

Allergic Contact Dermatitis from Prostaquinon®

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Nigella sativa (NS) is a widely used medicinal plant throughout the world thanks to its variety of therapeutics effects such as immunomodulator, analgesic, or antioxidant.

Most of the biological activity is due to thymoquinone (TQ), the major component and one of the pharmacologically active compounds [1].

Prostaquinon® is an extract of this type of plant, which specially inhibits the prostaglandin PGD₂. Thus, it could be effective in patients with alopecia and hair transplants on account of its anti-inflammatory and anti-oxidant effects in hair follicles [2]. It is normally applied topically in 0,4-2,4% concentrations in essential oil .

Nonetheless, both irritant and allergic contact dermatitis [3] have been also described in treatments with herbal medicines.

We report a case of severe contact dermatitis induced by local use of Prostaquinon® in hair follicles transplation.

A 32 year old man, with no history of allergic or atopic skin disease, presented maculopopular eczema with severe itch, vesicles and exudation in the frontal hairline zone which run down to neck and arms.

On the other hand, it is crucial to accentuate that our patient had been subjected to hair transplant fifteen days previously to the start of symptoms and it had been using an special oil that contained Prostaquinon 2,4%, Trichooil and Ginko Biloba 2,25%.

At first, he was diagnosed with folliculitis, and was treated with oral antibiotics and corticoids improving the symptoms. When the treatment was withheld, the patient got worse because he still was using the oil.

For this reason, we suspected it could be a contact dermatitis caused by one of the components of the oil.

Patch tests were performed using the standard series of the GEIDAC (Spanish Contact Dermatitis and Skin Allergy Research Group), a cosmetic and fragrance series including tert-butylhydroquinone (TBHQ) 1% pet. (Chemotechnique Diagnostics, Vellinge, Sweden), as well as personal oil. The three components of the oil used by the patient (Prostaquinon 2,4%, Trichoil and Ginko Biloba 2,25%) were tested "as is". Readings were carried out at 48, 72 and 96 hours. Due to the irritant effect of Prostaquinon 2,4% in control subjects it was repeated in a dilution of 1:10 in olive oil (oo). Both patch tests with Prostaquinon diluted 1:10 in oo and TBHQ showed extreme positive reactions (++++) at 48, 72 and 96 hours (Figure 1). However, there were negative results to all standard series (GEIDAC, cosmetic and fragrance series) and the rest of the products tested (Trichooil and Ginkgo Biloba).

Ten control subjects (5 atopic and 5 non atopic) underwent patch testing with Prostaquinon diluted 1:10 in oo, without any reactions.

NS is very popular in today's medicine for its special properties. Thereby, many products that are used in alopecia or hair transplants contain essential oils derived from the seeds of this plant.

However, several studies have showed a potential risk of developing allergic contact dermatitis owing to the topical application of these essential oils in cosmetics and perfumes [4-6]. What is more, it has been also reported severe systemic allergic dermatitis after ingestión [7].

Although the specific causative substance of allergic reaction remain unidentified, some authors [8,9] strongly suggest that TQ may be one of the main allergens involved in the pathophysiologic of contact dermatitis to *NS* oil.

Although TBHQ is not contained in *NS*, its chemical structure is quite similar to TQ. In reference to that, Seiller [10] developed the hypothesis, based on several cases published, that TBHQ could be a good marker for *NS* allergy. We could corroborate it because our patient presented extreme positive reactions to patch tests for both substances, NSO and TBHQ. Moreover, patch test with Prostaquinon 2,4% caused irritation reaction in control subjects, whereas Prostaquinon diluted 1:10 in oo recorded good tolerance.

In relation to skin lesions, these appeared when the patient started to apply Prostaquinon in scalp after hair transplation. Even though they were firstly diagnosed with folliculitis, the reappearance of the symptoms after interrupting the treatment aimed to contact dermatitis.

On the whole, we should be aware of the possibility of allergic contact dermatitis to *NS* in patients with hair transplation in treatment with essential oils.

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Conflicts of Interest

Nothing to declare.

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Figure 1. Reaction to patch test to Prostaquinon diluted 1:10 in olive oil (1) and patch test to tert-butylhydroquinone 1% pet. (2) at 48 and 96 hours.

