Henna Tattoo: Temporary or Permanent?

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To the Editor: Henna tattoo has become popular and is increasingly reported as a cause of allergic skin reactions. Three cases of contact dermatitis caused by henna tattoos in China have been described.

Three children got their first temporary black henna tattoo done together while on holiday in Thailand in February 2017. Two of them were twins aged 9 years, and the third one was a girl aged 8 years. A week later, both the boys developed a pruritic vesicular reaction in the area of the tattoo. Their tattoos became hot, red, and raised. Bullae with clear yellow discharge and golden crusting were present on the erythematous plaque well-circumscribed within the tattoo patterns on their forearms [Figure 1a]. Almost at the same time, the girl developed itching and irritation in the area of the tattoo, and it became red [Figure 1b]. She was not as serious as the two boys. The three children and their parents had no history of atopy. Their systemic physical examination was normal. Allergic contact dermatitis caused by black henna tattoo was diagnosed based on the clinical findings. The two boys were treated with oral prednisone and loratadine, and topical antibiotic ointment. The girl was treated with oral loratadine and topical antibiotic ointment. Ten days later, the lesions of the two boys had already crusted; however, the girl reported a recurrence of itching and vesicle lesions in the area of the tattoo [Figure 1c]. A supplementary of topical halometasone was given to the girl. One month later, a scar was left in the area of the tattoo, but for some serious cases, lesions remote from the tattoo can also be presented. Long-term effects can include hyperpigmentation, hypopigmentation, hypertrichosis, or keloid scarring. A patch test to diagnose PPD sensitization is necessary for these patients to protect them from exposure to PPD and related compounds in the future. In a review of 48 reported cases of patients with allergic contact dermatitis to temporary henna tattoos, all the 43 cases patch tested were positive to PPD.[1]

A previous study found that henna leaves contained 1.85–1.87% of lawsone. Only one of the three preparations used by tattoo artists contained lawsone (0.21–0.35%), and all three were adulterated with PPD (1–64%).[1] Another study found that 25 black henna tattoo samples with PPD levels varying between 3.37% and 51.6% were sold in Turkey. Moreover, heavy metals such as Cr, Co, Ni, and Pb were also found in black henna tattoo samples.[2] The mixture of henna, PPD, and sometimes heavy metals are called “black henna.” PPD is a textile dye. This mixture of PPD is a known contact allergen and can evoke Type IV delayed hypersensitivity reaction based on its concentration and duration of exposure. Eruptions are typically seen 3–10 days after the application of black henna. The allergic reaction is usually presented in the localized area of the tattoo, but for some serious cases, lesions remote from the tattoo can also be presented. Long-term effects can include hyperpigmentation, hypopigmentation, hypertrichosis, or keloid scarring. A patch test to diagnose PPD sensitization is necessary for these patients to protect them from exposure to PPD and related compounds in the future. In a review of 48 reported cases of patients with allergic contact dermatitis to temporary henna tattoos, all the 43 cases patch tested were positive to PPD.[3]

Oral histamine and topical corticosteroid are often the main therapy. Topical and oral antibiotics may also be prescribed if signs of infection on the lesions exist.[1] If a patient is systemically unwell,
but not septic, oral steroids may be used. According to the mild symptom, the relatively mild treatment was given to the girl patient in the present report. However, her lesions got worse with time, indicating that short-term oral corticosteroid might be necessary for the allergy.

The temporary henna tattoo is getting popular for various reasons. However, it might cause severe allergic reactions and leave permanent scars on the body.

**Declaration of patient consent**
The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s)/patientia guardians has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients/patientia guardians understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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**Conflicts of interest**
There are no conflicts of interest.

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