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## Lesson of the week

# Atypical presentation of coeliac disease

R M Furse, A S Mee

Adult coeliac disease is usually associated with a presentation of weight loss, diarrhoea, and malabsorption of nutrients. We are now seeing, however, increased numbers of silent, or subclinical, cases, which are often picked up by the finding of an unexplained anaemia.<sup>1</sup> Despite this change, few clinicians would expect obesity to be part of the presentation. Here we describe four cases that show that we should not be dissuaded from a potential diagnosis of coeliac disease on the basis of a patient's body weight. This is especially pertinent in today's society, where 22% of men and 23% of woman in the United Kingdom are now obese (body mass index > 30).<sup>2</sup>

## Case histories

### Case 1

A 53 year old woman was referred to the gastroenterology department with an 18 month history of diarrhoea and a background of almost lifelong irregular bowel habit. She had always been overweight, and there had been no recent change. She weighed 131 kg (body mass index 47). Routine blood tests gave normal results apart from mild iron deficiency. She had a test for endomysial antibodies as part of her investigations,

and the result was positive. Duodenal biopsies confirmed partial villous atrophy. A bone density (dual energy x ray absorptiometry) scan could not be done because of her weight.

She was put on a strict gluten-free diet and within four months had lost 17 kg. She continued to lose 6.5 kg over the next six months. Her diarrhoea resolved completely.

### Case 2

A 51 year old woman was referred by her general practitioner with longstanding dyspepsia and reflux worsened by alcohol and bread. She had always been overweight but had recently noticed a large gain. She weighed 116 kg (body mass index 41) at referral. Results of routine blood tests were normal, other than a vitamin-B12 concentration of 139 (normal 163-490) pmol/l. A test for endomysial antibodies was positive. Duodenal histology confirmed partial villous atrophy, and a bone density scan showed no abnormality.

She was treated with a gluten-free diet and a proton pump inhibitor for her grade 3 reflux oesophagitis. Her weight remained unchanged at follow up, but her symptoms resolved completely.

Editorial by Watson and p 775

## The presence of obesity does not exclude coeliac disease

Department of Gastroenterology, Royal Berkshire Hospital, Reading RG1 5AN  
R M Furse  
*locum specialist registrar*  
A S Mee  
*consultant gastroenterologist*

Correspondence to: A S Mee  
anthony.mee@rbh-tr.nhs.uk

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**Case 3**

A 51 year old woman with a chronic leg ulcer attended the gastroenterology clinic after her general practitioner had picked up microcytic anaemia (haemoglobin 4.5 mmol/l, mean corpuscular volume 67.4 fl) after routine blood tests. She was asymptomatic and had no alteration in her bowel habit. She had a good dietary iron intake and the remainder of her medical history was non-contributory.

Examination showed no abnormality, although she was obese, weighing 103.7 kg (body mass index 42). Endoscopy showed an abnormal looking duodenal mucosa with scalloped folds suggestive of villous atrophy, and this was confirmed by biopsy. Her anaemia resolved with a gluten-free diet and iron supplements. Her weight increased to 107 kg (body mass index 44).

**Case 4**

A 36 year old woman was referred because of fatigue, bloating, and an irregular bowel habit. She was passing loose stools up to four times a day. She denied any weight loss and weighed 111 kg (body mass index 38). All of her routine blood tests gave normal results, but on further questioning it became apparent that her father had recently had coeliac disease diagnosed. An endomysial antibody test was therefore ordered. The result was positive, and subsequent duodenal histology confirmed subtotal villous atrophy. She was treated with a gluten-free diet and her symptoms resolved.

**Discussion**

These cases are unusual but show that not all patients with coeliac disease will be thin or have lost weight at presentation. Coeliac disease is characterised histologically by total or subtotal villous atrophy. These changes tend to be greatest in the proximal small bowel.<sup>3,4</sup> Our patients were probably able to compensate for proximal malabsorption by using intact absorptive mechanisms more distally. It is also known that an individual's coefficient for fat absorption remains relatively static and so the ability to maintain energy intake is preserved.<sup>4</sup>

This theory seems to be confirmed by studies in children. Two reports have been published of adolescents with known coeliac disease who became obese despite being malnourished as babies.<sup>5,6</sup> This obesity had developed despite the persistence of villous atrophy on jejunal biopsy. It is postulated that as the surface area of the small bowel increases with age,

children develop the ability to ingest adequate compensatory energy.<sup>4</sup> Children whose energy intake is excessive will become obese.

**Gluten-free diet**

The question arises whether obese patients with coeliac disease should be started on a gluten-free diet because of the assumption that they will gain more weight. In one case report of an obese 18 year old with silent coeliac disease, a gluten-rich diet was used to control his weight.<sup>6</sup> Clearly, such an approach risks complications in later life, including not only the consequences of nutrient deficiencies but also small bowel lymphoma. The risk of such complications seems to be reduced by strict adherence to an exclusion diet.<sup>7</sup>

In fact, weight gain on treatment is not borne out by our cases. It is not clear why the patient in case 1 lost weight on a gluten-free diet. It may have been due to more sensible eating habits and a general reduction in dietary intake of refined carbohydrates. An increased feeling of wellbeing and a reduction in depression (which is common in coeliac disease) may also have reduced comfort eating.<sup>4</sup>

The heterogeneity of presentation of coeliac disease is increasing. It is not certain why only a few patients are overweight, but it probably reflects an underlying tendency to obesity in some individuals.<sup>4</sup> We recommend that all patients with suggestive symptoms, nutrient deficiencies, or positive family history have serological testing for coeliac disease irrespective of their body weight.

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