

Kyrle's disease: a cutaneous manifestation of diabetes mellitus

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Accepted 18 May 2017

DESCRIPTION

A 52-year-old female patient presented to the dermatology department with complaints of itchy skin lesions all over the body for past 3 months. She was a known case of type 2 diabetes mellitus for 10 years which was poorly controlled on oral anti-diabetes medications. On cutaneous examination, multiple, discrete, hyperpigmented, hyperkeratotic papules with central keratotic plugs were present over the neck, trunk, abdomen (figure 1A), gluteal region (figure 1B) and lower limbs with few lesions showing koebnerisation. The differential diagnoses considered on initial examination were prurigo nodularis and perforating dermatosis such as Kyrle's disease, perforating folliculitis and reactive perforating collagenosis. Laboratory investigations revealed poorly controlled diabetes with HbA1c of 11.4% and fasting glucose of 278 mg/dL. Her liver, thyroid and renal functions were normal and there was no evidence of retinopathy or nephropathy on screening. She was started on insulin (split mix regimen) and her blood sugar levels improved to fasting glucose of 126 mg/dL and postprandial glucose of 213 mg/dL in a span of 2 weeks. A punch excision biopsy of the hyperkeratotic lesion over the gluteal region was performed. Histopathological examination showed a large invagination in the epidermis filled with degenerated basophilic material mixed with inflammatory cells composed mainly of neutrophils and refractile eosinophilic material (figure 2A (2×) and figure 2B (40×)). The degenerated material was negative on special stain for elastin (Verhoeff's stain) and collagen (Masson's trichrome stain). Superficial dermis showed mild perivascular lymphocyte infiltrate. Based on history, clinical and histopathological features, a diagnosis of Kyrle's disease was made. The patient was started on oral vitamin A capsule 25 000 IU once a day and hydroxyzine tablet 10 mg at night. Topical therapy included emollient containing urea

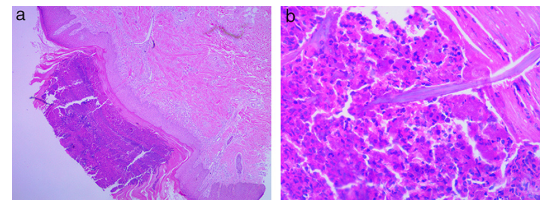


Figure 2 (A) (2×) Large epidermal invagination filled with degenerating basophilic material with dense inflammatory infiltrate composed mainly of neutrophils. (B) (40×) High-power view showing basophilic material with dense inflammatory infiltrate composed mainly of neutrophils.

and propylene glycol to be applied all over the body twice daily followed by topical application of tretinoin 0.1% gel over the hyperkeratotic lesions once at night. Patient was followed up once a fortnight for 2 months. Lesions started regressing in 15 days, however itching was persistent. Up dosing of hydroxyzine to 25 mg controlled pruritus. After 2 months of treatment, moderate flattening of the lesions was noticed with no signs of new lesions.

Kyrle's disease is a rare skin disorder worldwide except in the setting of chronic renal failure. It occurs in 10% of patients on haemodialysis.¹ It is characterised by transepidermal elimination of abnormal keratin which clinically presents as hyperkeratotic papules with epidermal invaginations in the skin. It was first described by J Kyrle in 1916 as hyperkeratotic papules and nodules in a woman with diabetes.² It is commonly seen in patients with diabetes, renal disease and rarely in liver disease.³ It adversely affects the quality of life of the patient. Thorough examination to identify the underlying systemic disease and prompt treatment is of utmost importance.

Learning points

- ▶ Kyrle's disease is a rare skin disorder characterised by transepidermal elimination of abnormal keratin.
- ▶ It is commonly seen in patients with diabetes, renal disease and rarely in liver disease.
- ▶ It adversely affects the quality of life of the patient. Identifying the underlying comorbidity and prompt treatment is vital in managing the disease.

Contributors VL and SK managed the patient and AL interpreted the skin biopsy.

Competing interests None declared.

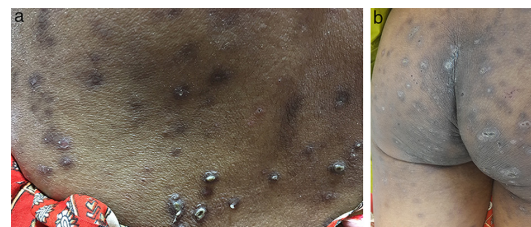


Figure 1 (A) Multiple, discrete, hyperpigmented, hyperkeratotic papules with central keratotic plugs were present over the trunk. (B) Multiple, discrete, hyperpigmented papules were present over the gluteal region.



To cite: Lokesh V, Lakshmikantha A, Kannan S. *BMJ Case Rep* Published Online First: [please include Day Month Year]. doi:10.1136/bcr-2017-220023

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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