

**Table 1: Comparison between eccrine angiomatous hamartoma and verrucous hemangioma**

Features	Eccrine angiomatous hamartoma	Verrucous hemangioma
Onset	Congenital or later in childhood	Congenital or in early infancy
Location	Distal extremities	Distal extremities
Distribution	Mostly solitary papules	Grouped of plaques or nodules
Symptom	Pain, hyperhidrosis	Itch, oozing, bleeding
Dermoscopy	A spitzoid pattern or a popcorn pattern	Bluish-white hue (hyperkeratosis), reddish-blue or bluish lacunae
Histopathology	Eccrine sweat glands associated with thin-walled, aggregated vessels in the middle and lower dermis	Hyperkeratosis, acanthosis and papillomatosis in epidermis, vascular component in dermis and subcutaneous tissue
GLUT-1 expression	Negative	Mostly positive
Therapy	Surgery, laser, botulinum toxin	Surgery, laser, topical steroid with salicylic acid ointment

tumor.<sup>5</sup> However, Wang *et al.* found that vessels in verrucous hemangioma were positive for GLUT-1 in 49 cases (66%), focally positive for Prox1 in 69 (93%) cases, while negative for WT-1 in 60 cases (81%).<sup>3</sup> They proposed that verrucous hemangioma is a vascular malformation and an incomplete lymphatic immunophenotype. The reason why for GLUT-1 is positive in verrucous hemangioma is not clear, but the staining is less intense than in infantile hemangiomas.

In conclusion, the mixed histological features comprising both eccrine gland proliferation as well as vascular proliferation and weak GLUT-1 positivity support the diagnosis of eccrine angiomatous hamartoma with verrucous hemangioma-like features in our case. To the best of our knowledge, this is the first reported case of eccrine angiomatous hamartoma with verrucous hemangioma-like

features, to be characterized in such great detail using a combination of histopathology, immunohistochemistry and dermoscopy.

**Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent.

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**Conflicts of interest**

There are no conflicts of interest.

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# Malnutrition dermatosis following adrenal insufficiency in an adult

Sir,  
A 26-year-old man presented to the dermatology outpatient department of the All India Institute of Medical Sciences, Bhubaneswar, with redness and peeling of skin on the trunk

and buttocks, blisters on the legs along with weakness, head reeling, vomiting and decreased appetite for 1 month. General examination revealed severe pallor, pitting acral edema and low blood pressure (90/60 mmHg). On cutaneous

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examination, there were multiple erythematous plaques with scaling on the hands, thighs, buttocks, legs and back of the trunk [Figures 1 and 2]. Vesicles and bullae were present on a background of patchy erythema with oozing on the lower extremities [Figure 3]. Multiple petechiae and perifollicular hemorrhage were present on the thighs, legs and hands [Figure 4]. Oral examination showed angular cheilitis and bald tongue. Systemic examination was unremarkable. Based on the history and examination, he was suspected of having zinc, vitamin C and iron deficiency. His routine investigations showed hemoglobin of 6 g/dl, decreased mean corpuscular hemoglobin concentration (MCHC) and mean corpuscular volume (MCV) (29 g/dl, 78 fL), serum sodium - 116 mEq/L (N: 135–145 mEq/L), serum albumin - 2.8 g/dl (N: 3.4–5.4 g/dl), serum alkaline phosphatase - 38 U/L (N: 40–115 U/L) and serum zinc - 16 mcg/dl (N: 54–151 mcg/dl). Peripheral smear revealed microcytic hypochromic anemia. Serum ferritin was

23 ng/dl (N: 20–500 ng/dl) and serum iron was 68 mcg/dl (N: 60–170 mcg/dl). Serum vitamin D (44 ng/mL), serum calcium (9.3 mg/dL), serum fasting and postprandial glucose levels (94 mg/dL, 120 mg/dL) were normal. Skin biopsy from the bullae on the left lower leg showed psoriasiform epidermal hyperplasia, spongiosis, intracorneal bullae and vacuolar changes [Figure 5]. He was started on oral zinc 5 mg/kg/day, vitamin C and sodium chloride 3% injection. Two units of blood transfusion and one unit of albumin infusion were given along with oral iron and protein supplementation. Following sodium supplementation (3% sodium chloride injection at 10 ml/h), the sodium level increased up to 128 mEq/L in 2 days but again dropped to 120 mEq/L. There was no consistent improvement in hyponatremia, head reeling, vomiting and hypotension. Ultrasound abdomen and pelvis, chest X-ray and computed tomography scan of thorax and abdomen were normal. Mantoux test was negative. On repeated enquiry,



Figure 1: Erythematous plaques with scaling on the buttocks



Figure 2: Erythema with scaling on the trunk



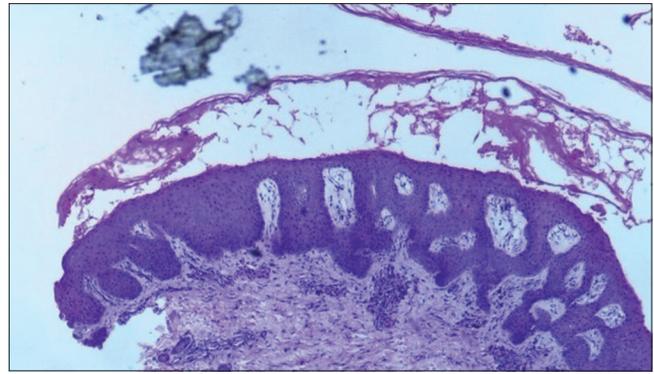
Figure 3: Patchy erythema, vesiculation with oozing on lower extremities



