Jejunal villous atrophy and granulomatous inflammation responding to a gluten-free diet

A. BJØRNEKLETT, O. FAUSA, S. B. REFSUM, H. TORSVIK, AND H. SIGSTAD

From the Medical Department A and Department of Pathology, National Hospital of Norway, Rikshospitalet, and Aust-Agder Sentralsjukehus, Arendal, Norway

SUMMARY A 48 year old female patient with intestinal malabsorption and subtotal to total jejunal villous atrophy also had granulomatous inflammation characterised by numerous epitheloid and giant cell granulomas in the stomach, the jejunum, and the liver. On a gluten-free diet a complete remission was achieved that included disappearance of the granulomatous inflammation. It is suggested that the granulomas in this case were manifestations of the gluten intolerance.

Coeliac disease is characterised by subtotal or total villous atrophy with infiltration of chronic inflammatory cells in lamina propria, intestinal malabsorption, and an unequivocal response to a gluten-free diet (Creamer, 1974). Villous atrophy may also be seen in granulomatous diseases of the small bowel (Gjone *et al.*, 1965). We here report a case of adult coeliac disease and epitheloid and giant cell granulomas in many organs that responded to a gluten-free diet.

Case report

A 48 year old female had suffered from intermittent diarrhoea since childhood. In 1973 she was admitted to hospital because of increasing diarrhoea, abdominal discomfort, and weight loss of five months' duration.

The laboratory findings suggested intestinal malabsorption (Table). A secretin test and the liver function tests were normal.

Radiography of the stomach revealed changes highly suspicious of scirrhus cancer. The antrum was narrowed down with no peristaltic waves, whereas the jejunum was dilated with coarse folds and the contrast medium showed segmentation and flocculation.

Gastroscopy showed patchy white, rigid, and thickened mucosa. Gastric biopsies failed to show malignancy. However, mucosal atrophy and chronic inflammation with giant and epitheloid cell granulomas without necrosis were found (Fig. 1). Jejunal biopsies showed subtotal or total villous atrophy,

chronic inflammatory cell infiltration in the lamina propria, and scattered granulomas without necrosis (Fig. 2). Liver biopsy also demonstrated similar granulomas, but was otherwise normal (Fig. 3). The tuberculin test was positive, as it had been for 30 years. However, radiographs of the chest and a search for tuberculosis were negative. Histocompatibility typing revealed HLA-B8.

The patient was treated with a gluten-free diet only. She recovered rapidly, with a weight-gain of 10 kg during the first five months. On follow-up the malabsorption tests were normal (Table) as were radiographs of the stomach and intestine. Repeated gastroscopies showed smooth contours and normal peristalsis in the antrum and only a slight degree of mucosal atrophy. The jejunal mucosa had partially regenerated (Fig. 4). No granulomas were found in the stomach, the small intestine, or the liver in a series of biopsies during the follow-up. The patient

Table Laboratory data before and after treatment with gluten-free diet (GFD)

	GFD		Normal range
	Before	After	
Haemoglobin (g/dl)	11.5	12.3	11.6-14.9
ESR (mm/h)	6	3	3-20
Serum-albumin (g/l)	29	40	34-43
Serum-calcium (nmol/l)	1.8	2.3	2.2-2.6
Alkaline phosphatase (U/l)	28	6	10-45
Serum-folate (nmol/l)	4.3	10.2	6.8-29.5
Red cell folate (nmol/l)	152	341	295-545
Schilling-test (%/24 h)	8	12	> 10
Xylose-test (mmol/5 h)	23	47	> 30
Faecal fat (g/24 h)	15.4	1	< 8

Received for publication 23 March 1977

Fig. 1 *Before treatment. Atrophic gastric mucosa with giant- and epithelioidcell granuloma in deeper part. Haematoxylin, azofloxine, and saffron, $\times 75$ (original magnification).*

Fig. 2 *Before treatment. Jejunal mucosa with subtotal villous atrophy, moderate chronic inflammation, and submucosal epithelioidcell granuloma. Haematoxylin, azofloxine, and saffron, $\times 75$.*

Fig. 3

Fig. 3 Before treatment. Epithelioid cell granuloma in liver parenchyma. Haematoxylin, azoforescence, and saffron, $\times 480$ (original magnification).

Fig. 4

Fig. 4 After gluten restriction for two years. Jejunal mucosa with partly leaf-shaped villi. Haematoxylin, azoforescence, and saffron, $\times 75$ (original magnification).

is without symptoms more than three years after the gluten-free diet was instituted.

Discussion and conclusion

The history of illness, the flat jejunal mucosa, and the good response to a gluten-free diet confirm the diagnosis of coeliac disease in this patient. In addition, she had granulomas in different tissues. The question is whether the patient had one or two diseases. The *British Medical Journal* (1967) described a patient presenting as coeliac disease who responded well to a gluten-free diet, but who later developed multiple tubular strictures in the small intestine that were thought to be Crohn's disease. In the present case, the diagnosis of Crohn's disease or sarcoidosis are unlikely as no other symptom compatible with these diseases occurred. Even if symptoms in Crohn's disease abate for a period, most of the pathological changes—that is, the granulomas—tend to persist. Gjone *et al.* (1965)

reported a case of sarcoidosis with severe malabsorption and total jejunal villous atrophy. However, their patient did not respond to a gluten-free diet.

Tuberculosis was not likely in this case as the chest radiograph was negative and there was no progression.

However, as the granulomas disappeared after a gluten-free diet had been introduced, it seems reasonable to consider that the granulomatous inflammation was a manifestation of the gluten intolerance. To our knowledge, this association has not been reported before.

References

- British Medical Journal* (1967). Clinicopathological Conference. A case of Crohn's disease in a patient with treated adult coeliac disease. *British Medical Journal*, 4, 222-226.
- Creamer, B. (1974). *The Small Intestine*, pp. 91-92. Heinemann: London.
- Gjone, E., Myren, J., and Refsum, S. B. (1965). Total jejunal villous atrophy in secondary steatorrhoea. *Acta Pathologica et Microbiologica Scandinavica*, 65, 24-30.