Association of coeliac disease and thyroid disorders

Robert Sciberras

A case study is presented. This involves a woman who presented with features of hyperthyroidism, which were refractory to conventional therapy. She was eventually diagnosed to have co-existing coeliac disease and eventually improved on a diet excluding gluten. A discussion exploring the association between gluten-enteropathy and thyroid dysfunction follows.

Case presentation

AC, a fifty-year-old, previously healthy premenopausal woman presented with a six week history of abdominal discomfort, and diarrhoea (up to ten times during the day and three times during the night). There was also significant weight loss: 10 kilograms over the same period. The stools were brown coloured and the patient denied rectal bleeding or melaena. The appetite was unaffected. The patient also felt very weak and depressed. Her appearance was that of a physically weak lady. She had exophtalmos of both eyes more marked on the right, mildly prominent thyroid gland, and tremor of the outstretched hands. Her pulse was 120 beats per minute, regular and of good volume. The rest of the examination was unremarkable. A diagnosis of thyrotoxicosis was made and the patient was started on carbimazole 10mg three times a day and propranolol 20mg three times a day. Thyroid function tests were taken and the results confirmed a hyperthyroid state: Thyroid Stimulating Hormone (TSH) was <0.004 uIU/ml (reference range 2.76-6.45), free thyroxine (FT4) was 64.6 pmol/l (reference range 10.3-24.45) and free tri-iodothyronine (FT3) was at a level of 17.7 pmol/l (reference range 2.76-6.45). A full blood count revealed a haemoglobin of 11.2 g/dL which is just below the reference range. The Mean Corpuscular Volume (MCV) was 81.5 fL which was also slightly below the normal range. Antithyroid antibodies (ATA) were 212 IU/mL (reference range <35).

A week later, the patient came for a follow-up visit. Unfortunately in spite of being compliant with treatment her clinical condition had not changed. She was still feeling very weak and all her symptoms were still present. In particular she had lost another two kilograms of weight. A malabsorption test was also slightly below the normal range. Antithyroid antibodies (ATA) were 212 IU/mL which proved refractory to anti-thyroid medication, possible due to malabsorption. CD was diagnosed eventually and the

Key words

Hyperthyroidism, coeliac disease, gluten, gluten-enteropathy
that thyroid disease was 3-fold higher in coeliac patients than controls.\textsuperscript{16} In distinct cases, gluten withdrawal reversed the thyroid abnormality.

CD has been associated with T-cell lymphoma of the intestine as well as hepatosplenic lymphoma, a specialised peripheral type of T cell lymphoma. Freeman reported a case where CD was associated with T-cell lymphoma of the thyroid.\textsuperscript{17} A study from New York identified an increased risk of papillary carcinoma of the thyroid, in patients with CD; the patients were following a proper gluten-free diet.\textsuperscript{17}

Finally a link has been found between CD, panic disorders and major depressive disorder. It has been postulated that association with subclinical thyroid disease appears to represent a significant risk factor for these psychiatric disorders.\textsuperscript{18}

Several authors are now urging screening for CD in patients with thyroid disorders and vice versa.\textsuperscript{19-26} Screening for CD should include testing for anti-tissue transglutaminase IgG and IgA, which is a blood test readily available in Malta. Should this be positive (>10.0 units/mL) or weakly positive (6.0-10.0 units/mL), a duodenal biopsy via gastroscopy should be taken. The histopathologist will then confirm or otherwise the diagnosis of CD since duodenal biopsy is the gold standard for definite diagnosis. In IgA–deficient patients clinical suspicion may warrant a duodenal biopsy in spite of negative serological tests since false negative results can occur.

Conclusion

There is an association between thyroid disorders and CD. When a patient presents with either condition, one should keep in mind the possibility of the co-existence of the other. This is true especially if thyroid signs and symptoms do not improve with what seems to be adequate treatment or if the patient requires much higher doses than usual. The lesson to be learnt from this case study above is that several diseases frequently co-exist with CD and that patients should be screened for several other conditions.

References


Corinthia Group Prize in Paediatrics, 2008

The Corinthia Group Prize in Paediatrics was awarded to Dr Luise Reichmuth, who obtained the highest aggregate mark over the combined examinations in Paediatrics in the fourth and final year of the undergraduate course. As always, competition for the Corinthia Group Prize was fierce, with six candidates vying for the honour! Whilst offering our congratulations to Dr Reichmuth, we would also like to congratulate all those undergraduates (now doctors) who performed admirably during the undergraduate course in Paediatrics. In the accompanying photograph, Dr Reichmuth is seen receiving a cheque for €233 from Professor Simon Attard Montalto, Head of Paediatrics at the Medical School. Finally, the Academic Department of Paediatrics and Medical School remain indebted and are extremely grateful to the Corinthia Group for their ongoing support.

Professor Simon Attard Montalto