

Short Communication

Allergic contact dermatitis from Basic Red 22 in a hair-colouring mousse

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Case Report

A 53-year-old woman developed a pruritic erythematous, oedematous eruption of her scalp, forehead, eyelids and upper face several hours after applying a leave-on para-phenylenediamine (PPD)-free hair-colouring mousse (Alberto VO5® Colour Mousse – Rich Brown). The reaction cleared within a week after treatment with systemic corticosteroids and antihistamines. She had used the same preparation 1× previously with no reaction, but had experienced a less-severe reaction after having her hair dyed. She was not atopic.

Patch testing with the European standard series showed positive reactions to nickel sulfate (5% pet.) and PPD (0.5% pet.). Patch testing to the mousse as is was negative, but a use test on the upper arm provoked a reaction. Patch testing was then performed with the individual constituents of the hair mousse, provided by the manufacturer, and also clothing dyes to assess PPD cross-reactivity. We found positive reactions to Basic Red 22, a constituent of the hair dye, as well as to Disperse Orange 3 and Disperse Red 1 in a textile series (Table 1). There was no previous history of clothing dermatitis.

Discussion

Basic Red 22 (5-[[4-(dimethylamino)phenyl]azo]-1,4-methyl-1H-1,2,4-triazolium) is a synthetic dye used in both cosmetics and textiles. Disperse Orange 3 (4-[(4-nitrophenyl)azo]benzeneamine) is also used in cosmetics and textiles, but Disperse Red 1 is generally used in textiles but not cosmetics.

To the best of our knowledge, this is the 1st report of contact sensitization to Basic Red 22 in a hair-colouring

Table 1. Patch test results

Substance	D2	D4
PPD 0.5% pet.	+++	+++
Basic Red 22 1% aq.	++	++
Disperse Orange 3 1% pet.	++	+++
Disperse Red 1 1% pet.	–	++

mousse. There have, however, been previous reports of allergic contact dermatitis from Disperse Orange 3 in hair dyes (1), and occupational hand dermatitis has been induced by Basic Red 22 in a carpet factory (2).

The cross-allergenic potentials of amino- and nitro-substituted aromatic compounds have frequently been described (3), and it may be that the positive patch test results in our patient resulted from cross-sensitivity (4).

This case illustrates the risk of adverse reactions to hair colorants, particularly those promoted as alternatives for patients allergic to hair dyes containing PPD.

References

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