SKIN TESTS FOR SENSITIVITY TO LIVER

BY

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It is well recognized that patients maintained on parenteral liver therapy may develop sensitivity to liver extract. Intradermal tests are usually employed as diagnostic aids in this condition, but there is a lack of uniformity in the interpretation of them. McSorley and Davidson (1944) recommend the use of 0.05 ml. of undiluted liver extract and accept a weal of over 15 mm. in diameter appearing in 15 to 30 minutes as a positive response, but they found that 16 out of 52 patients maintained on parenteral liver therapy were positive to a skin test although tolerating their injections without clinical reactions. Allin and Meyer (1940) observed weals in 13 out of 14 normal subjects given 0.05 ml. of liver extract intradermally, and they suggest that only a weal with pseudopods should be accepted as a positive response. Other authors have observed that patients with clinical sensitivity to liver extract usually show a definite weal and flare after an intradermal injection of a 1 in 1,000 dilution of the extract (Feinberg *et al.*, 1943; Bauer *et al.*, 1947).

The present investigation was undertaken in order to try to assess the value of skin tests in the recognition of sensitivity to liver.

Results

The cutaneous reactions of a group of patients undergoing maintenance treatment with liver injections were compared with those of a "control" group of patients suffering from a variety of diseases. The age and sex distribution of the two groups was strictly comparable, and the same highly purified extract of liver was used for therapy and for the intradermal tests.

All patients were given 0.05 ml. of liver extract intradermally and the readings were taken after 10 to 15 minutes, since it was found in some cases that the weals tended to become less distinct after 15 minutes. It was impossible to record the results in quantitative terms, for the size of the flare was of little significance; the intensity and regularity of the weal seemed to be of greater importance than its actual diameter. The responses were therefore graded as follows: (1) a flare only; (2) a doubtful weal—i.e., a flare with raised central area which blanched when the skin was stretched; (3) a classical weal and flare; and (4) a weal with pseudopod formation. Definite weals were produced not only in 9 out of 11 patients receiving liver but also in 9 out of 11 controls, and the reactions were no more intense in those receiving liver (Table I).

TABLE I.—Results of Tests with 0.05 ml. of Liver Extract

		Intensity of Reaction			
		Grade 1	Grade 2	Grade 3	Grade 4
Control group	..	—	2	7	2
Patients receiving liver	..	—	2	8	1

Three separate groups of patients were then tested with serial dilutions of liver extract in normal saline. Each of these groups was subdivided into patients receiving liver injections and "normal" controls, but since there was no significant difference between these subgroups the results have been pooled in Table II. Definite weals were observed in 8 out of 14 subjects tested with a 1 in 10 dilution of liver extract, in 1 out of 26 tested with a 1 in 100 dilution, and in none of 17 tested with a 1 in 1,000 dilution.

TABLE II.—Results of Tests with Dilutions of Liver Extract

Dilution	Intensity of Reaction			
	Grade 1	Grade 2	Grade 3	Grade 4
1 in 10	2	4	8	—
1 in 100	23	2	1	—
1 in 1,000	16	1	—	—

While carrying out these experiments I have had the opportunity of doing skin tests on three patients with clinical manifestations of acquired sensitivity to liver. All three reacted with the formation of a definite weal when given 0.05 ml. of a 1 in 100 dilution of liver extract, and in two of them weal formation was observed with a 1 in 1,000 dilution.

Discussion

The diagnosis of acquired sensitivity to liver extract should be made mainly on clinical evidence. Skin tests are of secondary importance: they may show only approximate correlation with the severity of the symptoms (Bauer *et al.*, 1947), and cases have been reported in which they were negative at the time of the first reaction and became positive later (Delikat, 1943; McSorley and Davidson, 1944). Positive reactions usually persist in patients who have been successfully desensitized (Feinberg *et al.*, 1943), and this was observed in one of the cases recorded above.

There are patients, however, who describe vague and indefinite reactions after liver injections, and it is often difficult to know how much significance should be attached to their stories. In such cases the result of an intradermal injection of 0.05 ml. of a 1 in 100 dilution of liver extract may be of considerable assistance in diagnosis.

Conclusion.—Most normal people respond with a typical weal and flare to the intradermal injection of undiluted liver extract. It should not be concluded that a patient is sensitive to liver unless such a reaction is obtained with a dilution of purified extract of at least 1 in 100.

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The Ministry of National Insurance states that in the first three months of the National Insurance Scheme 293,000 claims for maternity benefit have been made and that they are coming in at the rate of about 18,000 a week, but some mothers are losing money because they make their claims too late. The Ministry recalls that there are three kinds of maternity benefit. First there is a grant of £4 to help towards the usual expenses of having a baby. The grant can be claimed seven weeks before the birth is expected and must be claimed not later than three months after the event. Then there is an attendance allowance of £1 a week for four weeks after confinement for the additional help needed in the home during that time. It must be claimed within ten days of the birth. If the mother is not well enough someone else can claim for her and if necessary sign the form. The grant and the attendance allowance can be claimed either on the mother's own insurance or on her husband's, but not on both. To those mothers who have been in work or registering at an employment exchange over the year ending six weeks before they expect their baby a maternity allowance may be paid instead of the attendance allowance. This allowance is 36s. a week for the 13 weeks beginning six weeks before confinement, provided that the mother gives up her work for this period. It should be claimed seven weeks before the week in which the baby is expected. If the claim is not sent in six weeks before the expected date of confinement, part of the allowance may be lost. Fuller details of these benefits and the conditions on which they are paid are given in Leaflet N.I.17, and every expectant mother should get a copy from her maternity clinic. The leaflet can also be had at any local National Insurance Office, and inquiries about maternity benefit should be sent there.