

CONTACT POINT

Severe contact dermatitis caused by urushiol in Japanese lacquer

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Urushiol is a well-known, potent contact allergen that is present in many plants of the genus *Toxicodendron*, including poison ivy, poison oak, and the lacquer tree. In Europe, contact dermatitis caused by urushiol is rare,^{1,2} and sensitization can usually be linked to previous contact to poison oak or poison ivy in North America.³ In Asia, contact dermatitis caused by components of lacquer trees is common,⁴ including in Japan, where most traditional craftsmen working with lacquer have experienced contact dermatitis caused by urushiol-containing products.^{5–7}

CASE REPORT

A 35-year-old male Caucasian patient was admitted to our department as an emergency, presenting with an oedematous maculopapular

rash on the right thigh and both forearms, and with disseminated erythematous lesions and vesicles all over the body (Figure 1A,B). He was otherwise healthy, did not use any medications, and had no history of allergies. The personal history showed that, as a hobby, he produced Japanese lacquerware, and he reported that the skin lesions started to develop after he used a Japanese stain to lacquer wooden plates. He had started working with Japanese lacquer 2 years previously. The clinical picture was suggestive of allergic contact dermatitis, and investigations into the type of stain showed that it was a traditional Japanese lacquer that is commonly used for crafts by artists, and that contains >60% urushiol (Figure 1C).

Because of the severe symptoms, the patient was hospitalized, and received topical corticosteroids and a short course of systemic corticosteroids, after which the symptoms rapidly improved. On the

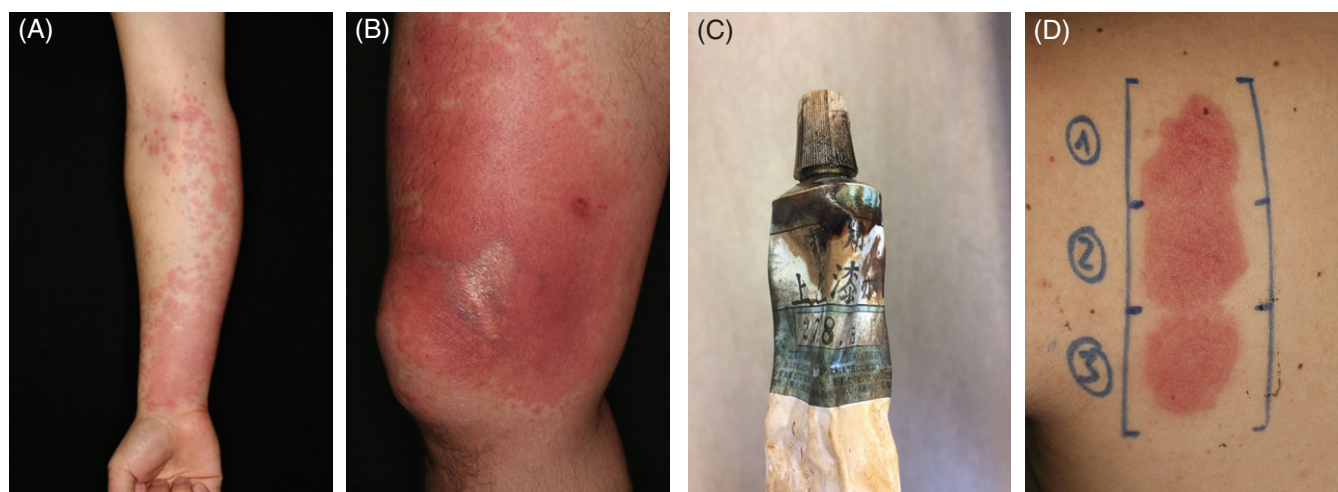


FIGURE 1 Severe allergic contact dermatitis caused by urushiol-containing lacquer. (A) and (B), Oedematous maculopapular rash on the right forearm and the right thigh after the patient had been working with Japanese lacquer. (C), Tube of Japanese lacquer used by the patient (containing >60% urushiol). (D), Strong positive patch test reactions to lacquer (dilution of lacquer in pet. 1:1 [1, ++], 1:4 [2, ++], and 1:8 [3, ++]). Pet. used as a control caused no reaction

basis of the clinical picture, and the history of contact with the lacquer containing the highly potent contact allergen urushiol, we diagnosed allergic contact dermatitis caused by the lacquer.⁸ To confirm the diagnosis, patch testing was performed with dilutions of the patient's lacquer. Because of severe itching, the patient presented 12 hours after application of the patches at the emergency room, and the patches were removed. At this point, positive reactions were observed to the 1:1 and 1:4 dilutions in pet. Results were further assessed according to the ICDG scoring system 3 days after application, and showed an allergic crescendo reaction to the urushiol-containing product (Figure 1D).

DISCUSSION

We report here a case of severe allergic contact dermatitis caused by a Japanese lacquer containing a high concentration of urushiol (>60%). These lacquers are commonly used in traditional Japanese industrial art, and have caused many cases of contact allergy in Japanese lacquer craftsmen.⁶ To the best of our knowledge, this is the first case of urushiol-induced contact dermatitis due to the use of Japanese lacquer in Europe.

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Conflict of interest

The authors declare no potential conflict of interests.

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REFERENCES

1. Paulsen E, Christensen LP, Andersen KE. Dermatitis from common ivy (*Hedera helix* L. subsp. *helix*) in Europe: past, present, and future. *Contact Dermatitis*. 2010;62:201-209.
2. Walker SL, Lear JT, Beck MH. Toxicodendron dermatitis in the UK. *Int J Dermatol*. 2006;45:810-813.
3. Fölster-Hölst R, Hausen BM, Brasch J, Christophers E. [Contact allergy caused by poison ivy (*Toxicodendron* spp)]. *Hautarzt*. 2001;52:136-142.
4. Ma XM, Lu R, Miyakoshi T. Recent advances in research on lacquer allergy. *Allergol Int*. 2012;61:45-50.
5. Kawai K, Nakagawa M, Kawai K, Liew FM, Yasuno H. Hyposensitization to urushiol among Japanese lacquer craftsmen: results of patch tests on students learning the art of lacquerware. *Contact Dermatitis*. 1991;25:290-295.
6. Kawai K, Nakagawa M, Kawai K, et al. Hyposensitization to urushiol among Japanese lacquer craftsmen. *Contact Dermatitis*. 1991;24:146-147.
7. Osamura K, Nakada T. Widespread contact dermatitis caused by urushiol in kintsugi. *Contact Dermatitis*. 2011;65:361-362.
8. Zhai H, Chang YC, Singh M, Maibach HI. Patch testing versus history in poison ivy/oak dermatitis. *Contact Dermatitis*. 1997;36:226.

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