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Short Communication

Kwashiorkor-like condition: Dermoscopic illustration in an adult with chronic kidney disease

Kwashiorkor is a clinical presentation of protein energy malnutrition seen mainly in children from developing countries characterised by hypoproteinemia, edema and cutaneous changes. We report an uncommon presentation of kwashiorkor-like illness in an adult with chronic kidney disease (CKD).

A 60-year-old male patient presented with a four-week history of itching all over the body and generalised peeling of skin. He was a known case of CKD, undergoing dialysis. He was treated with topical emollients, corticosteroid and narrow band UVB, with no improvement. Two weeks later, patient developed swelling of both upper and lower limbs with fatigue.

Patient was pale with edematous limbs. Cutaneous examination revealed hyperpigmented, scaly patches over both upper **(Figure 1)** and lower limbs. Similar lesions were also seen over inner thighs, gluteal region with flexural erosions. Greying of hair with normal nails were noted. Dermoscopy showed white scales, perifollicular hypopigmentation, accentuated pigmented network on an erythematous background **(Figure 2)**.

Routine blood investigations showed anemia, hypoproteinemia with hypoalbuminemia, elevated blood urea and serum creatinine. Other hematological, biochemical and urine examinations were normal. Serology for infectious diseases were negative. Based on clinical and laboratory findings a diagnosis of kwashiorkor-like illness was made. He was managed with parental supplements and topical emollients. After 2-weeks, a considerable improvement in edema and skin lesions was noted.

Malnutrition is a major issue in patients with CKD, adversely affecting morbidity, mortality, functional activity and quality of life. Almost all CKD patients, including diet-induced obesity-related CKD, are gradually affected by low protein and energy intake, due to restrictive dietary prescriptions, poor appetite, as well as uremia-related anorexia.

Figure 1 Edema, hyperpigmented, scaly patches with flaky-paint like appearance involving both the upper limbs.

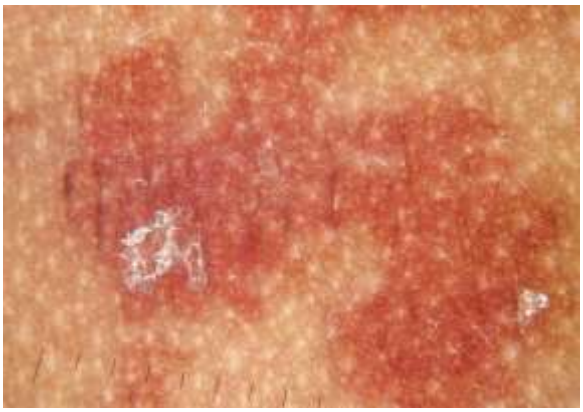

Figure 2 Dermoscopy showing scaling, accentuated pigmentary network and perifollicular hypopigmentation.

This "protein energy malnutrition" classically known as poor nutritional status due to inadequate nutrient intake, is a major problem because proper nutrients are the substrates necessary for cell and tissue development and homeostasis. A strict low-protein diet may have a negative effect on nitrogen balance.[1,2]

Kwashiorkor, predominantly occurs in children, mostly from developing countries, with varied cutaneous involvement. Most often kwashiorkor is recognised, by the characteristic cutaneous manifestations. Adult kwashiorkor occurs due to conditions leading to severe protein malnutrition such as post-bariatric surgery, CKD, human immunodeficiency virus infection, cystic fibrosis, malabsorption disorders, malignancy, etc.[3] Depletion of visceral protein due to decrease in dietary protein consumption, nutritional deficiencies result in the aberrant production of prostaglandins and free-radicals which damage the cells resulting in kwashiorkor-like dermatitis.[4]

Cutaneous findings include rash, scaling, hyperpigmentation, hypopigmentation, ulceration, hyperkeratosis, petechial hemorrhage, and superficial desquamation of the skin with the classic "pasted-on" scale, called as peeling flaky paint sign[5]. Dermoscopic features of this condition, to the best of our knowledge, has not been described earlier.

The hair in patients with kwashiorkor is often sparse, dry, and brittle. Alternating bands of pale and dark coloration along a single strand of hair is a specific hair finding in patients with protein deficiency. This finding is known as "the flag sign". Curly-haired individuals with kwashiorkor may develop straight hair.[5] Differential diagnoses include zinc deficiency and pellagra. Awareness and early diagnosis can improve the quality of life in these patients.

References

1. Chung S, Koh ES, Shin SJ, *et al*. Malnutrition in patients with chronic kidney disease. *Open J Intern Med*. 2012;**2**:89–99.
2. Heng AE, Cano NJM. A general overview of malnutrition in normal kidney function and in chronic kidney disease. *NDT Plus*. 2010;**3**:118–24.
3. Boutin D, Cante V, Levillain P, *et al*. Adult kwashiorkor: A rare complication of bariatric surgery. *Ann Dermatol Venereol*. 2015;**142**:99–103.
4. Hansen RC. Dermatitis and Nutritional Deficiency: Diagnostic and Therapeutic Considerations. *Arch Dermatol.* 1992;**128**:1389–90.
5. Albers SE, Brozena SJ, Fenske NA. A case of kwashiorkor. *Cutis* 1993;**51**:445–6.

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