Pellagra complicating Crohn’s disease

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Summary
We report a 53-year-old patient with clinical features of pellagra as a complication of Crohn’s disease. His symptoms improved rapidly on taking oral nicotinic acid and vitamin B complex. We suggest the paucity of reported cases of pellagra in Crohn’s disease is a reflection of poor recognition of this complication.

Keywords: pellagra, Crohn’s disease

Pellagra is derived from the Italian words ‘pelle agrà’ meaning rough skin and was first described in 1735 by the Spanish physician Casal. The disease is a result of deficiency of nicotinamide or disturbance of other pathways of tryptophan metabolism. Pellagra was originally of epidemic proportions in areas where maize was the principal component of the diet. However, with appropriate food supplements, pellagra is now rarely seen in developed countries, but is still relatively common in poorer areas. Other causes include carcinoid syndrome, treatment with isoniazid and Hartnup disease.

Case report
A 53-year-old caucasian man presented with a two-month history of a pruritic photosensitive
rash affecting the face, forearms and neck. The affected areas were erythematous and well demarcated with fine surface wrinkling (figure). He had suffered for seven years with extensive radiologically proven Crohn's disease which had been controlled by medical treatment alone. His main symptom was of abdominal pain until the onset of the rash, when he subsequently also developed diarrhoea. In addition, he found his work as a postmaster difficult due to experiencing problems with simple mental arithmetic. Formal examination confirmed mild impairment of short-term memory and cognitive function.

He was extensively investigated and was found to be anaemic (haemoglobin 9.8 g/dl) with a normocytic normochromic picture. He also had a low serum ferritin of 14 µg/l (normal range 25–350 µg/l) but serum levels of albumin, calcium, B12 and folate were all normal. Renal and liver function tests were also normal and he did not have steatorrhea. A skin biopsy taken from the neck was unremarkable, showing a thin epidermis and non-specific inflammatory changes in the dermis. Skin scrapings for mycology were negative.

Our patient exhibited the classically described triad in pellagra of diarrhoea, dermatitis, and dementia.1 He was prescribed oral nicotinic acid, an adequate diet and vitamin B complex which resulted in a resolution of his rash and diarrhoea within two weeks. His short-term memory also improved within three months of treatment.

Discussion

There have been infrequent reports of pellagra in Crohn's disease.2,** Malabsorption and inadequate dietary intake have both been implicated,3 although other biochemical features of chronic malabsorption were not present in our patient. High-dose oral supplements are usually adequate but there are no studies specifically looking at the effect of Crohn's disease on the absorption and metabolism of nicotinamide. As the disease is rare in developed countries, the degree of clinical suspicion is likely to be low. The diagnosis of pellagra is usually established on clinical grounds and we suggest the paucity of reported cases does not reflect its true prevalence in patients with Crohn's disease. Greater awareness of this complication and direct questioning regarding skin problems is vital if the correct treatment is to be offered.

Learning points

- pellagra is caused by a deficiency of niacin
- inadequate diet is the most common cause in developing countries, but it is also seen in chronic alcoholics and those with gastrointestinal disease
- rare causes include carcinoid syndrome, Hartnup disease, and isoniazid therapy
- the triad of dermatitis, diarrhoea, and dementia is classical of pellagra. The skin changes usually appear on areas exposed to sun, heat and pressure
- pellagra is rarely reported in patients with Crohn's disease. A high degree of clinical suspicion is required to establish the diagnosis