Dermatitis herpetiformis is uncommon in children and very rare in infants under 1 year of age (1), (2), (3). During the past 10 years I have observed only two authentic cases. They are reported briefly, mainly because in both instances bullous reactions to streptococcic antigens were observed. A year later, in April 1951, he was hospitalized for a recurrence complicated by a secondary impetigo. Bacterial tests repeatedly gave bullous reactions to streptococcic antigens only, as seen in Figures 1 and 2, and described in Table I.

Case 2: An 11 month old girl was seen in January, 1957 with the typical picture of dermatitis herpetiformis. The eruption did not respond to sulfapyridine, even in the amount of 2 grams daily, but cleared with promacetin. Two grams daily were required for several months; repeated attempts to reduce the dose were followed by aggravations. After about eight months, however, gradual reduction of the drug was no longer followed by flareups or recurrences, and promacetin eventually was withdrawn. Since then the child has been well. Bacterial tests gave a bullous delayed reaction to Streptococcus hemolyticus, producing a blister 6 mm. in diameter, surrounded by an erythema of 12 mm. in diameter.

REPORT OF CASES

Case 1: An otherwise healthy boy, 5 years old, suffered from a typical dermatitis herpetiformis for two years. The diagnosis previously had been confirmed by a competent dermatologist. When he was first seen in April 1950, sulfapyridine was started and produced a remarkable improvement.

Case 2: An 11 month old girl was seen in January, 1957 with the typical picture of dermatitis herpetiformis. The eruption did not respond to sulfapyridine, even in the amount of 2 grams daily, but cleared with promacetin. Two grams daily were required for several months; repeated attempts to reduce the dose were followed by aggravations. After about eight months, however, gradual reduction of the drug was no longer followed by flareups or recurrences, and promacetin eventually was withdrawn. Since then the child has been well. Bacterial tests gave a bullous delayed reaction to Streptococcus hemolyticus, producing a blister 6 mm. in diameter, surrounded by an erythema of 12 mm. in diameter.

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TABLE I

Response to bacterial tests in Case 1

<table>
<thead>
<tr>
<th>Antigen</th>
<th>First Test (4-16-51)*</th>
<th>Second Test (4-19-51)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Streptococcus hemolyticus</td>
<td>Bulla (10 mm.)</td>
<td>Bulla</td>
</tr>
<tr>
<td>2. Streptococcic immunogen</td>
<td>Bulla (6 mm.)</td>
<td>Slight Bulla</td>
</tr>
<tr>
<td>3. Staphylococcic toxoid immunogen</td>
<td>+ (6 mm.)</td>
<td>+</td>
</tr>
<tr>
<td>4. Staphylococcus toxoid</td>
<td>± (3 mm.)</td>
<td>—</td>
</tr>
<tr>
<td>5. Streptococcus viridans</td>
<td>± (4 mm.)</td>
<td>—</td>
</tr>
<tr>
<td>6. Escherichia coli</td>
<td>0</td>
<td>—</td>
</tr>
<tr>
<td>7. Mixed respiratory vaccine</td>
<td>+ (6 mm.)</td>
<td>+ (9 mm.)</td>
</tr>
<tr>
<td>8. Trichophytin</td>
<td>0</td>
<td>—</td>
</tr>
<tr>
<td>9. Oidiomycin</td>
<td>± (4 mm.)</td>
<td>—</td>
</tr>
</tbody>
</table>

* Readings after 48 hours.
+ indicates positive tuberculin type reaction.
± indicates questionable tuberculin type reaction.
0 indicates negative reaction.
— indicates test not performed.

Fig. 3. Case 2: Bullous reaction to streptococcus hemolyticus surrounded by erythema. mm. (Figure 3). The staphylococcic antigens produced only a tuberculin type delayed response.

DISCUSSION

Bullous reactions to bacterial antigens in dermatitis herpetiformis have been reported previously in adults. Bernhardt (4) observed erythematovesicular reactions with a streptococcic vaccine, tuberculin and trichophytin. Leone (5) obtained bullous reactions to intradermal injections of streptococcus vaccine, living staphylococci and gonococcus vaccine in patients with dermatitis herpetiformis. Callaway and Sternberg’s (6) patient gave bullous reactions to intradermal tests with an autogenous vaccine from pneumococcus of type 7. Swartz and Lever (7) tested 12 patients with dermatitis herpetiformis with intradermal injections of vaccine from Escherichia coli, streptococcus, staphylococcus, and staphylococcus toxoid, using various strains of these bacteria including bacterial cultures from the stools of the patients. Five patients reacted with vesicular lesions to all strains of E. coli irrespective of the source of the strain. One of them had a vesicular reaction also to staphylococcus vaccines and one to the streptococcus vaccine. Judging from Swartz and Lever’s experience, such bullous reactions should not be very rare. I have observed bullous reactions to staphylococcic vaccines only twice in dermatitis herpetiformis (8) in adults. This discrepancy may be due to the fact that only some of my patients had been tested with vaccine from E. coli.

It seemed strange to me that bullous reactions to streptococcic antigens could be elicited in the two cases of dermatitis herpetiformis I have seen in children over a long period. In considerable experience with bacterial tests in children suffering from various forms of eczema and respiratory allergies, I have never observed bullous responses to any bacterial antigens. Therefore, I believe these reactions may be considered specific.

One may agree with Leone (4) that these bullous reactions represent just a Koebner phenomenon.
As Swartz and Lever pointed out, this does not appear likely. The Koebner phenomenon, if it exists at all in dermatitis herpetiformis, must be very rare. I have found only the report of Callaway and his collaborators (9) about a Koebner phenomenon in a dermatitis herpetiformis-like eruption. In this case the sites of previous intradermal tests to various antigens produced vesicular reactions at the time of a bullous flareup of the eruption. There had been more than 50 intradermal tests, and all of them turned into blisters. The bullous reactions to bacterial antigens described in the literature and in this paper, however, are specific in the sense that usually only one antigen produces a bullous reaction, and repeatedly so, whereas others cause a normal delayed type of papular reaction.

Swartz and Lever, like Callaway and Sternberg, expressed the belief that these reactions are an indication of bacterial allergy in dermatitis herpetiformis, an opinion which is supported by the therapeutic effect of a specific vaccine in Callaway and Sternberg's case.

There is not enough known about these bullous reactions in dermatitis herpetiformis to speculate what role bacterial allergy may play in certain cases of dermatitis herpetiformis. There are no histologic studies, nor are there reports concerning these reactions after the eruption had cleared, and there is not enough experience with desensitization. Yet I believe the observations reported in the literature and in this paper should induce others to perform bacterial tests in cases of dermatitis herpetiformis, if possible with histologic studies. Perhaps there is a large group of patients with dermatitis herpetiformis with demonstrable bacterial allergy. It would be interesting to study the course of the disease in these cases.

SUMMARY AND CONCLUSION

Two cases of typical dermatitis herpetiformis in children who responded with repeated bullous delayed reactions to skin tests with streptococcic antigens are reported. It is suggested that bacterial tests be carried out regularly in patients with dermatitis herpetiformis to establish the incidence and possible significance of such reactions.

REFERENCES

4. BERNHARDT, R.: Quoted from Swartz and Lever (7).
5. LEONE, R.: Quoted from Swartz and Lever (7).