

Occupational allergic contact dermatitis from olive oil

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Jason D. Williams^{1,2} and Bruce J. Tate²

¹Occupational Dermatology Research and Education Centre, Skin and Cancer Foundation, and ²Skin and Cancer Foundation, Melbourne, Vic. 3053, Australia

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Introduction

Allergic contact dermatitis (ACD) from olive oil is rare (1–3). The sensitizer remains unknown, though patch testing to constituents has previously been undertaken, with negative results (2). Few cases of occupational contact dermatitis to olive oil have been described (3–5).

Case Report

A 40-year-old female patient presented with a 5-month history of an itchy rash affecting the thighs, arms, hands, and face. She had worked as an aromatherapist for the previous 12 months. Her condition improved spontaneously when she was away from work. She had a history of asthma and hay fever, and a family history of atopy. Her work involved the mixing of various essential oils in a 'carrier oil' (olive oil). These blends were then applied to clients' skin, normally through massage. She was patch tested to a modified European standard series, supplementary allergens, including our fragrance, essential oils, and perfume series, and her own samples, applied in Finn Chambers[®] on Scanpor[®] (Epitest, Tuusula, Finland). Readings were taken on D2 and D4. On D2, there were positive reactions (++) to the patients' own olive oil (neat and 30% pet.). On D4 there were positive reactions to Jasmine Absolute Egyptia 2% pet. (++), and the patients' own olive oil, neat and diluted (+). We were unable to find any relevance for the positive reaction to Jasmine, as the patient did not use this in her aromatherapy practice,

and rarely used perfumes (which may contain Jasmine as a fragrance constituent). She had never had a reaction to any perfumed products previously. The patient included olive oil in her normal diet without any noticeable effects. The patient was advised to avoid olive oil and substitute it with almond oil in her aromatherapy practice. The rash resolved soon after stopping the use of olive oil, and the patient was able to continue as an aromatherapist using soybean oil as the carrier oil. This improvement further suggests that the reaction to Jasmine was not of current relevance.

Discussion

Olive oil is a vegetable oil obtained from the fruit of the olive tree (*Olea europaea* L.). The International Olive Oil Council sets standards of quality used by the major olive oil producing countries, and officially governs 95% of global production. Olive oil is classified based on how it was produced, its chemistry, and its flavour. All production begins by transforming the olive fruit into olive paste, which is then malaxed to allow the microscopic olive droplets to concentrate. The industrial grading system is different from the retail grading system. Refined oil is treated chemically to neutralize bad tastes and acidity. Extravirgin olive oil is the best quality and comes from the first pressing of the olives. It contains no more than 0.8% acidity and does not contain any refined oil.

ACD from olive oil is rare (1–3). Occupational contact dermatitis has previously been reported in pedicurists (3), a masseur (4), and a chef (5). The majority of cases are, however, seen in patients treated for venous eczema (3). Kränke et al. tested 100 patients for allergy to olive oil, and had five positive reactions, only one of which they felt was allergic in nature. They concluded that olive oil is mildly irritating, especially when used under occlusion (6). However, olive oil is routinely used in patch testing as a diluent, and produces few false-positive or irritating reactions. ACD to essential oils has previously been reported in aromatherapists (7). This case highlights that the 'carrier' or 'base' oil should also be considered as a potential allergen. We consider almond oil as a safe alternative, though there is one report of percutaneous sensitization in an infant (8).

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Address:

Dr J. D. L. Williams
Skin and Cancer Foundation Inc.
Victoria
PO Box 132
Carlton South
Vic. 3053
Australia
Tel: 61 3 9639 9633
Fax: 61 3 9639 9644
e-mail: jwilliams@occderm.asn.au