

Coeliac disease in the elderly

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Abstract

Of 228 patients with adult coeliac disease, 42 (19%) were diagnosed aged 60 years or over. In this series, of 35 patients who did not have dermatitis herpetiformis, 15 had attended family doctors and hospital outpatient departments for an average of 28 years with unexplained symptoms or abnormalities in blood tests but the diagnosis of coeliac disease had been missed. This is unsatisfactory because these patients can both manage and respond to a gluten free diet. Thirty eight patients complied strictly with the diet with resolution of symptoms. Significant improvement in weight, haemoglobin, albumin, calcium, and alkaline phosphatase values after a year on the diet also occurred. Clinicians should be alert to the possibility of coeliac disease in the elderly particularly in patients with non-specific complaints in the presence of unexplained anaemia.

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diagnosis by biopsy was made in 1958. Forty two patients from this group were diagnosed in their seventh decade and beyond and form the basis of this study. These cases were diagnosed between 1963 and 1991 but 35 were diagnosed in 1980 or later.

All but three of the 42 patients were regularly reviewed in the coeliac clinic, which was established in 1978. Of the three not seen in the clinic, one died in 1978 and the other two died in 1981 and 1982 under the care of other physicians. Hospital notes were available for all patients. Details of their clinical presentation, past medical and family history were recorded together with haematological and biochemical results obtained from profiles produced by laboratories at the hospital. IgA antigliadin antibody concentrations were measured by a method developed and validated in the department, the upper limit of normal being 90 arbitrary units/l.² Compliance and response to a gluten free diet were assessed at each visit by careful questioning.

Coeliac disease has traditionally been regarded as a disorder of childhood and early adult life. Increasing numbers of patients, however, are being diagnosed in the elderly.¹ The aim of this study was to analyse an unselected series of coeliac disease patients presenting in their seventh decade or beyond to a District General Hospital. The mode of presentation, laboratory findings, and compliance and response to a gluten free diet were assessed.

DIAGNOSIS

A flat biopsy specimen was obtained from each of the 42 patients. In 30 cases the first biopsy was taken using a fiberoptic endoscope. In 20, the biopsy was repeated and showed improvement after the beginning of a gluten free diet. Of those without repeat biopsy, four had associated dermatitis herpetiformis and 11 considerably raised concentrations of antigliadin antibody, which fell after gluten withdrawal, thus supporting the diagnosis of coeliac disease. In 11 patients, all of whom showed a good clinical response to a gluten free diet, repeat biopsy was deemed unwise because of frailty or associated health problems. Clinical response was assessed by analysing changes in weight, haemoglobin, albumin, calcium, and alkaline phosphatase values after one and two years on gluten free diet.

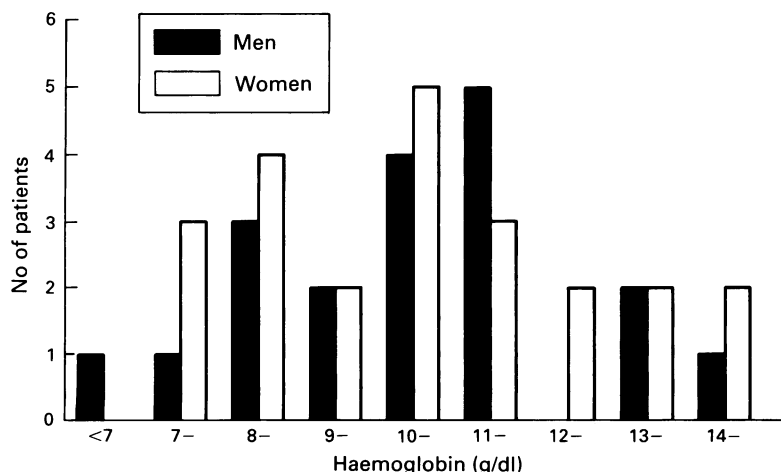
Patients and methods

By the end of December 1991, 259 patients were on the coeliac register at the Derbyshire Royal Infirmary, of whom 228 were diagnosed in adult life (aged 15 years or over). The first adult

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Haemoglobin values in 38 elderly patients with coeliac disease at diagnosis.



AGE AND SEX

Of the 228 patients diagnosed in adult life, the age at diagnosis ranged from 15 to 82 years. The 42 cases diagnosed aged 60 years or over represent 19% of all those diagnosed in adult life. In this group there were 19 men and 23 women. The ratio of men to women in the whole clinic was 1:1.7 compared with 1:1.2 in the elderly group.

