Acute Hemorrhagic Pellagra in an Albanian Refugee

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We report a peculiar case of hemorrhagic pellagra in an exhausted Albanian refugee who had walked for 3 days under sunny skies on his way from his country to Greece. The peculiarities of the case are the fulminant course of the disorder; the "terrifying" appearance of the patient (initially he was admitted to an emergency unit); the gangrenous appearance of the hemorrhagic lesions of the palms and fingernails; the disturbed hepatic function that gradually returned to normal; and the absence of a history of alcohol consumption, alcohol malabsorption, or drug intake.

Pellagra is caused by an inadequate supply of niacin or its precursor, tryptophan, and by consequent cellular deficiency. This disorder occurs mainly in rural areas among poor people whose intake of animal protein, fruits, and vegetables is low.[1] The disease existed in Greece in the late 1970s[2] but is only very rarely encountered now (it occurs mainly among alcoholics). The case of fulminant hemorrhagic bullous eruption reported in this article is the first and only case we have encountered.

Case Report

A 20-year-old Albanian man was admitted to our hospital from an emergency unit located at the border between his country and Greece. He presented with a photodistributed, symmetric, bullous, and crusted eruption on the face, neck, and dorsa of the hands. Eye edema and crusted lips were remarkably pronounced, as were the linear hemorrhagic bullae covering the palms, dorsa of hands, and fingernails. Sharp demarcation of the lesions on the neck and wrists was reminiscent of a pellagralike phototoxic condition. Mucous membranes were intact. Probable diagnosis was Stevens-Johnson syndrome.

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The eruption had appeared 36 hours earlier, during a 3-day walk from Albania to Greece. The man had not eaten during the trip and had walked under sunny skies. He recalled 2 previous transient eruptions that had been similar but of lesser intensity (he did not specify the conditions under which these eruptions had occurred). He denied recent drug use or continuous alcohol consumption. Hypoalbuminemia was indicated by laboratory results. His total serum protein level was 6.09 g/dL (normal, 6.7–8.3 g/dL), and his serum albumin level was 3.28 g/dL (normal, 3.8–5.1 g/dL). Other results showed a low level of serum iron (32 ng/mL; normal, <80 ng/mL) and disturbed hepatic function (alanine aminotransferase, 174 U/L [normal, <42 U/L]; aspartate aminotransferase, 53 U/L [normal, <37 U/L]; and glutamyl transpeptidase, 120 U/L [normal, 11–50 U/L]). Histologic conditions—a subepidermal bulla and degeneration of the basal cells—did not contribute to the eruption. Direct immunofluorescent examination of peribullous "normal" skin was performed; there were no immunodeposits. Serum antinuclear antibodies and urine porphyrins were not found.

The patient was depressed but not apathetic. No signs of dementia or diarrhea were present, and the man's general condition was good—a reassuring sign despite his alarming appearance. His skin eruption, treated with a high-protein diet and 500 mg of niacinamide daily, improved on day 2 of hospitalization but was still significant (Figures 1 and 2). Six days later, the skin was normal, and improvements were noted in the initially abnormal parameters.

Comment

Pellagra is classically characterized by the "3 Ds" of diarrhea, dermatitis, and dementia, which usually, but not invariably, appear in that order.[1,3] Our patient manifested neither diarrhea nor dementia, but both may go unnoticed, as diarrhea may be transient, and dementia may be low grade.[3] The characteristic eruption usually suffices for diagnosis, which is confirmed by therapeutic trial.[4] Laboratory

