Coeliac disease with autoimmune haemolytic anaemia

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Summary

Two patients are described who have developed autoimmune haemolytic anaemia in association with their coeliac disease. Autoimmune haemolytic anaemia may represent an extension of immunological disorders linked with coeliac disease, centred on the histocompatibility antigen B8.

KEY WORDS: coeliac disease, autoimmune haemolytic anaemia.

Introduction

Coeliac disease has been found in association with chronic liver disease, connective tissue disorders, diabetes mellitus, thyroid diseases, psoriasis, ulcerative colitis and Addison's disease, all of which are considered to have an immunological basis (Cooper, Holmes and Cooke, 1978).

Two patients are described, who have developed autoimmune haemolytic anaemia in association with their coeliac disease: one also had psoriasis, and the other hypothyroidism and chronic aggressive hepatitis.

Case 1

A 17-year-old man with a 10-year history of psoriasis presented with 2-month lethargy and weight loss without diarrhoea and was found to have a macrocytic anaemia. Investigations revealed haemoglobin 10.6 g/dl, mean cell volume (MCV) 109 fl, erythrocyte sedimentation rate (ESR) 65 mm/hr, white cell count (WBC) 5.1×10^9 /litre, red cell folate < 50 µg/litre, serum vitamin B₁₂ 330 ng/litre, ferritin 170 µg/litre. Bone marrow florid megaloblastic changes, calcium 2.17 mmol/litre, (8.68 mg/100 ml), albumin 42 g/litre, xylose excretion 15% of 25 g dose over 5 hr. Jejunal biopsy: subtotal villous atrophy with crypt hyperplasia and inflammatory cell infiltrate.

A diagnosis of coeliac disease was made and following a gluten-free diet and oral folic acid, he gained 13.4 kg in weight over 4 months and his

haemoglobin rose to 15.5 g/dl. The MCV fell to 81 fl. He would not agree to a repeat jejunal biopsy.

One year later he became jaundiced and investigations revealed: haemoglobin 15.2 g/dl, MCV 105 fl, WBC 12.6×10^9 /litre, platelets 350×10^9 /litre, reticulocytes 20% with spherocytes, bilirubin 95 µmol/litre, 5.5 mg/100 ml, direct Coombs' test positive with IgG antibody, antinuclear and smooth muscle antibodies negative, serum protein electrophoresis, chest X-ray small bowel enema and lymphangiogram all normal. HLA status A B8 W6.

Steroid therapy produced only a partial remission in his haemolytic anaemia. Later a splenectomy was performed following which he has remained well and his haemoglobin rose from the pre-operative level of 12.8 g/dl to normal. The spleen was twice the normal size.

Case 2

A 43-year-old man presented in 1979 with symptoms of myxoedema. Thyroglobulin and microsomal antibodies in a titre of 1:1,280 and 1:6,400 respectively were found. A diagnosis of Hashimoto's thyroiditis was made and replacement thyroxine 0.2 mg daily commenced. The blood count at this time was normal.

In 1980 he developed jaundice and dark urine. Investigations revealed: haemoglobin 6.4 g/dl, MCV 104 fl, WBC 2.7×10^9 /litre, platelets 68×10^9 /litre, reticulocytes 14.4%, ESR 42 mm/hr, bilirubin 61 µmol/litre, (3.57 mg/100 ml), direct Coombs' test positive with non-specific antibody, Ham's acid test negative, anti-nuclear, smooth muscle and anti-mitochondrial antibodies negative, bone marrow: erythroid hyperplasia with slightly reduced granulopoiesis.

A partial remission of his haemolytic anaemia followed steroid therapy, with haemoglobin improving to 12.2 g/dl although thrombocytopenia persisted.

In May 1982 whilst on prednisolone 7.5 mg daily he complained of 6 months diarrhoea with stool frequency 6 times daily and 6 weeks ankle swelling

and 4 kg weight loss. Investigations revealed: albumin 27 g/litre, stool cultures no pathogens, small bowel enema normal. Jejunal biopsy: severe partial villous atrophy with crypt hyperplasia and plasma cell infiltrate.

A diagnosis of coeliac disease was made and following a gluten-free diet he symptomatically improved, gained 2 kg in weight over 1 month and his bowel frequency settled to twice daily.

In July 1982 he presented with a 1-week history of jaundice, pale stools, dark urine and lethargy. He denied any rashes, arthralgia, recent foreign travel or injections. Clinical examination confirmed jaundice with hepatosplenomegaly.

Investigations: bilirubin 575 $\mu\text{mol/litre}$ (33.63 mg/100 ml); alanine aminotransferase 2,140 iu/litre; and alkaline phosphatase 195 iu/litre, but no evidence of further haemolysis or hepatitis A, B, cytomegalovirus, leptospirosis or *Coxiella burnetti* infection. He unfortunately later died from hepatorenal failure. At post mortem, microscopy of the liver showing severe chronic aggressive hepatitis was confirmed; HLA status was not determined.

Discussion

Coeliac disease is increasingly believed to have an immunological basis. One of the supporting argu-

ments is the number of other indisputable immunological conditions which may complicate coeliac disease (Falchuk, 1979).

The histocompatibility antigen B8 has been found in association not only with coeliac disease, but with myasthenia gravis, thyroid disease, insulin-dependent diabetes mellitus, Addison's disease and chronic active hepatitis (Asquith, 1979). Autoimmune haemolytic anaemia may be a further manifestation in the spectrum of autoimmune disease associated with this genotype.

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