



## Internal Medicine Flashcard

## Elderly patient of Crohn's disease with dementia and edematous red plaques on dorsum of hands



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## 1. Case description

An elderly man sought dermatology consultation for gradually progressive, mildly itchy, photosensitive rash on dorsum of hands for a month. Apart from the skin lesions, he also complained of intermittent diarrhoea which he attributed to his underlying Crohn's disease. He additionally had difficulty in recalling recent events for last few months. On examination (Fig. 1), well demarcated erythematous to dusky edematous plaques were noted symmetrically on dorsal aspect of hands and fingers. Skin of no other part was involved. Lesional skin biopsy demonstrated epidermal spongiosis, elongation of rete ridges, hyaline degeneration of collagen and mild perivascular lymphocytic infiltrate in dermis. What is your diagnosis?

## 2. Discussion

On the basis of characteristic triad of diarrhoea, dementia and dermatitis, a diagnosis of pellagra was suspected. The diagnosis of pellagra was confirmed by estimation of N methyl nicotinamide levels in urine, which was found to be reduced in the patient.

Pellagra is a nutritional disorder resulting from niacin deficiency. It can be classified into 2 variants - primary (from dietary deficiency) or secondary to defective absorption of niacin/tryptophan or impaired

conversion of tryptophan to niacin. It is clinically characterized by 4 D's – Dermatitis, Diarrhoea, Dementia and Death. The dermatitis begins in the form of acute or intermittent onset erythema gradually changing to an exudative eruption on the dorsa of the hands, face, neck and chest with pruritus and burning [1]. Pellagra is progressive and can be fatal if not treated.

Pellagra has been described as a complication of Crohn's disease [2]. Malabsorption arising due to underlying gut inflammation leads to niacin deficiency (pellagra) which further aggravates the gastrointestinal malabsorption creating a vicious cycle. In patients with underlying Crohn's disease, gastrointestinal manifestations do not aid in diagnosis of pellagra. So characteristic cutaneous manifestation along with neurological features help in such scenario. Treatment includes 500 mg/day of nicotinamide or nicotinic acid for a duration of several weeks. Nicotinamide is the preferred treatment modality as nicotinic acid is associated with more frequent side effects like headache and flushing. Neuropsychiatric symptoms improve within the first 24–48 h of treatment, while cutaneous disease may require weeks to remit [3]. In our case, higher dose of nicotinamide (500 mg thrice daily) was given over 12 weeks keeping in view the underlying Crohn's disease associated malabsorption. The treatment resulted in complete resolution of the skin lesions (Fig. 1b) and dementia as well as marked improvement of diarrhoea.

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**Fig. 1.** a: Well demarcated erythematous to dusky edematous plaques distributed symmetrically on dorsal aspect of hands and fingers. b: Complete clearance of lesions at 12 weeks after niacin supplementation

#### Declaration of Competing Interest

None.

#### References

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