) baseline and cosmetics series [FIRMA, Florence, Italy, in Haye's chambers (Haye's Service BV, Alphen, The Netherlands)]. The results at D2 and D4 were positive (+ + +) for nickel sulfate and cobalt chloride. Further questioning revealed the use, in the previous 7–8 months, of 'magnetic nail polish', which is claimed to induce peculiar optical characteristics to nails when they are exposed, soon after application, to magnetic fields. Also, the patient reported that, when studying, she used to rest her head on left hand, closed in a fist or in a posture like that of the statue 'Le Penseur', with the nails touching the left mandibular angle. Searching for patent applications concerning magnetic polish, we found that magnetic particles can represent 0.1–90% of the weight and can include nickel and cobalt (1). A second patch test was undertaken with a series of allergens contained in nail polishes (FIRMA), with negative results, and with our patient's polish, with positive results (+ + +) at D2 and D4. As components were not reported on the package, we performed atomic absorption spectroscopy [with a model

analyst 800 spectrometer (Perkin-Elmer, Shelton, CT, USA) with a Zeeman background correction system and an electro-thermal atomizer with a transversely heated graphite tube] to assess the concentrations of nickel and cobalt in the polish, which were 118 and 94 ppm, respectively, beyond the safe levels (1–5 ppm) suggested by the literature (2).

Standard therapy and avoidance of contact with the magnetic polish, nickel and cobalt led to complete healing in 4 weeks. At 6-month follow-up, the patient reported that the use – against recommendations – of ordinary nail polishes or nickel-free and cobalt-free 'magnetic' polishes had not caused any adverse effects.

Discussion

This case represents an example of a new product/technology that causes contact with known allergens in a previously unreported way (hence *novitas in antiquo*): the clinical history, patch test results and laboratory data suggest that the significant quantities of nickel and cobalt in the magnetic polish caused the manifestations observed. The clinical relevance of this case is linked not only to its peculiarity, but also to possible future scenarios: the use of magnetic polish is apparently a fashion trend, and, as declared in the patent application (1), the same technology can be used for other products (foundations, makeup, lipsticks, and hair cosmetics).

A search that we made revealed that major brands of magnetic polishes do not contain nickel and cobalt; rather, Fe₃O₄ or other metals/alloys, which have better magnetic and cosmetic properties and a lower sensitizing potential, are used. However, the increase in online shopping allows small companies to produce and sell worldwide, almost without controls, low-cost products whose composition is often unknown and cannot be easily obtained, because of unavailability (as in our case) or lack of cooperation of manufacturers and/or vendors, who are not always

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compliant with laws and regulations. Information and stricter surveillance by authorities and medical societies

seem to be advisable to avoid a possible outbreak of 'magnetic cosmetics' allergy in the near future.

References

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