MODE OF PRESENTATION

The development of gastrointestinal symptoms was the commonest reason for presentation and led to the diagnosis in 25 patients. In 19 of these, diarrhoea and abdominal pain and discomfort

were the predominant symptoms while six patients complained only of vague abdominal bloating and flatulence. A further 10 cases did not report gastrointestinal symptoms but presented with non-specific complaints of fatigue and lassitude only and were investigated because of unexplained anaemia. The mean haemoglobin concentration in this group was 9.7 g/dl. In four of these 10 patients the anaemia was due to folate deficiency, in three to iron deficiency, and in the remaining three to a combination of these deficiencies. Dermatitis herpetiformis led to the diagnosis of coeliac disease in seven patients.

Overall 80% of men had a haemoglobin concentration of 12.5 g/dl or less at diagnosis and 75% of women had a concentration of 11.5 g/dl or less. The Figure shows the haemoglobin values for all the 42 cases at diagnosis.

DELAY IN DIAGNOSIS

It was noted that of those 35 patients who did not have dermatitis herpetiformis, 15 had attended their general practitioners and hospital out-patient clinics on several occasions over an average period of 28 years (0.5–50 years) with unexplained symptoms or abnormalities in blood tests but the diagnosis of coeliac disease had been missed.

The interval between the diagnosis of dermatitis herpetiformis and coeliac disease in one instance was 34 years. One patient was only diagnosed when he presented with small bowel lymphoma. A small intestinal biopsy specimen was obtained in another only when diarrhoea developed. Two patients were invited to attend the coeliac clinic when perusal of their hospital notes showed that dermatitis herpetiformis had earlier been diagnosed in the skin clinic. Coeliac disease was confirmed in both of these by biopsy.

Six patients who ultimately presented with gastrointestinal symptoms reported long histories from 9 to 50 years. Three were misdiagnosed as having colitis; one in childhood, and two others at age 38 and 42 years respectively. Another patient was considered to have irritable bowel syndrome at the age of 54 years. Two patients had experienced diarrhoea for 25 and 27 years respectively, which had remained unexplained. Review of the case notes showed that coeliac disease had not been considered in any of these patients and the diagnoses that had been made were not supported by satisfactory evidence.

Fourteen patients gave histories of unexplained anaemia. Three remembered having iron injections in childhood, two had received iron during pregnancy, and the other nine had taken courses of iron or folic acid, or both for many years. In nine of these cases it was the added development of gastrointestinal symptoms that finally led to small bowel biopsy and the diagnosis of coeliac disease.

One female patient diagnosed as coeliac at the age of 65 years, was noted to be 'a sickly child with short stature'.

GLUTEN FREE DIET – COMPLIANCE AND RESPONSE
Only two of the 42 patients continued on a

normal diet. One of these presented with a perforated small bowel lymphoma and died shortly after diagnosis. A second patient, who presented with anaemia, lived alone and in poor social circumstances and could not manage a gluten free diet. Of the remaining 40 cases, 38 complied strictly with their diet and this was supported by an improvement in the morphology of repeat small intestinal biopsy specimens or symptoms, or both and weight and laboratory indices.

All 38 patients who complied strictly with the gluten free diet reported a considerable improvement in wellbeing and resolution of symptoms after starting the diet. Weight and haematological and biochemical indices were analysed at diagnosis and after one and two years on the diet by means of the paired *t* test (Table). Weight increased by an average of 5.2 kg. The indices examined all improved significantly to within the normal range after one year on diet. These improvements were maintained after two years.

Discussion

Estimates of the proportion of patients with coeliac disease who present in their seventh decade or beyond have increased from 4% in 1960³ to 27% in 1980.⁴ In 1991, of 2312 new coeliac disease patients joining the Coeliac Society of the United Kingdom, 541 (21%) were aged 60 years or over.⁵ It is probable that patients join the Coeliac Society at the time of diagnosis so that this figure gives an accurate measure of those diagnosed in this age group and is very similar to our value of 19%. These findings almost certainly reflect an increased awareness of coeliac disease in recent years and the greater use of fibre optic endoscopes to obtain small intestinal biopsy specimens.⁶

Swinson *et al*⁴ showed a bimodal distribution with a peak in the fourth decade mainly of women and a later peak in the sixth and seventh decades consisting mainly of men. The ratio of male to female new members of the Coeliac Society also suggests a tendency towards later diagnosis in men with a ratio of 1:2.9 in patients presenting before the age of 60 years, compared with 1:1.2 in those presenting over this age. Our figures also support this view, the male to female ratio falling from 1.17 to 1.12 over the age of 60 years. Possible explanations for these findings are that women are more likely to consult their doctors and so have blood tests, which may lead to an earlier diagnosis of coeliac disease than in men. Also, the extra nutritional demands brought about by pregnancy may precipitate symptoms and is another factor contributing to earlier diagnosis in women.

