

CASE REPORT

CASO CLINICO

A severe systemic reaction by skin painting with “black Henna”

Un caso di grave reazione sistemica dopo pseudotatuaggio con “Henné nero”

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Key words
Black henna • Skin painting • Allergic contact dermatitis • p-phenylenediamine

Parole chiave
Henné nero • Pseudotatuaggio • Dermatite allergica da contatto • Parafenilendiamina

Summary

The traditional red henna is used to dye hair. The so-called “black henna mixtures” are used to temporarily paint the skin.

A 11-year-old boy was referred for two episodes of itchy inflammatory edema, at the site of a labile tattoo. One year later, a third application provoked a generalized eczematous reaction.

The patch tests gave strongly positive reactions with p-phenylenediamine base, diaminodiphenylmethane, thimerosal and a mix of p-phenylenediamines. Patch tests with plain henna (red and black dry leaves) were negative.

In our patient the street painters most likely used a misappropriated hair dye preparation they called henna or black henna. Such commercialized dyes often contain p-phenylenediamine.

Despite previous reports since 1997 new cases still do occur. Because of the world-wide vogue of skin painting, future cases of such a sensitization are expected. Therefore, stricter control of these substances from competent authorities is needed.

Riassunto

L’henné rosso viene usato per colorare i capelli. Il cosiddetto “henné nero” viene usato da artisti di strada per decorare la pelle (tatuaggi temporanei o “pseudotatuaggi”): si tratta spesso di una miscela di henné con parafenilendiamina.

Riportiamo il caso di un bambino di 11 anni che riferiva due episodi di reazione locale in seguito a pseudotatuaggio. Dopo un anno, una terza applicazione provocò una reazione locale intensa, con diffusione dell’eczema a varie parti del corpo, della durata di un mese.

Il patch test diede esito fortemente positivo per: parafenilendiamina base, parafenilendiamina mix, diaminodifenilmetano e timerosal. Il patch con foglie macinate di henné rosso e nero diede esito negativo.

È verosimile che la preparazione di henné impiegato per il tatuaggio temporaneo contenesse parafenilendiamina. Sempre nuovi casi di questo tipo vengono segnalati, in relazione al diffondersi della moda di decorare la pelle. È quindi auspicabile un maggior controllo, da parte delle autorità competenti, di queste sostanze, il cui uso a diretto contatto con la cute è vietato.

Introduction

The traditional red henna is a powder made from the leaves of the *Lawsonia inermis* (Lythraceae), a shrub cultivated in North Africa, India and Sri Lanka. It’s used, mixed with additives, to dye hair and for skin decoration. *Lawsonia*, a naphthoquinone (2-hydroxy-1,4-naphthoquinone) is the active dyeing component. Skin painting (pseudotattooing) with henna is traditionally performed mainly in Muslim or Hindu persons. Recently, street artists have begun using the so-called “black henna mixtures”, that is henna mixed with p-phenylenediamine, to temporarily paint the skin.

Case report

A 11-year-old boy was referred for two episodes of itchy inflammatory edema, at the site of a labile tattoo located on the left deltoid area. The dark picture had been applied by a street artist who claimed to use henna powder. The first application in July 1999 was

uneventful. A second exposure, one month later, induced a mild local vesicular eruption. One year later, a third application by a different skin painter, provoked a generalized eczematous reaction, with diffuse itching and vesicles spreading from the site of the tattoo to the whole body and lasting for one month, despite treatment with systemic corticosteroid.

Patch tests were performed on the upper back one month later using the Finn-Chamber technique. The result of the patch tests with the GIRDCA standard series were observed after 48 and 72 hours: strongly positive reactions (erythema, edema and confluent vesicles) occurred with 1% p-phenylenediamine base, 0.5% diaminodiphenylmethane, 0.1% thimerosal and a mix of p-phenylenediamines (0.1% isopropyl p-phenylenediamine, 0.25% cyclohexyl p-phenylenediamine, 0.25% diphenyl p-phenylenediamine) in white petrolatum. A milder reaction (erythema, edema and vesicles) was observed with 1% disperse yellow AG. Patch tests with plain henna (red and black dry leaves, small ground) 1%, 5%, and 50% in white petrolatum were negative. The boy presented positive skin tests to mites and grasses, without symptoms.

Discussion

At our knowledge this is the first case of severe sy-

stemic allergic reaction due to pseudotattooing with black henna.

Henna painting is gaining increasing popularity in Western countries as a substitute for skin tattooing. Contact reactions, both immediate and delayed, to extract of *Lawsonia inermis* have been described⁵ as long as toxicity, progressing to acute kidney failure⁶, and oxidative hemolysis in G6PD-deficient subjects⁷.

In our patient the street painters most likely used a misappropriated hair dye preparation they called henna or black henna. Such commercialized dyes often contain p-phenylenediamine.

The use of p-phenylenediamine and other diamino-benzenes is allowed in the European Union for hair dyes but forbidden for dyeing eyelashes, eyebrows, or skin⁸.

The long duration of skin contact, the high concentration and the lack of a neutralizing agent dramatically increase the risk of sensitization.

Conclusion

Despite previous reports since 1997²⁻⁴ new cases still do occur. Because of the world-wide vogue of skin painting, future cases of such a sensitization are expected. Therefore, stricter control of these substances from competent authorities is needed.

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