

A case of allergic finger and facial contact dermatitis induced by cigarette smoking

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Allergic contact dermatitis (ACD) from cigarettes, especially airborne contact dermatitis, in smokers has been rarely reported.^{1,2} We report the first case of ACD on the fingers induced by direct contact with cigarettes, accompanied by facial airborne contact dermatitis induced by cigarette smoke.

CASE REPORT

A 54-year-old man presented with a 3-year history of itchy erythema and vesicles on his second and third fingers (Figure 1A). The skin symptoms gradually worsened despite topical corticosteroid treatment. A few months before the visit, the patient noticed two lines of itchy erythema on his upper lip, where his cigarette smoke drifted (Figure 1B). He had no other medical history. He had smoked 40 cigarettes per day for 30 years. Patch tests with the tobacco leaves and components of his unsmoked and smoked cigarettes were performed, alongside the Japanese baseline series recommended by the Japanese Society for Dermatoallergy and Contact Dermatitis, and a metal series. Readings were performed on day (D) 2 and D3, according to the criteria of the International Contact Dermatitis Research Group. Positive reactions to unsmoked and smoked tobacco leaves and the filter (D2: +; D3: +) which had been separated from his cigarettes (Winston XS Caster One 100's Box; Japan Tobacco, Tokyo) were observed (Figure 1C-E). The reaction in the patch test with smoked leaves (D2: ++; D3: ++) was much stronger than that with unsmoked leaves (D2: ?+; D3: +).

The patch test results indicated that tobacco leaves, which induced a stronger reaction after cigarette smoking, might have been a causative agent of his ACD. Additional patch tests with the typical components and additives, such as nicotine (10% pet., 5%

pet., and 10% aq.; Wako Pure Chemical Industries, Richmond, Virginia, USA), a Nicotinell patch (17.5 mg of nicotine/cm², Novartis International, Basel, Switzerland), and vanilla beans were negative. Therefore, the causative allergen of ACD in this case might have been other components, including tar. The patient was diagnosed with finger ACD caused by tobacco leaves and facial airborne contact dermatitis due to tobacco smoke. After the diagnosis of ACD, he quit smoking and applied the same steroid ointment on his fingers, resulting in an improvement of the eruptions on his fingers 1 month later. Interestingly, the eruption on his lip disappeared without any ointment treatment a few weeks after smoking cessation, suggesting that the facial eruption was airborne contact dermatitis due to cigarette smoke.

DISCUSSION

To date, 10 cases of ACD due to cigarette smoking have been reported. Two of these cases were diagnosed with airborne contact dermatitis.^{1,2} It is likely that in our patient the eruptions on the fingers were induced by direct contact with cigarettes, while the facial eruptions, especially two lines of brownish pigmentation on and above the upper lip, might represent airborne contact dermatitis due to smoke vapor.^{1,2} In our case, symptoms of ACD on the fingers preceded slight erythema on the upper lip. The previous cases of airborne contact dermatitis due to cigarette smoke had a 10-month and 7-year history of pigmented eruption, respectively, whereas our case developed itchy erythema, which was improved without pigmentation after quitting smoking. Therefore, early diagnosis may prevent the pigmented type of airborne contact dermatitis. In conclusion, in smokers presenting with a refractory itchy eruption on both the fingers and face,

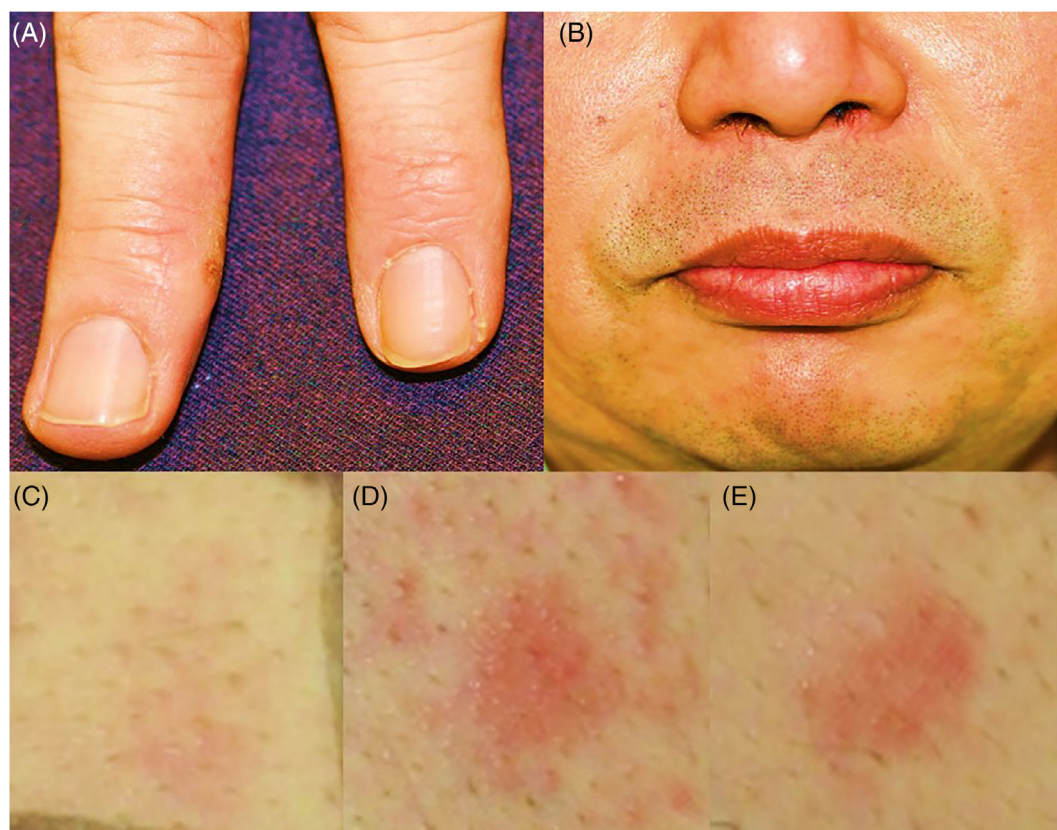


FIGURE 1 Clinical features of the patient. (A) Vesicles and erythema on the right second and third fingers. (B) Slight erythema on and above the upper lip. Skin reactions to patch tests with (C) the tobacco leaves before smoking (day [D] 3: +), (D) the tobacco leaves after smoking (D3, ++), and (E) the filter of his cigarette after smoking (D3: +)

especially the upper lip, ACD due to direct contact with cigarettes and airborne contact dermatitis due to cigarette smoke should be considered.

CONFLICT OF INTEREST

The authors have declared no conflict of interest.

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