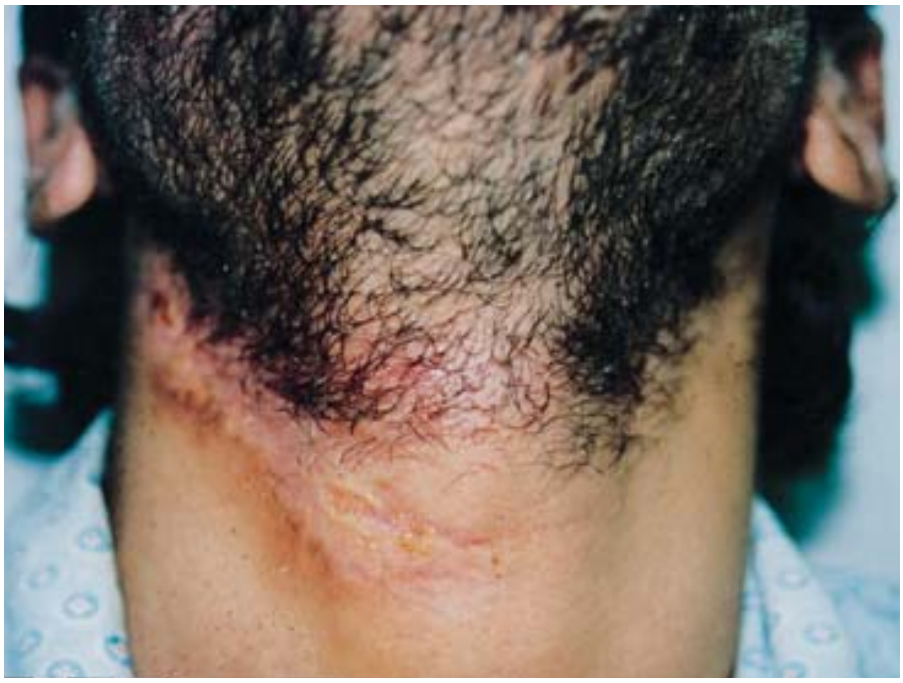

Figure 1. Residual erythema reminiscent of Casal's necklace after 2 days of therapy.

