Kaposi varicelliform eruption in patients with Darier disease: A 20-year retrospective study

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Background: Kaposi varicelliform eruption (KVE), or herpes simplex virus (HSV) superinfection of pre-existing skin lesions, may complicate Darier disease.

Objective: We sought to compare the clinical features and outcomes of patients with Darier disease who developed KVE superinfection with those who did not.

Methods: A 20-year retrospective analysis of 79 patients with Darier disease treated at our institution was performed.

Results: Eleven (14%) patients developed KVE, of whom 45% required hospitalization for their skin disease during the follow-up period. Patients with KVE had more severe Darier disease (P = .030) and were more likely to be hospitalized (P = .015). HSV was detected in erosions without concomitant vesicles or pustules in 64% of confirmed cases. In all, 23 (55%) patients with erosions had HSV testing pursued.

Limitations: Retrospective study design is a limitation.

Conclusion: The majority of KVE occurs in painless or painful erosions that may also appear impetiginized without vesicle or pustule formation. As HSV superinfection is correlated with severe Darier disease and risk for hospitalization, increased recognition of this phenomenon may lead to better patient outcomes. (J Am Acad Dermatol 2015;72:481-4.)

Key words: Darier disease; erosion; genodermatoses; herpes simplex virus; Kaposi varicelliform eruption; vesicle.

Darier disease is a rare autosomal dominant inherited genodermatosis. The disease is characterized by persistent skin-colored or yellow-brown crusted keratotic papules that may coalesce to form verrucous plaques most commonly in the seborrheic areas. Patients commonly develop bacterial and viral infections of the skin during exacerbations of the disease.[1] Darier disease is reported to be among the dermatoses susceptible to a widespread viral eruption by the herpes simplex virus (HSV). This phenomenon, known as Kaposi varicelliform eruption (KVE), may lead to hospitalization or death in the setting of eczema.[2]

Abbreviations used:

HSV: herpes simplex virus
KVE: Kaposi varicelliform eruption
PCR: polymerase chain reaction

The development of KVE may occur on the seemingly normal-appearing skin of a patient whose Darier disease is in remission or on an area away from the active disease site in rare cases.[3] The

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underlying mechanism for the occurrence of KVE in Darier disease remains unclear. Hypotheses include a consequence from a defect in cell-mediated immunity although no previous study has been able to prove an immunologic derangement.[4,5] A defect in the barrier function of the skin has also been postulated although a case study has shown that the presence of active cutaneous lesions of Darier disease is not a prerequisite for infection with HSV.[3]

Population-based epidemiologic data on KVE superinfection in the presence of Darier disease have been difficult to obtain because of the rarity of the disease. Only 1 previous study has investigated a large number of patients with Darier disease and no previous study has examined the particular clinical factors associated with the development of KVE in a large number of patients.[1] To characterize the clinical features and identify those associated with KVE superinfection in the presence of Darier disease, we performed a retrospective analysis of 79 patients with underlying Darier disease seen at our institution over the last 20 years.

CAPSULE SUMMARY

- Kaposi varicelliform eruption, or herpes simplex virus infection of pre-existing skin lesions, may complicate Darier disease.
- Kaposi varicelliform eruption may present with erosions without vesicles or pustules.
- As Kaposi varicelliform eruption is associated with severe Darier disease and increased risk for hospitalization, early recognition is advocated.

METHODS

After obtaining approval from the institutional review board we identified patients through our patient record database who were treated at our institution between January 1, 1994, and January 1, 2014. All patients who had "Darier" referenced in their medical records were included in the chart review. Each patient's chart was reviewed manually for diagnostic accuracy. To be included in the study the patient must have confirmed Darier disease as evidenced by the characteristic clinical findings of skin-colored or yellow-brown keratotic papules involving seborrheic areas such as the hairline, forehead, nasolabial folds, chest, and back and/or nail dystrophy noted by the clinician. In addition to requiring the presence of clinical features suggestive of Darier disease, we also required 1 of the following: (1) history of a supportive biopsy specimen showing acantholytic dyskeratosis; or (2) family member with a confirmed diagnosis of Darier disease.

We recorded patient demographic characteristics, the approximate date of Darier disease onset, the severity of disease, and the extent of skin involvement. To allow for patient comparison retrospectively, the disease severity and the extent of skin involvement were recorded at the time of the patients' first Mayo Clinic visit and at the time of the patients' most severe disease presentation at Mayo Clinic. Disease severity was classified as mild in patients whose lesions demonstrated focal crusting and were essentially asymptomatic, severe in which weeping erosions were present that provided pain or discomfort, and moderate to include those patients who did not fall into either the mild or severe category. Given the retrospective nature of this study, the body surface area was estimated from the documented physical examination findings in the charts reviewed to determine the extent of skin involvement. The extent of skin involvement was recorded as localized indicating less than or equal to 30% of body surface area was affected, widespread indicating that greater than 30% body surface area was affected, and disease limited to nail involvement or segmental meaning a localized band of Darier disease was present. We also recorded all treatments used by the patients and documented comorbidities experienced by the patients. Data collected also included the history of HSV polymerase chain reaction (PCR) swab testing in the presence of an erosion, history of bacterial culture in the presence of an erosion, and the history of HSV infection (oral or genital involvement). We considered a confirmed diagnosis of KVE in patients who had a positive Tzanck smear test result, viral culture, or HSV PCR swab test finding from an erosion. The date of positive HSV PCR was documented as the date of KVE onset. Also documented was the severity and extent of disease on the date of HSV onset, HSV type, complications including hospitalization, and subsequent HSV infections.

Continuous features were summarized with medians, interquartile ranges, and ranges; categorical features were summarized with frequency counts and percentages. Associations of interest were evaluated using Wilcoxon rank sum, χ^2, Fisher exact, and Cochran-Armitage trend tests. Statistical analyses were performed using the SAS software package (SAS Institute, Cary, NC). All tests were 2-sided and P values less than .05 were considered statistically significant.