The classic pellagra dermatitis

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DESCRIPTION

A 38-year-old woman presented with dry, cracked and hyperpigmented skin lesions over bilateral upper limb, neck and feet (figures 1–3, respectively) since 4 months. The skin lesions were localised to sun-exposed areas of the body indicating photosensitivity. The classical appearance of dermatitis and its distribution over the sun-exposed area confirms the diagnosis of pellagra.

Figure 1 Clinical image showing the dry, cracked and hyperpigmented skin lesions over the sun-exposed area of the forearm.

Figure 2 Clinical image showing the broad hyperpigmented band or collar-like appearance of pellagra on the neck. This is commonly referred to as 'Casal's necklace'.

Figure 3 Clinical image showing the classical pellagra dermatitis over sun-exposed area of the lower limb with a clear cut-off at the margins of clothing.

Figure 4 Clinical images showing the complete recovery of dermatitis after niacin supplementation: (A) forearm, (B) neck and (C) lower limb.

She reported burning sensations over these lesions and no diarrhoea or neurological symptoms. Her dietary habits were reported to be poor because of alcohol addiction.

Niacin (vitamin B₃) is an essential nutrient involved in the synthesis and metabolism of carbohydrates, fatty acids and proteins. Niacin deficiency causes pellagra (meaning 'raw skin'),

Learning points

- ▶ Niacin deficiency leading to pellagra continues to be a health problem in resource-limited countries.
- ▶ Clinical features are dermatitis, diarrhoea, dementia and, if left untreated, death (the often quoted '4 Ds').
- ▶ Pellagra is a clinical diagnosis and dermatitis around the neck, 'Casal's necklace', is the characteristic sign.

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which is characterised by dermatitis, diarrhoea, dementia and, if left untreated, may progress to death (the ‘4 Ds’ serves as a mnemonic).¹

Dietary deficiency is an important cause for pellagra in resource-limited countries. Other causes of niacin deficiency are alcoholism, bariatric surgery, malabsorption syndromes, carcinoid syndrome, Hartnup disease and certain drugs (isoniazid, ethionamide, chloramphenicol, 6-mercaptopurine, 5-fluorouracil and azathioprine).²

The most characteristic finding of pellagra is the presence of dermatitis. The hyperpigmented rash is typically bilateral, symmetrical and limited to sun-exposed sites. Dermatitis over the sun-exposed area of the neck is classically described as ‘Casal’s necklace’.^{2 3}

The use of sunscreen and niacin supplements in our patient resulted in dramatic improvement at the 6-week follow-up (figure 4A-C).

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REFERENCES

- 1 Matapandeu G, Dunn SH, Pagels P. An outbreak of pellagra in the Kasese catchment area, Dowa, Malawi. *Am J Trop Med Hyg* 2017;96:1244.
- 2 Wan P, Moat S, Anstey A. Pellagra: a review with emphasis on photosensitivity. *Br J Dermatol* 2011;164:1188–200.
- 3 Ashourian N, Mousdicas N. Images in clinical medicine. pellagra-like dermatitis. *N Engl J Med* 2006;354:1614.

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