

Allergic contact dermatitis caused by argan oil

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Argan oil is a substance obtained by heating, roasting and pressing the nuts contained in fruits of *Argania spinosa* (Sapotaceae), an endemic tree growing in the southwest of Morocco. Argan oil contains tocopherols, phenols, carotenes, squalene, and fatty acids (1, 2). The main natural phenols in argan oil are caffeic acid, oleuropein, vanillic acid, tyrosol, catechol, resorcinol, epicatechin, and catechin. It is becoming increasingly popular for cosmetic use, being used as a moisturizing oil, as a treatment for juvenile acne, and for nourishing the hair. Argan oil may have nutritional and medicinal properties, owing to its high content of unsaturated fatty acids and phytosterols (1).

Case Report

A 50-year-old woman presented with a 10-day history of eczematous lesions on the scalp, characterized by intense

oozing and itching. Her history showed that such lesions appeared 1 week after the use of a moisturizing product containing argan oil that she had been applying every day for her scalp psoriasis. Upon further investigation, she reported the use of the same product in the last month to moisturize her legs. She denied any known allergy or exposure to irritants or hair dye. One month after the complete resolution of the dermatitis, obtained with twice-daily topical application of clobetasol foam for 1 week, she was patch tested with the Italian Society of Allergological, Occupational and Environmental Dermatology (SIDAPA) baseline series (Euromedical®, Calolziocorte, LC, Italy), a 'cosmetic series', with argan oil 'as is', and argan oil 10% pet. Patch tests were applied on the back and left in occlusion for 2 days with Al Test® (Euromedical®) on Scanpor® tape (Norgesplaster A/S, Vennesla, Norway). The test readings were performed after D2 and D4. The reactions were classified according to the ICDRG guidelines. Repeated open application tests (ROATs) with argan oil were performed on the volar aspect of the forearm (twice-daily 5 × 5-cm applications for a maximum of 7 days). The patient showed a positive patch test reaction to argan oil 'as is' and argan oil 10% pet., and a positive ROAT reaction after five applications. Because of the

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similar ingredients (oleic acid, linoleic acid, stearic acid, and palmitic acid) contained in argan oil and olive oil (1, 2), we also performed patch tests and ROATs with the latter 'as is', without any reactions being seen. Ten healthy volunteers were patch tested with argan oil 'as is' and argan oil 10% pet., and no reactions were seen.

Discussion

We report the first case of allergic contact dermatitis (ACD) caused by argan oil, an ingredient that is widely used for its moisturizing and nourishing proprieties. In 2009, Astier et al. (3) described a case of anaphylaxis caused by

argan oil in a man who smelled and ingested it; apart from this, no cases of adverse reactions to argan oil have been reported. The cosmetic and nutritional properties of argan oil are attributable to the high levels of oleic acid and linoleic acid, and their saturated fatty acids (respectively, palmitic and stearic acid). These ingredients are present in similar quantities in olive oil, which is already known to be a sensitizer (4–7). Our patient showed positive results only when patch tested with argan oil; olive oil gave negative results. Hence, we may speculate that the oleic part of argan oil does not contain the substance responsible for the ACD, and that further studies are required to identify the exact sensitizer.

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