

Severe eyelid allergic contact dermatitis secondary to eyelash tint: two case reports

Lareb Ali¹, Jonathan S. Foulds² and Sharizan Abdul Ghaffar¹

¹Department of Dermatology, Ninewells Hospital and Medical School, Dundee, DD1 9SY, UK and ²Department of Ophthalmology, Queen Margaret Hospital, Dunfermline KY12 0SU, UK

doi:10.1111/cod.12749

Key words: allergic contact dermatitis; eyelash dye; eyelash tint; PPD; *p*-phenylenediamine.

Eyelash tinting is an increasingly popular method used by women to make eyelashes darker. Dyes used to tint eyelashes often contain *p*-phenylenediamine (PPD), a strong sensitizer. Cases of allergic contact dermatitis caused by PPD usually result from exposure to products such as black henna tattoo or hair dyes (1), but those resulting from exposure to PPD-containing eyelash tints are less well reported. We wish to highlight two such cases.

Case Reports

The first patient, a 50-year-old female, presented with acute allergic conjunctivitis following tinting of her eyelashes. She described symptoms of purulent and watery discharge from both eyes. Clinical examination showed diffuse conjunctival hyperaemia in both eyes. Following this reaction, the patient experienced recurring

episodes of conjunctivitis and periorbital eczema. She also described an intermittently itchy scalp, as a result of professional hair dyeing and self-application of hair dye every 4–5 weeks. Patch testing was carried out with the British Society for Cutaneous Allergy (BSCA) baseline series (which includes PPD 1% pet. from Trolab, Smart Practice, Barsbüttel, Germany), facial and hairdressing series, and 12 of the patient's own products (2). Readings performed at day (D) 2 and D4 showed positive reactions to PPD (++) and nickel (+). The latter was of past relevance.

The second patient, a 17-year-old female, complained of bilateral swelling and erythema on both of her eyelids (Fig. 1). She described increasing pain and discharge from both eyes for 3 days, following eyelash tinting. This was the first time that she had used eyelash tint. However, she reported that she had previously suffered from a reaction following the application of hair dye. She also reported having had a reaction to black henna tattoo. Patch testing was performed with the BSCA baseline series (again including PPD 1% pet.) and a hairdressing series (2). Readings on D2 and D4 showed positive reactions to PPD (++)

Correspondence: Sharizan Abdul Ghaffar, Department of Dermatology, Ninewells Hospital and Medical School, Dundee, DD1 9SY, UK. Tel: 01382 660111. E-mail: s.ghaffar@nhs.net

Conflicts of interest: The authors declare no conflict of interests. No funding was required.



Fig. 1. The second patient with severe bilateral oedema and erythema at presentation.

Discussion

Because of the presence of PPD in most tinting products, eyelash tinting has the potential to elicit an allergic contact dermatitis reaction. The prevalence of PPD

allergy in the general population has steadily increased over the years. This may be a factor in the rising incidence of eyelash tinting-related allergic reactions (3). However, another important factor is, of course, the widely available and advertised eyelash tinting service in salons, etc. Adverse reactions to eyelash tint have been previously reported. Reactions include severe and persistent blepharo-conjunctivitis and centrofacial oedema, the development of xanthelasma palpebrarum lesions, exudation of eyelids, itching, and periorbital dermatitis (4–7). These cases, along with the cases in this report, indicate the rising numbers of reactions to PPD-containing eyelash tints. With eyelash tinting becoming more popular, it is important for doctors, especially ophthalmologists and general practitioners, eyelash tint users and providers to be aware of this reaction that can occur after the use of eyelash tint.

References

- 1 de Groot A C. Side-effects of henna and semi-permanent 'black henna' tattoos: a full review. *Contact Dermatitis* 2013; **69**: 1–25.
- 2 Johansen J D, Aalto-Korte K, Agner T et al. European Society of Contact Dermatitis guideline for diagnostic patch testing – recommendations on best practice. *Contact Dermatitis* 2015; **73**: 195–221.
- 3 Patel S, Basketter D A, Jefferies D et al. Patch test frequency to p-phenylenediamine: follow up over the last 6 years. *Contact Dermatitis* 2007; **56**: 35–37.
- 4 Hansson C, Thorneby-Andersson K. Allergic contact dermatitis from 2-chloro-p-phenylenediamine in a cream dye for eyelashes and eyebrows. *Contact Dermatitis* 2001; **45**: 235–236.
- 5 Teixeira M, de Wachter L, Ronsyn E, Goossens A. Contact allergy to para-phenylenediamine in a permanent eyelash dye. *Contact Dermatitis* 2006; **55**: 92–94.
- 6 Bhat J, Smith A G. Xanthelasma palpebrarum following allergic contact dermatitis from para-phenylenediamine in a black eyelash-tinting product. *Contact Dermatitis* 2004; **49**: 304–313.
- 7 Vogel T A, Coenraads P-J, Schuttelaar M-L A. Allergic contact dermatitis presenting as severe and persistent blepharo-conjunctivitis and centrofacial oedema after dyeing of eyelashes. *Contact Dermatitis* 2014; **71**: 303–317.