'Black Henna Tattoo': art or allergen?

Caroline Rogers,¹ David King,^{1,2} Lavleen Chadha,¹ Jaya Sujatha Gopal Kothandapani^{1,2}

¹Department of Paediatrics, Doncaster and Bassetlaw Hospitals NHS Trust, Worksop, UK

²University of Sheffield, Sheffield, UK

Correspondence to

Dr Jaya Sujatha Gopal Kothandapani, sujatha.gopal@sheffield.ac.uk

Accepted 21 February 2016

DESCRIPTION

A 10-year-old boy, who was previously fit and healthy, presented with a 3-week history of an erythematous, pruritic, papulovesicular rash on his right upper arm. The rash had started 4 days after application of a temporary black henna tattoo while he was on a holiday in Spain. Owing to suspected cellulitis, the patient had been trialled with two oral macrolide antibiotics, but there had been little improvement. Examination revealed an erythematous papulovesicular, partially crusted skin lesion. The eruption was pruritic and followed the outline of the tattoo (figure 1). The surrounding skin showed diffuse erythematous swelling and was hot and painful to touch. The child had no prior history of atopy, eczema or any allergic reactions. The rest of his general and systemic examination was normal.

Figure 1 Outline of black henna tattoo with surrounding soft tissue inflammation.

A diagnosis of type IV delayed hypersensitivity to black henna with surrounding cellulitis was

made. He was initially treated with intravenous clindamycin for 3 days followed by oral flucloxacillin for 4 days. Topical 2% fucidic acid plus 1% hydrocortisone acetate cream and emollients were applied for 7 days. An improvement was noted after 48 h with rapid resolution of surrounding inflammation. Residual hypopigmentation of the tattoo area was apparent after a week.

Learning points

- ▶ Paraphenylenediamine (PPD) is a textile dye that is commonly added to henna to blacken the pigment and speed up drying time. The combination together is called black henna.¹ PPD is a known contact allergen, and can evoke a type IV delayed hypersensitivity reaction based on its concentration and the duration of exposure. Eruptions are typically seen 3–10 days after the application of black henna.² The concentration of PPD in black henna tattoo inks can be as high as 30%.³
- ▶ Depending on the intensity of the inflammatory reaction, there can be scarring, keloid formation or depigmentation over the tattoo.
- ▶ Patients who develop an allergic reaction to PPD should be advised by clinicians to avoid any further exposure to PPD, which is contained in cosmetic products such as hair colouring and semipermanent eyebrow make-up.
- ▶ Skin tattoos with black henna should be avoided, especially during foreign travel, as this can make the tracing of the vendor and any subsequent public health management challenging.

Competing interests None declared.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

REFERENCES

- 1 Borrego L, Hernandez-Machin B, Gonzalez O, et al. Sensitization to para-phenylenediamine in a streetside temporary tattoo artisan. *Contact Dermatitis* 2005;52:288–9.
- 2 Sonnen G. Type IV hypersensitivity reaction to a temporary tattoo. *Proc (Bayl Univ Med Cent)* 2007;20:36–8.
- 3 Gawkrödger DJ, English JS. How safe is patch testing to PPD? *Br J Dermatol* 2006;154:1025–7.

CrossMark

To cite: Rogers C, King D, Chadha L, et al. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2015-212232

Copyright 2016 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit <http://group.bmj.com/group/rights-licensing/permissions>.
BMJ Case Report Fellows may re-use this article for personal use and teaching without any further permission.

Become a Fellow of BMJ Case Reports today and you can:

- ▶ Submit as many cases as you like
- ▶ Enjoy fast sympathetic peer review and rapid publication of accepted articles
- ▶ Access all the published articles
- ▶ Re-use any of the published material for personal use and teaching without further permission

For information on Institutional Fellowships contact consortiasales@bmjgroup.com

Visit casereports.bmj.com for more articles like this and to become a Fellow