HOUSE IVY DERMATITIS

Treatment by Alcoholic Extract of House Ivy Leaves

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IN 1927, Spain and Cooke[10] demonstrated that absolute alcohol extracts of oleoresinous substances in poison ivy leaves could be used for the diagnosis and treatment of Rhus dermatitis. Four years later, in 1931, Brown, Milford, and Coca[2] showed that ragweed dermatitis was due to the fat-soluble fraction of the plant or pollen, and suggested that treatment should be attempted with the oleoresin dissolved in almond oil. Subsequently, attention was focused on the use of oily solutions of oleoresins in the treatment of plant dermatitis. The successful treatment of ragweed and other plant dermatitis with oleaginous extracts was reported by a number of investigators, including Brunsting and Williams,[3] Pascher and Sulzberger,[7] Frank,[6] Caulfield,[4] Rudolph and Deutsch,[8] and Seyler.[9]

However, the therapeutic administration of oil extracts presents certain disadvantages. The deep intramuscular injections required are frequently painful for several days. The injected oil is absorbed at a slow rate, and thus there may not be sufficient contact with the body cells to produce a high degree of immunologic response. The presence of minute quantities of protein in the oily medium, especially when peanut oil is used, may cause severe reactions in a person allergic to the menstruum.

In an attempt to overcome these disadvantages, Clarke and Ricchiuti[5] reverted to the method of Spain and Cooke and prepared an extract of ragweed leaves in absolute alcohol. With this alcoholic extract they were able to treat ragweed dermatitis successfully. It, therefore, became apparent that alcoholic extracts of dermatitis-producing plant oleoresins were therapeutically effective in conditions other than Rhus dermatitis. The significance of this observation lies in the fact that alcoholic extracts present several advantages over oil extracts. They are more easily prepared and diluted. By means of patch tests with serial dilutions, the exact degree of individual sensitivity may be evaluated and dosage can be adjusted accordingly. The alcoholic extracts are given by deep subcutaneous injection, and this is only momentarily painful. Because of its distribution in the subcutaneous tissues, the antigenic material is more rapidly absorbed, providing a more effective immunologic response, of special importance in phylactic treatment. There is no danger of allergic sensitivity to the solvent.

The ease with which alcoholic extracts of plant leaves can be prepared should warrant the therapeutic trial of such extracts in cases of dermatitis venenata from plant sensitivity. A large variety of plants is capable of giving rise to such conditions; Weber[11] in 1937 listed 113 "irritating plants of the U. S." In a few rare instances, house ivy has been cited as an

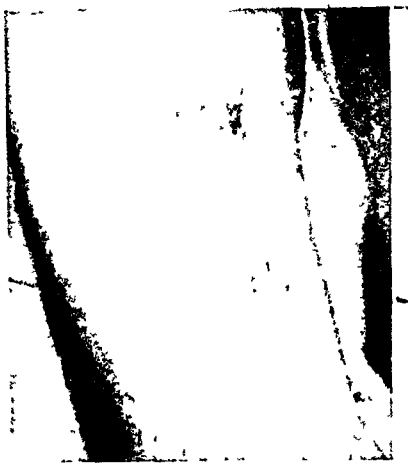

Fig. 1. Positive patch test to alcoholic extract of ivy leaves.

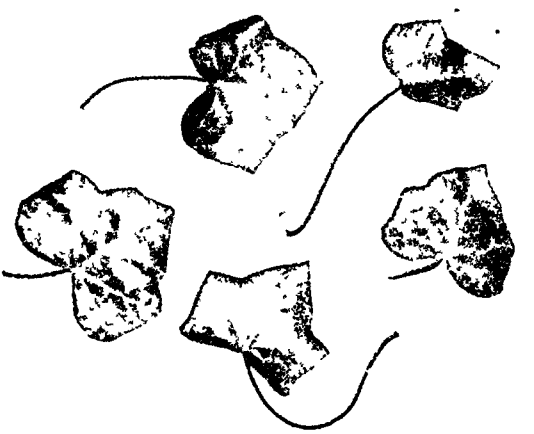

Fig. 2. Specimen leaves of English ivy causing the dermatitis

offending factor. (Seyler,[9] Weber,[11] Aleman and Vall.[1]) The following case report illustrates the management of house ivy dermatitis with a simple alcoholic extract of the ivy leaves.

CASE REPORT

G. M., a man of fifty-one, was first seen on May 4, 1946, with a history of a summer rash of seven or eight years' duration. The usual sites of involvement were the hands, feet, and the region behind the ears. The attacks occurred in bouts, lasting three or four days, with several exacerbations during the summer months. On one occasion, after having cut down some house ivy and trampled it into a basket, he developed an extensive dermatitis of the hands and feet which necessitated confinement to bed for several days. The diagnosis of dermatitis venenata due to house ivy was suspected, and a confirmatory patch test was made with a house ivy leaf secured from the patient's own home. This gave a definitely positive reaction The patient's home was covered with English ivy (hedera helix), to which he was found sensitive. However, a patch test with a leaf of Boston ivy (parthenocissus tricuspidata) was negative

A quantity of the English house ivy leaves was then collected and an alcoholic extract prepared in the following manner. The leaves were desiccated by air on a laboratory table and later on top of a dry air sterilizer. The dry leaves were broken up, and 10 grams were immersed in 100 c.c. of absolute alcohol for a period of twenty-four hours and then filtered through dry paper. A preliminary patch test with a 1:100 dilution of this extract failed to produce a reaction, but a subsequent test with the undiluted extract was strongly positive. Control tests made on ten other persons were negative

Prophylactic treatment was begun on May 11, 1946, with 0.25 c.c. of a 1 1,000 dilution of the alcoholic extract of the house ivy leaves. The injections were administered by the following technique. The amount of extract required was withdrawn into a dry tuberculin syringe. To this was added sufficient buffered saline solution to make a total volume of 0.3 to 0.4 c.c, and the syringe was rapidly inverted two or three times The active principle of the alcoholic extract was at once thrown out of solution into a finely divided suspension with an opalescent appearance.

This suspension was immediately injected deeply into the subcutaneous tissue of the arm, using a 26-gauge, ½-inch hypodermic needle.

The prophylactic injections were continued at intervals of four to seven days until a level of 0.2 c.c. of a 1:10 dilution was reached in five weeks. The maximum dose was repeated in July and again in August. The result of the treatment was completely satisfactory, since, for the first time in many years, the patient remained free of his usual summer rash.

On the basis of the successful application of treatment with alcoholic extracts to such divergent conditions as Rhus, ragweed, and house ivy dermatitis, it is felt that a similar approach can be employed in cases of dermatitis venenata in which a plant sensitivity is suspected. A preliminary patch test should be made with a leaf of the suspected plant, and if this proves positive, a simple alcoholic extract can be easily prepared within twenty-four to forty-eight hours. The sensitivity of the patient can then be calibrated by patch testing with the alcoholic extract, and either phylactic or prophylactic treatment promptly instituted.

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HISTAMINE-SYMPATHIN BALANCE

(Continued from Page 59)

after two lethal doses. All control animals died from histaminic shocks, as did those which had received insufficient quantities of Sympathin.

In an investigation of the use of inhalation in preventing histaminic shock in guinea pigs, it was found that 78.9 per cent survived the shock after this procedure.

Sympathin, being a physiological substance extracted from normal organs, and a constant component of them, is among those factors which must be taken into account in the regulation of histamine.

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