Chronic Giardiasis with Vitamin B₁₂ and Folate Deficiency Presenting with Psychiatric Symptoms

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Giardiasis has been reported as causing both vitamin B₁₂ deficiency¹ and folate deficiency² in some patients. Depressive illness have been found in association with low vitamin B₁₂ and low folate levels^{3,4}. Organic psychiatric syndromes has been reported with vitamin B₁₂ deficiency⁵. We report a case of chronic giardiasis which presented as a psychiatric disturbance with both vitamin B₁₂ and folate deficiency.

Case Report

A 24 year old Caucasian woman presented with symptoms of increasing depression, the onset of which occurred some three weeks after the birth of her second child. The symptoms included malaise and lethargy along with neglect of herself and her home. She had feelings of emptiness as well as an increase in anxiety and some phobic symptoms, but her sleep pattern and appetite were unaffected. Five weeks after the birth, she began to experience in clear consciousness, fleeting visual hallucinations of small moving objects which she described as being like fast moving birds. Although she was thought to have puerperal depression, the description of fleeting visual hallucinations suggested a possible organic origin.

From the age of sixteen she had experienced frequent intermittent attacks of nausea, bloating and diarrhoea. She had had diarrhoea throughout her first pregnancy three years earlier and had suffered nausea and diarrhoea continuously since the tenth week of her second pregnancy.

Physical examination was normal. Her haemoglobin was 13.3 g/dl, MCH 35.3 pg, MCHC 33.3 g/dl. MCV 105.9 fl and she had 0.5% reticulocytes. Her total white count was $3.5 \times 10^9/L$ with a differential count of neutrophils 30%, lymphocytes 34%, monocytes 8% and eosinophils 28%. Tests of both thyroid and liver function were normal as were immunoglobulin levels. Serum albumin was 34 mmol/L. Her serum vitamin B₁₂ was 63 pmol/L and red cell folate 90 pmol/L. A xylose tolerance test demonstrated reduced absorption (17% of a 5g dose excreted at 5 hours). The prothrombin time and corrected serum calcium were normal.

A bone marrow aspiration demonstrated megaloblastic changes with an increase in eosinophil precursors. Giardial cysts were absent in three stool samples each taken 48 hours apart. A jejunal biopsy was, however, performed using a Watson's biopsy capsule, and microscopy of the fluid obtained showed numerous motile trophozoites of *Giardia lamblia*. Histological examination of the jejunal mucosa showed shortening and blunting of the villi with round cell infiltration in the lamina propria.

The patient was treated with metronidazole 2 g daily for three days, hydroxocobalamin 1 mg intramuscularly for three days and folic acid 10 mg daily for twenty-eight days. All her psychiatric symptoms improved rapidly with treatment and replacement therapy. Ten days after commencing treatment she felt normal and had no gastro-intestinal symptoms. Three months after treatment she remained symptom free and her weight had increased by 3 Kg. Her haemoglobin was 13.6 g/dl and MCV 90.7 fl. Her total white count was $6.1 \times 10^9/L$ with a differential of polymorphs 55%, lymphocytes 40%, monocytes 1% and eosinophils 4%. A repeat jejunal biopsy was microscopically normal.

Comment

This patient presented with a history that was compatible with post-natal depression. Investigation of her longstanding gastro-intestinal problems showed that she had giardiasis with subtotal villous atrophy. Her raised MCV was found to be due to vitamin B₁₂ and folate deficiency. Treatment of her giardiasis with metronidazole and a short course of vitamin B₁₂ and folate replacement therapy caused an early and complete remission of both her psychiatric and gastro-intestinal symptoms. Antidepressant drugs were not prescribed. The resolution of her psychiatric symptoms was rapid and corresponded to replacement therapy with folate and vitamin B₁₂.

Eosinophilia is not regarded as a feature of giardiasis¹.

Her immunoglobulin levels including IgE were normal at presentation, and the resolution of her eosinophilia after treatment is unexplained.

We believe this to be the first reported case of giardiasis presenting as a psychiatric illness due to vitamin B₁₂ and folate deficiency.

REFERENCES

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OPERATION NIGHTINGALE

The following message from the Secretary of State for Defence was received from the Joint Service Public Relations Staff, Hong Kong.

“Now that activities associated with Operation Nightingale are slowly beginning to wind down, the time seemed right to send you a message expressing the thanks and admiration of the Government for all that you and your staff have done.

From the initial rapid response to the disastrous earthquake to the way in which British Military Hospital Dharan was expanded to cope with the overwhelming extra demand, the entire operation has been executed with the speed, efficiency and dedication that characterise the British Armed Services at their best. The achievements of the staff of the BMH have in particular been truly heroic, and have received the unstinting admiration of all those who have witnessed them. But the work of Hong Kong in so rapidly identifying and dispatching relief goods, personnel and medical equipment must also be singled out, as must the work in and around Dharan by other members of Brigadier Nepal's staff, and of course the flexibility of the RAFs Air Transport Fleet in flying a number of emergency missions to Nepal.

It is particularly gratifying that, when this disaster struck a part of Nepal of such importance to the UK, the Brigade of Gurkhas, both inside and outside Nepal, were able to do so much to come to the aid of their own.

I should be grateful if you would pass on to every one of your staff who were involved in Op Nightingale my personal thanks and congratulations, as well as those of the Government, for a splendid job. I shall look forward to seeing a full account of the operation in due course.”