Histopathological Changes in the Jejunal Mucosa in Dermatitis Herpetiformis

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SMALL bowel changes similar to those of idiopathic steatorrhea have been described in some patients with dermatitis herpetiformis.[1, 2] These changes persist in spite of successful management of this skin disorder with dapsone (diaminodiphenylsulfone).[3]

The purpose of this study is to report the jejunal biopsy findings in 10 patients with dermatitis herpetiformis.

(Table I). The patients were admitted to hospital for two or three days while the clinical manifestations were re-evaluated, with particular regard to the distribution and morphology of lesions. In each case a characteristic skin lesion was excised.

The criteria used in making a diagnosis of dermatitis herpetiformis were as follows: (1) Typical distribution—scalp, shoulders, scapular

TABLE I.—CLINICAL FEATURES OF 10 PATIENTS WITH DERMATITIS HERPETIFORMIS

Patient	*Sex*	*Age*	*Duration (years)*	*Previous oral treatment*	*Present treatment*	*Response*	*Other diseases*
1	M	43	25	Sulfapyridine	Dapsone	Good	None
2	M	52	22	Sulfapyridine, Fowler's solution, acetosulfone	Sulfapyridine	Good	Arsenical keratoses. Carcinoma of lung (peripheral) removed two years ago—apparent cure
3	M	50	2½	Sulfapyridine, dapsone	Dapsone	Good	Diabetes mellitus. Idiopathic steatorrhea
4	M	72	7	Triamcinolone acetosulfone, sulfapyridine	Triamcinolone	Good	Perforated duodenal ulcer. Vagotomy and pyloroplasty. Diverticulitis
5	M	44	22	Sulfapyridine, Fowler's solution, acetosulfone	Dapsone	Good	None
6	M	70	24	Sulfapyridine, prednisone	Dapsone	Good	Cerebral atrophy with epilepsy
7	M	51	22	Dapsone	Acetosulfone	Good	None
8	M	73	1	Prednisone, dapsone	Prednisone	Good	Tuberculosis of lung (1920). Mild diabetes
9	M	79	2/12	Dapsone	Dapsone	Good	Congestive heart failure
10	M	51	8	Dapsone, dexamethasone	Dapsone, dexamethasone	Good	Varicose veins

MATERIALS AND METHODS

Ten adult white male patients with dermatitis herpetiformis were studied. They had all been followed up for some time in the Dermatology Clinic, Shaughnessy Hospital. The diagnosis in each case rested on the observations of several dermatologists. In all cases the disease was well controlled by one of the usual medications

skin, extensor surfaces of extremities (especially elbows and knees) and lumbar skin, (2) grouped lesions, (3) pruritus, (4) biopsy evidence of subepidermal bulla formation, (5) favourable therapeutic response to oral administration of sulfapyridine or dapsone. In some instances medications had to be temporarily withdrawn to reveal the full clinical picture.

First, the prothrombin time was checked and found normal. Peroral biopsy of the proximal jejunum with the Multipurpose Suction Biopsy Tube* with mercury motor bolus was under-

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*Model No. 4.7 mm. x 120 cm., W. E. Quinton Instrument Co., 3051 44th Avenue West, Seattle, Washington, U.S.A.

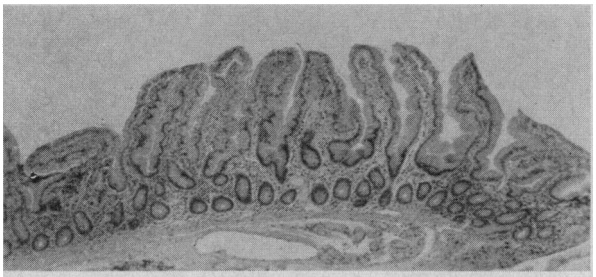

Fig. 1a

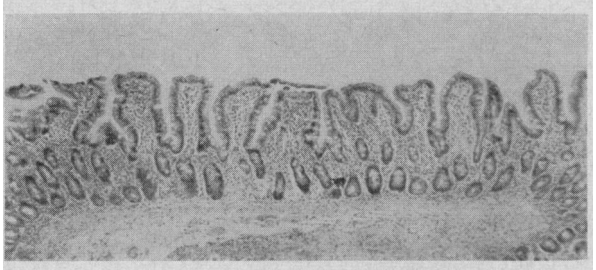

Fig. 1b

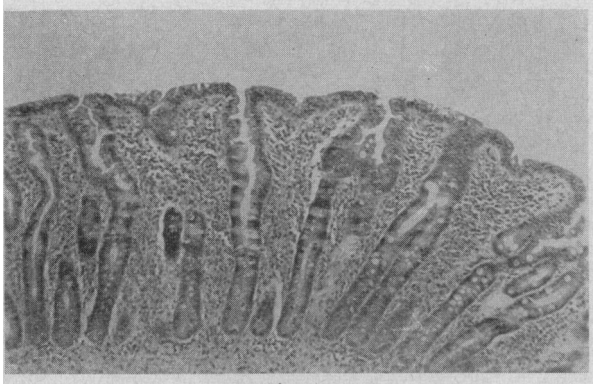

Fig. 1c

Fig. 1.—Histological appearance of the jejunal mucosa: (a) Case 8, normal jejunal mucosa; (b) Case 7, mild abnormality with blunting of villi and increased inflammatory infiltrate (H. & E., × 120); (c) Case 10, sprue-like abnormality with absence of villi and marked increase in inflammatory infiltrate. (H. & E., × 200.)

taken.[4] The position of the tube was confirmed by fluoroscopy; in all patients the end of the tube was located in the proximal loop of the jejunum. The specimen was orientated on filter paper with a hand lens and placed in 10% aqueous formalin for fixation. Histological sections, 5 μ in thickness, were cut and stained with hematoxylin and eosin. Several sections were cut from each jejunal biopsy specimen to ensure that the "central cylindric core"[5] was examined. Additional sections were cut from patients in Cases 2 and 6 because of difficulty in interpreting the slide. All specimens were examined by three experienced independent observers. Classification of the abnormalities observed was based on the changes in height of villi, depth of crypts, inflammatory infiltrate and epithelial changes. Fig. 1 illustrates the gradations of pathological changes.

