

Dermatology Online Journal

Volume 15 Number 1

January 2009

[DOJ](#)

[Contents](#)

Allergic contact dermatitis to pure henna

Muhterem Polat MD, Meltem Dikilita MD, Pinar Özta MD Asc

Prof, Nuran Ali MD Asc Prof

Dermatology Online Journal 15 (1): 15

Ankara Numune Education and Research Hospital, Department of First Dermatology, Ankara, Turkey. drmuhterempolat@mynet.com

Abstract

Henna is a naturally occurring brown dye made from the leaves of the tree *Lawsonia inermis*. The active ingredient of henna is lawsone (2-hydroxy-1, 4-naphthoquinone). It is traditionally used in Islamic and Hindu cultures as a hair coloring and as a dye for decorating the nails or making temporary skin tattoos. Actually, henna has a very low allergic potential. In most cases, allergic reactions not caused by henna, but by the chemical coloring additives that are added to henna mixtures. These additives include agents such as daiminotoluenes and diaminobenzenes. In this article, we report a case of allergic contact dermatitis from pure henna that is also used for the relief of rheumatic pain.

Introduction

Henna (*Lawsonia inermis*) is part of the family Lythraceae, best known as a source of natural dyes. It is traditionally used in Islamic and Hindu cultures as a hair coloring and as a dye for decorating the nails or making temporary skin tattoos. Allergic contact dermatitis to pure henna is extremely rare [1, 2]. We present a case of allergic contact dermatitis to pure henna used for the relief of rheumatological joint pain.

Case report

A 30-year-old woman was admitted to our outpatient clinic because of erythema and edema on her leg that had appeared approximately one week after the application of henna mixed with vinegar. Dermatological examination revealed erythema and slight edema extending from the upper part of the right knee to the proximal part of the lower leg (Fig. 1). Her past medical history was not contributory. The patient reported that she had added vinegar to natural powder henna and applied this mixture over her knee. It was left there for 6 hours in order to relieve the joint pain.



Figure 1

Figure 1. Contact dermatitis on the leg

A diagnosis of allergic contact dermatitis to henna was made and the patient was advised to apply betamethasone dipropionate 0.05 percent cream twice daily. Remission was observed after 10 days. The patient

was patch tested with the European Standard series including p-phenylenediamine (PPD), natural henna diluted with sterile saline solution in 1 percent concentration, natural henna mixed with vinegar, and vinegar only. Reactions were read at 48 and 72 hours. The patient showed a positive vesicular reaction to natural henna (K in Fig. 2), probably due to delayed hypersensitivity, and a stronger reaction to natural henna mixed with vinegar (S-K in Fig. 2). There was no reaction at the vinegar site (Fig. 2).



Figure 2

Figure 2. Patch test results after 48 hours (K: henna, S: vinegar, K+S: henna+vinegar)

Discussion

The use of henna dye is traditional in Islamic countries. It has a religious and social significance [3]. In ancient times, henna was recommended as a remedy. The plant was used as a medicine for jaundice, leprosy, smallpox, and skin complaints [4]. In Turkey, plants are widely used for many indications. Henna is one of these plants and is used especially for mycotic infections and pruritus.

Despite its increased use, because of its low allergenicity, contact dermatitis to henna seems to be rare in individuals without occupational exposure [3]. The majority of cases of allergic contact dermatitis to henna are associated with the application of coloring agents (usually PPD) to produce more intense coloration as well as to reduce fixation time [2]. Natural substances such as lemon oil, vinegar, and eucalyptus oil are added to obtain different shades [5]. Our patient used vinegar to enhance the effect of henna. Although there was no reaction at the site of vinegar only, there was a stronger reaction at the site of pure henna mixed with vinegar compared to henna alone. Vinegar might have contributed a nonspecific irritant effect or may cause a chemical change in the henna such that it is more allergenic.

Turkey is an Islamic country where many people traditionally use henna for different purposes such as hand and nail decoration and the dyeing of hair; it is also used to relieve pain and pruritus and to treat infections. Hence, people should be aware of the potential side effects of henna and warnings about the risk of using henna are warranted.

Acknowledgement: We would like to thank MD Prof Meltem Önder (Gazi University School of Medicine, Dermatology Department) for her elegant help in evaluating our patient and preparing this manuscript.

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