

Airborne allergic contact dermatitis by proxy caused by ‘poppers’.

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‘Poppers’ (alkyl nitrites) are drugs used for recreational (sexual) purposes. They are available as strongly scented and very volatile liquids, contained in small bottles, and are used through nasal inhalation. We report a case of cutaneous sensitization to isobutyl nitrite-containing poppers with subsequent elicitation of dermatitis through airborne exposure by proxy.

Case report

A 42-year-old man presented with a history of relapses of eczematous, edematous and sometimes crusted dermatitis of his upper lip and nostrils a few hours following the inhalation of isobutyl nitrite-containing poppers (Jungle Juice Platinum). Although irritant contact dermatitis (ICD) was initially considered most likely (1), history revealed he had also suffered from flare-ups of the same infra-nasal dermatitis a few hours after he had been present in an environment where others, but not himself, had been using the same and related types of poppers (**Figure 1**). As the latter suggested airborne allergic contact dermatitis (ACD) by proxy, patch tests were performed with the Belgian baseline series and a fragrance series, both from Chemotechnique Diagnostics (Vellinge, Sweden), and with his own poppers ($\geq 98\%$ purity) diluted at 2% aq., the latter applied on the upper arm. All patch test preparations were mounted on Allergeaze patch test chambers (SmartPractice, Calgary, Canada), and occluded for 2 days with Fixomull stretch (BSN medical, Hamburg Germany). Readings on day (D) 2

and D4, performed according to ESCD guidelines, showed a ++ reaction only to his own poppers 2% aq. (**Figure 2**). The patient refrained from the further use of poppers, and a topical treatment with pimecrolimus cream was effective in preventing further relapses of dermatitis by proxy.

Discussion

Many poppers contain amyl nitrite (syn.pentyl nitrite), (iso)butyl nitrite or (iso)propyl nitrite and, notwithstanding legal restrictions, they are easily available through online webshops as “room odorizers” or “leather polish” (1). Because of their vasodilating effect, they may cause several side-effects, such as hypotension, tachycardia, headache and nausea. Moreover, ingestion of poppers may result in (potentially life-threatening) methemoglobinaemia (2). The most frequently reported side-effect is potentially irreversible ocular damage (foveal maculopathy)(3). Alkyl nitrites are also toxic to the skin, due to the nitration of aromatic amino acids (xanthoprotein reaction)(1), hence they often provoke ICD. Although the earliest report of ICD from alkyl nitrites concerned hand dermatitis due to sodium nitrite in an etching agent (4), most cases nowadays are due to poppers (5-9). Patients, mostly males, usually present with facial ICD (mainly of the nose and lips), although extra-facial lesions, often by transfer, may also occur (e.g. thoracic region, genitals, legs, feet), occasionally accompanied by lymphadenopathy (1).

Although alkyl nitrites may also induce cutaneous sensitization, only one previous patch-test proven case of ACD from poppers (amyl nitrite) has been published, concerning a male patient with facial ACD affecting his nasal orifices, cheeks and chin, together with lesions on his penis and scrotum (6). Patch tests, as in the current case, were strongly positive to his own poppers 2% aq.; amyl nitrite 2% in liquid paraffin was equally positive in this patient, but negative in 28 controls. We report our case to confirm that poppers may indeed, besides ICD, also cause (secondary) cutaneous sensitization, and that the latter may lead to airborne ACD by proxy. As illustrated, this might then be managed by using topical immunomodulators, a strategy which, occasionally, may also alleviate relapses of airborne ACD from isothiazolinone-containing paints (10).

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Figure legends

Figure 1: Airborne allergic contact dermatitis ‘by proxy’ affecting the nostrils and upper lip, caused by isobutyl nitrite-containing ‘poppers’.

Figure 2: Positive patch test (++), on day 2, to isobutyl nitrite-containing ‘poppers’ 2% aq. Note the spreading reaction outside the patch test chamber, suggesting allergic sensitization.



COD_13718_poppers-Fig1.jpg



COD_13718_Fig2-poppers.jpg