Striaelike Epidermal Distension
A Newly Recognized Cutaneous Manifestation in Acute Leg Edema
Naoko Ishiguro, MD; Makoto Kawashima, MD

We previously reported 2 Japanese cases of anorexia nervosa with an unusual cutaneous manifestation that arose after the administration of nutritional intravenous infusions; at the time, we thought that that feature might not have been described before.1 We recently found a similar skin symptom in a patient with lung cancer and metastases in both adrenal glands after an intravenous infusion of corticosteroid was administered to treat the dysfunction of the adrenal glands. Herein, we report the case and describe the histologic features of this unique skin manifestation.

REPORT OF A CASE

A 65-year-old man with a 3-year history of lung cancer was admitted to our hospital in October 2000 for treatment of adrenal gland dysfunction that was caused by metastases. After an intravenous infusion of 2440 mL of hydrocortisone sodium succinate (200 mg/d), the patient developed severe leg edema. Five days later, he presented to the dermatology department for treatment of the lesions on his legs and feet. Physical examination revealed xerosis, edema, and numerous linear, reddish or brownish, partially elevated lesions, 2 to 3 mm in width (Figure 1). The lesions coalesced into plaques with erosions and thin crusts on the patient’s ankles and feet.

Laboratory tests revealed anemia, hypoproteinemia, hypoalbuminemia, low serum colloid-osmotic pressure, a high adrenocorticotropic hormone level, and a low cortisol level. There was no evidence of liver dysfunction or hepatitis C virus infection.

Histopathologic examination of a lesion from the left leg showed necrosis in the upper three fourths of the epidermis, with exocytosis of neutrophils and eosinophilic degeneration of the basal layer, with subepidermal splits (Figure 2). The underlying dermis revealed swelling of the endothelial cells in the upper dermis and infiltration predominantly of lymphocytes, with a few neutrophils and extravasated erythrocytes, but no degeneration of collagen or elastic fibers on van Gieson staining. The results of direct immunofluorescence were negative for immunoglobulin, fibrinogen, and complements.

The patient was treated with 20% albumin, furosemide (Lasix), and azuren (Azunol) ointment. As the edema decreased, almost all the lesions formed thin crusts and finally resolved, leaving only a residual pigmentation without scarring or atrophy.

COMMENT

We previously observed similar skin symptoms in 2 young women with anorexia nervosa who had developed numerous linear, reddish and brownish lesions on their legs and feet.1 We reported that the symptoms, which were similar to striae atrophicae, were an unusual skin manifestation of anorexia nervosa, although they were not observed histopathologically. In contrast, the patient described herein did not suffer from anorexia nervosa, although his skin lesions were similar to those in the previous cases. The common symptom in these 3 cases was acute leg edema caused by intravenous infusion. The histopathologic findings in the present case revealed epidermal necrosis, which is different from those of striae atrophicae.

Similar histologic features appear in necrolytic acral erythema, which belongs to the family of necrolytic erythemas, in which patients usually show signs of malnutrition.2 Recently, cases of necrolytic erythema with hepatitis C or liver dysfunction have

From the Department of Dermatology, Tokyo Women's Medical University, Tokyo, Japan.
In 1966, el Darouti and Abu el Ela\(^3\) used the term necrolytic acral erythema to describe a distinct skin lesion that was found to affect the feet of 7 patients who had viral hepatitis C. Although our patient exhibited similar histologic manifestations, the clinical features and pathogenesis were entirely different.

Our 3 patients initially had xerosis and low colloid-osmotic pressure due to malnutrition. When intravenous infusions were administered, the patients developed severe edema for a short period. Then, skin distension occurred over their entire epidermis, and erythematous lesions appeared on their legs and feet. We propose the name striaelike epidermal distension for these unusual symptoms.

Accepted for publication June 16, 2001.

Corresponding author and reprints: Naoko Ishiguro, MD, Department of Dermatology, Tokyo Women’s Medical University, 8-1 Kawadacho, Shinjuku-ku, Tokyo 162-8666, Japan (e-mail: kasei@derm.twmu.ac.jp).

REFERENCES