



## Big trouble with temporary tattoos

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### 1. Case description

A 25 year old hairdresser was referred acutely following the development of pruritic pink papules and subsequently bullae, 24 h after the application of a temporary black henna tattoo to the dorsum of both of her hands by a family friend. In addition, she had fallen asleep for several hours with her hand resting under her chin and had noted redness and swelling within the pattern of her tattoo in this location also. She reported previously developing a pruritic, erythematous eruption over her hands following colouring her clients' hair and had started to use latex free gloves at work for this activity. On examination she had bullae confined to the distribution of the tattoos on her hands and fingers (Fig. 1) and a similar pattern of erythema and oedema over the right chin. This settled with the application of topical corticosteroids.

### 2. What is the diagnosis?

#### 2.1. Diagnosis

Answer: Acute allergic contact dermatitis to para-phenylenediamine (PPD) in black henna

Patch testing to the British Society of Cutaneous Allergy standard series and hairdresser series [1] revealed positive reactions to para-phenylenediamine (PPD) and also the structurally related phenylenediamines, toluene-2,5-diamine sulfate and nitro-*p*-phenylenediamine. These were all considered of current relevance for the patient given that PPD is commonly used in black henna and the other allergens are related to PPD and used in hair dye products. Previous sensitization to PPD likely occurred through her occupation.

Black henna is derived from natural red henna (obtained from the powdered leaf of *Lawsonia inermis*, which rarely causes allergic contact dermatitis), mixed with various substances, the most important of which is PPD [2]. PPD is used to give a darker and longer lasting colour and is a well documented strong sensitizer resulting in allergic skin reactions. Black henna is often applied by unregistered tattoo artists, and as such the exact constituents of the black henna are often unclear, with concentrations of PPD sometimes reaching 64%. Black henna has been shown to be a more significant risk factor for sensitization to PPD than hair dyes [3].

Following sensitization to PPD, patients can often find avoidance challenging due to its use in hair dyes; fur, leather and textile dyes; in the manufacture of rubbers and plastics; photography developing fluids and printing inks.

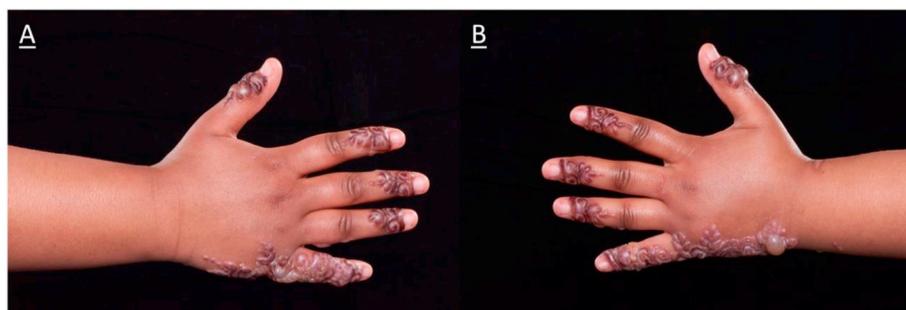


Fig. 1. A) Findings on clinical examination with bullae restricted to the pattern of the black henna tattoo on the right hand. B) Similar findings on the left hand.

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<https://doi.org/10.1016/j.ejim.2018.12.005>

Received 28 October 2018; Accepted 19 December 2018

Available online 11 January 2019

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### Conflicts of interest statement

The authors declare no conflicts of interest.

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