Few studies have looked specifically at the

Indices at diagnosis and at one year on gluten free diet (GFD) (normal values: Alb 30–45; Ca 2.25–2.6; AP 90–300)

	Mean at diagnosis	Mean one year on GFD	<i>p</i> value
Weight (kg)	54.1	59.3	<0.001
Haemoglobin (g/dl)	10.7	13.1	<0.001
Albumin (g/l)	32	36	<0.001
Calcium (mmol/l)	2.18	2.36	<0.001
Alkaline phosphatase (IU/l)	368	232	<0.003

elderly. Kirby *et al*⁷ reported 18 patients aged 40 years or over although these could hardly be classed as elderly subjects. Symptoms attributable to the gastrointestinal tract were present in 56% compared with 59% in our study, although 14% of our group complained only of abdominal distension and flatulence.

Anaemia occurred frequently in this elderly group affecting 80% of men and 75% of women. In studies that have considered all ages at presentation, anaemia affects about half of cases, although exact comparisons are difficult because of the different criteria that have been used to define anaemia.⁸⁻¹⁰ In this study about a quarter of patients had a biopsy for a sole haematological abnormality. It is particularly in this age group that coeliac disease may easily be overlooked, for anaemia may be dismissed as occurring secondary to dietary insufficiency without further investigation. Linaker and Calam¹¹ found coeliac disease in 12% of patients aged 65 years or over having jejunal biopsy for anaemia.

About half of our patients had attended hospital on several occasions when either no satisfactory diagnosis was established or an erroneous diagnosis was made. The delay in diagnosis was because even the possibility of coeliac disease was not considered in these cases and this prolonged patient misery and uncertainty.

The value of diagnosing a condition that presents late in life with often only trivial symptoms, may be questioned especially when this entails changing long established eating habits. A counter to his viewpoint is that patients often only realise how unwell they were in retrospect after commencing a gluten free diet and had come to accept quite marked ill health as normal. The patients in our series who started on a gluten free diet, all benefited clinically and it was possible to show improvement objectively when weight and other indices were analysed. The ability of the elderly to manage a gluten free diet has been shown in that 38 of 40 patients who started a gluten free diet complied well and benefited clinically. In addition they maintained improvement in the haematological and biochemical indices studied. The reduction of alkaline phosphatase, pointing to healing of osteomalacia, is noteworthy and many offer some protection against fractures, which is a particular problem in later life.

There may be a reluctance to carry out endoscopy in the elderly to obtain small bowel biopsy specimens on the grounds that the procedure is unsafe in the old and frail. It has been shown that endoscopy is safe even in high risk groups if performed by a skilled practitioner.¹² In this series one patient suffered a bowel perforation as a result of an endoscopic biopsy that was done to check response to the gluten free diet. She made a complete recovery without recourse to surgery and is reported elsewhere.¹³ When a repeat biopsy was taken in these patients it did not affect management and this practice, which has

often been followed just to satisfy some definitions of coeliac disease, should be reviewed. In 11 patients it was difficult to justify repeat biopsy especially when they had shown a very good clinical response to gluten withdrawal.

Antigliadin antibody concentrations were measured in 17 patients and the question arises if the diagnosis of coeliac disease could have been made with these results alone. It has been shown that measuring these antibodies to establish the diagnosis of coeliac disease is helpful but not completely reliable as a few cases would be missed.² Of 61 adult patients with untreated coeliac disease, 57 had abnormal results giving a sensitivity of 0.93. Those without coeliac disease may also have an abnormal result although in those with a normal small bowel on biopsy examination, or not suspected of having intestinal disease the specificity is 0.95.² In this series antigliadin antibody concentrations were abnormal in 13, thus supporting the diagnosis. The test therefore, from this and other evidence cannot be relied on completely.

Finally, it is important to consider the diagnosis of coeliac disease in the elderly not only in those with gastrointestinal symptoms but more so in those with non-specific complaints and particularly unexplained anaemia. Clinicians need to be aware that this condition is not a rarity in later life but is a quite common cause of ill health and misery. The old adage that 'if you think about it, you will diagnose it', especially applies here. In this series coeliac disease could have been diagnosed and treated much earlier in some patients. Apart from rendering patients asymptomatic, earlier treatment with a gluten free diet might also protect them from developing malignant complications in old age.^{14 15}

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