RESULTS

Clinical details of the patients are shown in Table I. All patients were adult males (age range: 43 to 79 years). The duration of their skin condition varied from two months to 25 years. Treatment, both past and present, varied considerably, but at the time of this investigation all patients were considered to be under good control with medications listed in Table I.

The results of pathological examination of the biopsied tissue are shown in Table II. All patients were observed to have subepidermal bullae compatible with a diagnosis of dermatitis herpetiformis (Fig. 2).

TABLE II.—PATHOLOGICAL FINDINGS IN 10 PATIENTS WITH DERMATITIS HERPETIFORMIS

	Jejunum			*Skin*
Case	*Sprue-like*	*Mild abnormality*	*Normal*	*Subepidermal bulla*
1			x	x
2		x		x
3	x			x
4			x	x
5	x			x
6			x	x
7		x		x
8			x	x
9			x	x
10	x			x

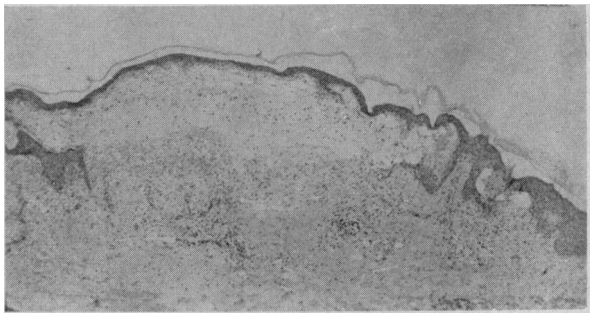

Fig. 2.—Case 5. Subepidermal bulla in dermatitis herpetiformis. (H. & E., × 120.)

In three patients the jejunal changes were marked and identical to those observed in patients with idiopathic steatorrhea (gluten-induced enteropathy). Slight abnormalities, consisting of blunting of villi and increased inflammatory infiltrate, were observed in two patients. No abnormalities were observed in the remaining five patients.

DISCUSSION

All of the patients with dermatitis herpetiformis who were studied were attending a veterans' hospital. They had had a favourable

response to sulfapyridine or dapsone, with the exception of one patient (Case 8). This patient had had a course of dapsone with no response and subsequently he was given a trial of sulfapyridine but developed dermatitis medicamentosa while taking this drug.

Only one patient (Case 3) had symptoms of steatorrhea. He was shown to have idiopathic steatorrhea radiologically, biochemically and by jejunal biopsy two years before the development of dermatitis herpetiformis. His intestinal symptoms completely disappeared when he was given a gluten-free diet. For the past 4½ years he remained on a diet low enough in gluten to keep him free of intestinal symptoms; nevertheless, he developed dermatitis herpetiformis 2½ years ago. His cutaneous eruption has borne no relationship to variations in gluten intake. This patient also has diabetes mellitus—a rare cause of malabsorption. This case will be reported in greater detail in the future.

The effect of dapsone or sulfapyridine on the histological appearance of the jejunal mucosa is unknown at present. It has been suggested that these drugs alone may be responsible for the histological abnormalities seen.[6, 7] Two of our five patients with normal jejunal biopsies were not receiving dapsone or sulfapyridine; three were receiving dapsone.

It is known that certain operative procedures on the small bowel and the administration of diphenylhydantoin sodium may cause megaloblastic anemia. There is a possibility that these factors may induce malabsorption. It has recently been shown that these patients have a normal jejunal mucosa histologically.[8] Both the patient who was receiving diphenylhydantoin sodium (Case 6) and the patient who had previously had a vagotomy and pyloroplasty (Case 4) had normal jejunal mucosae.

Recently, extensive investigation of small-bowel function in dermatitis herpetiformis has resulted in the demonstration of diminished disaccharidase activity,[6] increased fecal fat excretion, folate and iron deficiencies and an abnormally high incidence of agglutinating factor to *Lactobacillus casei* in the sera of some patients. A high incidence of IgM deficiency[7] has also been demonstrated.

Summary Ten patients with clinical and histological evidence of dermatitis herpetiformis were studied by jejunal biopsy. In three patients the jejunal tissue was markedly abnormal and showed changes identical to those seen in idiopathic steatorrhea; two of these patients had no intestinal symptoms and the remaining patient had the symptom complex of the malabsorption syndrome controlled by a diet low in gluten. In two patients there were mild abnormalities and in five the jejunal biopsies were normal. Of the latter group, three patients were receiving dapsone while two were receiving neither dapsone nor sulfapyridine.

Résumé On a étudié, par biopsie du jéjunum, 10 malades présentant des signes cliniques et histologiques de dermite herpétiforme. Le tissu du jéjunum était manifestement anormal chez trois de cas malades et ces modifications étaient identiques à celles qu'on observe dans la stéatorrhée idiopathique. Deux de ces malades n'avaient aucun symptôme intestinal et le dernier présentait la symptomatologie complexe du syndrome de malabsorption qui pouvait être enrayé par un régime pauvre en gluten. Les anomalies étaient peu marquées chez deux malades et chez cinq autres, les biopsies jéjunales étaient normales.

Sur les cinq malades dont la biopsie jéjunale était normale, trois ont reçu du dapsone et les deux autres n'ont reçu ni le dapsone ni la sulfapyridine.

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