by immunofluorescence (Table 1) revealed a significantly higher (P < 0.005) frequency of fibrin deposits in the reticular dermis, in a pattern that spared blood vessels of the upper dermal plexus. Fig. 1 illustrates one such reaction in an allergic contact dermatitis lesion. The reaction patterns in the 2 cases that gave positive fibrin reactions in the reticular dermis, in response to the 20% HCl irritation, differed from “true positive” reaction patterns in that smooth, linear fibrin deposits also appeared in the capillaries in the upper dermal plexus (Fig. 2).

Reviews of routine direct immunofluorescent findings in skin biopsies of 22 consecutive cases with questions of dermatitis herpetiformis (DH) in the differential diagnosis, revealed 2 with IgA deposits in the papillary dermis diagnostic of DH and 4 with fibrin deposits of the allergic contact dermatitis type. We feel these 4 cases merit patch tests.

Our preliminary studies lend support to the previous findings of an association between perivascular fibrin deposits and cell-mediated immune reactions such as allergic contact dermatitis (1–3). Coded further studies may reveal why 100% positives were found in experimentally-induced DNCB reactions (1), but only 58% to environmental antigens; we found only 45% “fibrin positives” in such cases.

Our data suggest that perivascular fibrin patterns, in cases with unidentified forms of dermatitis, may be a sign of allergic contact dermatitis, though negative findings may not rule it out and positive findings indicate patch testing.

References


Contact and photocontact dermatitis from Ruta chalepensis

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Key words: Ruta chalepensis; phytophotodermatitis; allergic contact dermatitis; plants; rue.

Ruta chalepensis L., an evergreen shrub of the Rutaceae (rue) family, is common in Central and Southern Europe and in the Mediterranean basin. Its strongly aromatic leaves are used in cooking, perfumery, traditional medicine, as a repellent to snakes and mice, and as a “defence against witches”. In Portugal, R. chalepensis is cultivated to ward off mosquitoes and mice.

Phytophotodermatitis from Ruta graveolens (1–3) and Ruta chalepensis (4) has been described. These species of rue contain furocoumarins, especially 5-and 8-methoxyxpsoralen (5-MOP and 8-MOP), responsible for phototoxic reactions. They also contain rutin (a glycoside), a resin and an essential oil, that contains α-pinene, limonene and eucalyptol (5).

Case Report

A 52-year-old woman presented in May 1988 with pruriginous, erythematous, vesico-bullous lesions, some in a linear pattern, on the backs of her hands, arms, forearms and upper third of the legs. They started 24 h after handling the Ruta chalepensis that she used to ward off mice. The lesions healed with potassium permanganate dressings and bethamethasone valerate cream, without residual pigmentation.

Patch tests were performed with the standard series, plants and woods series (Herbal, Reinbek, West Germany), Frullania dilatata as is, Ruta chalepensis as is and its ether extracts at 0.5 and 1% pet., and with 5-MOP and 8-MOP, each at 0.001, 0.01 and 0.1% pet. Photopatch tests were performed with the plant as is, its extracts and the furocoumarins, at the same concentrations.

Positive results are summarized in Table 1.
Table 1. Positive patch and photopatch tests

<table>
<thead>
<tr>
<th></th>
<th>Patch</th>
<th>Photopatch</th>
</tr>
</thead>
<tbody>
<tr>
<td>colophony 20% pet.</td>
<td>+</td>
<td>NT</td>
</tr>
<tr>
<td>turpentine peroxide 10% a.o.</td>
<td>+</td>
<td>NT</td>
</tr>
<tr>
<td>R. chalepensis (leaf)</td>
<td>++</td>
<td>+++</td>
</tr>
<tr>
<td>R. chalepensis (flower)</td>
<td>+++</td>
<td>+++</td>
</tr>
<tr>
<td>R. chalepensis ether ext.</td>
<td>++</td>
<td>+++</td>
</tr>
<tr>
<td>1% pet.*</td>
<td>+</td>
<td>+++</td>
</tr>
<tr>
<td>R. chalepensis ether ext.</td>
<td>0.5%</td>
<td>+++</td>
</tr>
<tr>
<td>a-pinene 15% pet.</td>
<td>+ +</td>
<td>NT</td>
</tr>
<tr>
<td>abietic acid 5% pet.</td>
<td>+ +</td>
<td>NT</td>
</tr>
<tr>
<td>lemon oil 2% pet.</td>
<td>+</td>
<td>NT</td>
</tr>
<tr>
<td>Frullania dilatata as is</td>
<td>+ +</td>
<td>NT</td>
</tr>
</tbody>
</table>

* 20 negative controls.

Discussion

Among our patients, *Ruta chalepensis* is, after *Ficus carica*, the main cause of phytophotodermatitis. Patients react to the plant or its extracts only after UVA irradiation. In this case, the patient had positive patch and photopatch tests, with photoaggravation.

The clinical appearance of the lesions, their diffuse borders, severe pruritus, absence of residual pigmentation, and spread beyond exposed areas, suggest the possibility of an associated allergic contact dermatitis.

α-pinene, lemon oil (5) and even abietic acid may be responsible for the sensitzation, and also explain positive patch tests to colophony, turpentine and *Frullania* (6).

Photoallergy to psoralens contained in plants has been reported by Fulton et al. (7) and Ljunggren (8), but was not confirmed in our case, with no reactions to low concentrations of 5- and 8-MOP.

We believe our case represents an allergic contact dermatitis from *Ruta chalepensis*, probably due to α-pinene and lemon oil, and a phototoxic reaction to psoralens contained in the plant.

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References


Occupational contact dermatitis from pyrocatechol

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Key words: pyrocatechol; photographic developer; allergic contact dermatitis; occupational.

Pyrocatechol (1,2-benzenediol; pyrocatechin; catechol) is a water-soluble phenol derivative, with the formula C_6H_4(OH)_2, with 2 ortho OH groups, first prepared in 1839 by Reinsch (1). Its meta and para isomers are resorcinol and hydroquinone, respectively.

Pyrocatechol occurs widely in nature as an important constituent of living and fossil plants. It is present in crude wood tar, crude beet sugar, and water from bituminous shale. Pyrocatechol and its derivatives occur in lignin, wood and other plant materials. It is also an important precursor of adrenalin, while
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