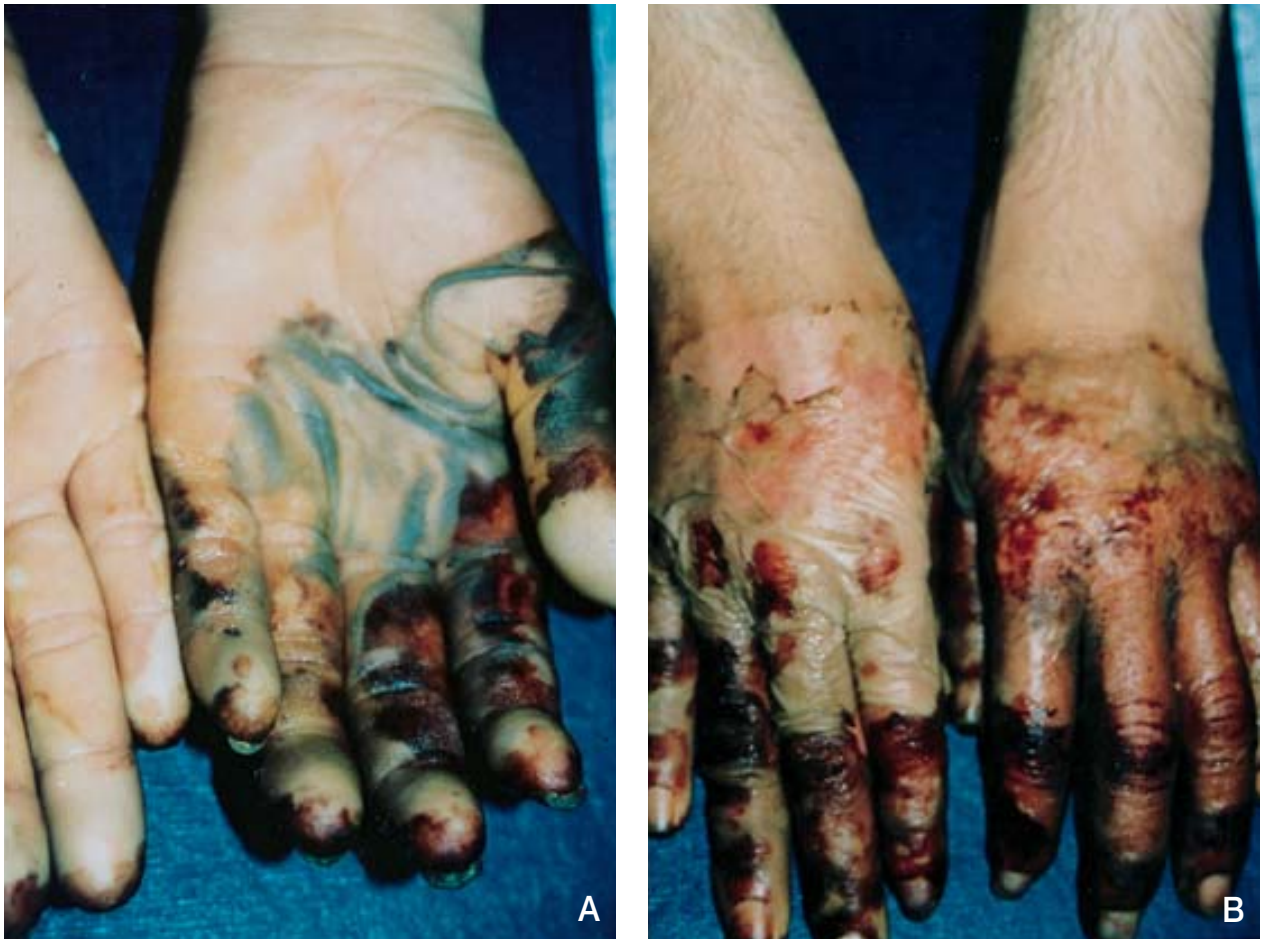

Figure 2. After 2 days of therapy, bullous hemorrhagic palmar lesions (A) and glove appearance of the hands (B).

diagnosis by fluorometric assay of urinary metabolites of niacinamide is seldom required.[4]

Initially, our patient's lesions were so intense and "terrifying" that, after cases with a fulminant course and high fatality were considered,[5] admission to an emergency unit was ordered. Sufficiently diagnostic in our patient were Casal's necklace, the "glove" appearance of the hands, involvement higher on the radial side than on the ulnar side, history of phototoxic reactions, and rapid response to niacinamide.[1-3] Black crusts from hemorrhages[1] and nail deformities[6] have been reported in other cases. Our patient's eye and lip swelling may likely be the result of a deficiency of other B-complex vitamins.[1] To our knowledge, no cases involving linear palmar hemorrhagic bullae (as seen in our patient) exist in the literature. Recently reported was an alarming eruption reminiscent of erythema multiforme, with a full range of vitamin B complex and zinc deficiency, in a malnourished tourist on a long trip from Turkey to Greece.[7]

Chronic alcoholism is the most common cause of pellagra.[1-3] Also known to induce the disease are malabsorption states caused by imbalanced diet or intestinal disease[8]; metabolic deviation of tryptophan metabolism, as seen in Hartnup disease and carcinoid syndrome[9]; and intake of drugs such as isoniazid, mercaptopurine, fluorouracil, sulfonamides, anticonvulsives, and antidepressants.[1,3,8] One theory about the mechanism involved is that niacin deficiency makes inadequate amounts of NAD (nicotinamide adenine dinucleotide; coenzyme I) and NADP (nicotinamide-adenine dinucleotide phosphate [reduced form of NAD]; coenzyme II) for energy-transfer reactions, so the skin is more easily affected because of its rapid turnover rate.[1] In this report, we suggest that our patient's history of an imbalanced diet induced a pellagra-prone state and his exhausting trek under the sun, which is intense from June 10 to July 20 in Greece,[10] initiated the phototoxic-reaction–like pattern of pellagra.

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