

Contact dermatitis due to oil of turpentine in a porcelain painter

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Case Report

A 56-year-old female porcelain painter presented with a 2-year history of recurrent severe eczema of the hands and forearms, sometimes spreading to the upper arms. The eczema worsened during work and improved during vacations. At work, the patient applied different kinds of colours to porcelain with a brush before or after firing. The pigments were previously mixed with oil of turpentine or other oils like lavender or anise. Patch tests and readings were performed according to the recommendations of the DKG (1) and of the ICDRG with standard and fragrance series, supplemented with industrial porcelain pigments. Positive reactions were found to oil of turpentine, fragrance mix, colophony, lavender oil and anise oil (Table 1). There were no positive reactions to the porcelain colours themselves. The patient recovered completely after replacing oil of turpentine with water-based solvents and using protective gloves wherever possible.

Discussion

Oil of turpentine is obtained by distillation of turpentine, which is an extract of pine trees.

The main components of all turpentine oils are terpene hydrocarbons. Of these, α -pinene and β -pinene represent the main constituents, but also Δ -3-carene and sometimes camphene are contained (2, 3). In the past, oil of turpentine was widely used as paint thinner, ingredient of varnishes and laquer, rubber solvent and reclaiming agent (4).

Contact allergy to oil of turpentine has become rare. This is mainly due to its substitution by cheaper solvents deriving from petroleum in many occupations (2, 4–6),

but also to the use of oils of turpentine from Portugal, Spain and the South of France. These contain less Δ -3-carene than the formerly used Scandinavian, Indonesian and East-European oils (7). Hand colouring in pottery and porcelain crafting is, besides the perfume industry, one of the rare occupations where oil of turpentine is still used. Allergy to oil of turpentine continues to be a problem in these handicrafts and seems to be more common than allergy to the metals contained in the porcelain colours (7).

Sensitization to lavender and anise oil is not a common finding in painters or at least not often described. The positive test reactions to these oils, as well as to fragrance mix and colophony, may be interpreted as a group-reaction to the terpene hydrocarbons. These are not only the main constituents in oil of turpentine, but are also found in lavender and anise oil, as well as in many other essential oils (7, 8), and are widely used in the perfumery industry as starting materials for fragrances.

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Table 1. Positive patch test results

	D 3
turpentine (10% pet.)	++
porcelain colour pigments (as is)	–
lavender oil (30% oo.)	+
anise oil (1% oo.)	++
fragrance mix (8% pet.)	+
colophony (20% pet.)	+

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