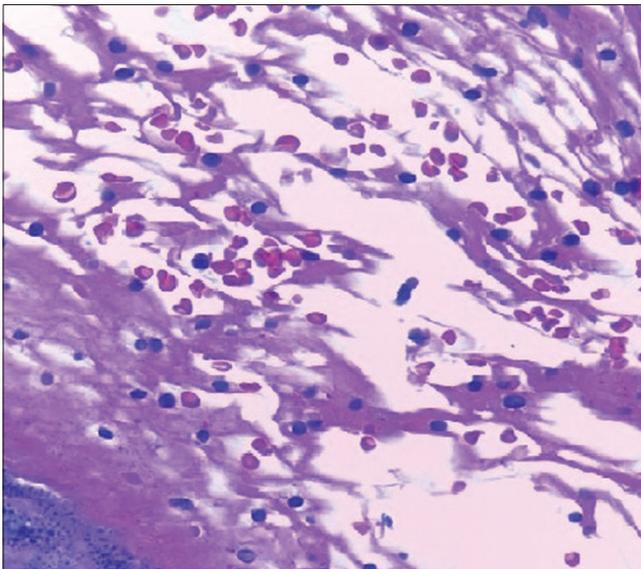
Figures 4a: Multiple petechiae and perifollicular hemorrhage over thighs



**Figure 4b:** Close view of prominent perifollicular hemorrhages over thigh



**Figure 5a:** Scanner view showing epidermal hyperplasia, acanthosis, elongation of rete ridges, vacuolization and bulla in stratum corneum (H and E stain, ×40)



**Figure 5b:** High-power view showing bulla with a few scattered lymphocytes and red blood cells, mild spongiosis and microvesiculation in the epidermis (H and E stain, ×400)



**Figure 6a:** Improvement of skin lesions after 1 month of treatment with zinc and vitamin C on the trunk

there was a history of self-medication with oral prednisolone for joint pain for one year which he stopped one month back following which systemic symptoms appeared. Serum cortisol at 8 am was 3.36 mcg/dl (6–23 mcg/dl). Diagnosis of exogenous adrenal insufficiency with malnutrition dermatosis was made. He was restarted on prednisolone 20 mg/day by the endocrinologist. After three weeks, all symptoms and skin lesions improved [Figure 6]. However he continued the treatment with endocrinologist for his adrenal insufficiency.

Adequate amount of nutrients is necessary for functioning of different organs and various metabolic processes. Acquired nutritional deficiency in adults is commonly caused by malabsorption, inadequate intake, malignancy, tuberculosis, following gastric surgery and those on parenteral nutrition.<sup>1,2</sup> It is rarely described with adrenal insufficiency. Deficiencies of nutrients such as zinc, iron and vitamin C clinically manifests as

eczematous dermatitis and psoriasiform plaques predominantly involving the frictional areas, glossitis and angular cheilitis, and perifollicular hemorrhages, respectively.<sup>3-5</sup> The symptoms of adrenal insufficiency include chronic, fatigue, muscle weakness, loss of appetite, weight loss, abdominal pain, nausea, vomiting, diarrhea, low blood pressure, irritability and depression.<sup>6</sup> Our case had cutaneous features suggestive of zinc, vitamin C and iron deficiency. Hemoglobin, serum zinc, iron and ferritin levels were low. We could not establish vitamin C deficiency due to unavailability of facility in our institute. Our case also had edema on extremities due to hypoalbuminemia which responded to albumin infusion and oral protein supplementation. Absorption of zinc requires albumin. Hence, serum albumin should be restored to normal level to facilitate zinc absorption, and for the same reason, higher dose of zinc is required in case of low serum albumin. His skin lesions improved within two weeks of therapy with high dose of zinc (5 mg/kg body weight). However,



**Figure 6b:** Improvement of skin lesions after 1 month of treatment with zinc and vitamin C on the thighs

systemic symptoms such as head reeling, weakness, vomiting and decreased appetite persisted. Tuberculosis was ruled out by normal chest X-ray, erythrocyte sedimentation rate and negative Mantoux test. Screening for malignancy was negative with normal computed tomography scan of thorax and abdomen. Diagnosis of adrenal insufficiency was confirmed by low serum cortisol level. All his symptoms due to adrenal insufficiency improved with exogenous prednisolone supplementation. The case is being reported to increase the awareness among dermatologists to keep in mind exogenous adrenal insufficiency as one of the causes of malnutrition dermatosis. Furthermore, this case highlights the clinical manifestations of zinc, vitamin C and iron deficiency altogether in a young adult which is rarely documented nowadays.

#### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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#### Conflicts of interest

There are no conflicts of interest.



**Figure 6c:** Improvement of skin lesions after 1 month of treatment with zinc and vitamin C on the buttocks

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