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WOLF'S ISOTOPIC RESPONSE: LICHEN PLANUS OVER HEALED GENITAL SCAR – AN UNUSUAL OCCURANCE

Dermatology

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ABSTRACT

"Wolf's isotopic response" refers to the occurrence of a new dermatosis at the site of previously healed dermatosis. The exact pathomechanism of this phenomenon has not been established yet but many theories have been proposed which implicates its multifactorial causation mainly associated with abnormalities.Here, we report a case where lichen planus developed at the site of herpes genitalis that had been treated with oral antivirals.

KEYWORDS

Wolf's isotopic response

INTRODUCTION:

Wolf isotopic response is a phenomenon in dermatology in which a new dermatoses develops at the site of previously healed dermatoses1. Although many cases have been reported in the literature, yet the precise underlying pathomechanism is not established1.The Koebner phenomenon, which was first described by Heinrich Koebner in 1876, is the appearance of skin lesions on the previously unaffected or normal skin secondary to trauma or injury. Here, we present a case of wolf isotopic response in which the 1st dermatoses was herpes genitalis over glans penis of a 24 year old male, which was healed after treatment with oral acyclovir and lichen planus as 2nd dermatoses at the same site after 3 month of treatment.

Case report:

A 24-year-old male presented to our opd with multiple clustered vesicular lesions over glans penis 3 months back. There was associated burning and pain. On the basis of typical morphology clinical diagnosis of Herpes genitalis was made which was then confirmed by positive Tzanck smear and monoclonal antibodies to HSV2. He was treated with oral acyclovir 400mg tds for 7 days along with symptomatic treatment. There was complete clearence of lesion after treatment.After 3 months, patient came to our OPD with complaint of multiple pruritic papules on the same site as of HSV infection for 10 days. Dermatological examination revealed multiple, discrete, flat topped, violaceous papules localized to previously healed site of HSV infection(figA). Histopathological examination of biopsy specimen was consistent with typical findings of LP (figB). Laboratory investigations including liver function tests, serum hepatitis B surface antigen, anti- hepatitis-B antibody, serum antibodies to hepatitis C, were all normal or negative. On the basis of typical morphology and histopathological findings, diagnosis of LP was made. Patient was treated for LP with topical steroids and calcineurin inhibitor along with antihistaminic and had symptomatic relief.

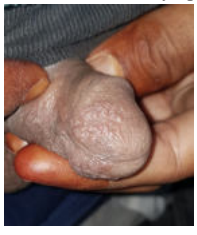

Figure A:Cutaneous Features

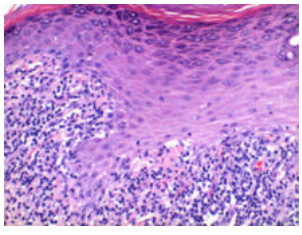

Figure B: histopathology Picture100x

DISCUSSION:

Herpes genitalis is caused by the herpes simplex virus type 1 or type 2 and can manifest as primary or recurrent infection2. It mainly affects sexually active age group and is one the most common STD.2 Most commonly, viral replication occurs in epithelial tissue and establishes dormancy in sensory neurons, reactivating periodically as localized recurrent lesions and is clinically diagnosed by its typical morphology, incubation period and symptoms, which can be confirmed by TZANCK smear or by detection of HSV IgM antibodies.

Lichen planus (LP) is an inflammatory disorder of the skin and mucous membranes with no known cause. Its pathogenesis is not fully understood, but it appears to represent a T-cell-mediated autoimmune disease. The prevailing theory is that exposure to an exogenous agent such as a virus, drug, or contact allergen causes alteration of epidermal self-antigens and activation of cytotoxic CD8+ T cells3. The altered self-antigens cross-react with normal self-antigens found on basal keratinocytes resulting in T-cell targeting and apoptosis. Clinically it presents as pruritic, flat topped, violaceous, papules or plaques over skin or mucosa.

Koebner phenomenon which is also known as isomorphic phenomenon consists of various types namely- true koebner, pseudo koebner, reverse koebner. Wolf's isotopic response was also included in type of koebner aka isomorphic phenomenon, but it needs to be differentiated from isomorphic phenomenon. Wolf's isotopic response is the development of a new skin disorder at the site of another unrelated and already healed skin disorder.

On review of literature, we found many case reports on wolf isotopic response with occurrence of LP as 2nd dermatoses at the site of healed HZV infection,1 but only few have been reported with HSV infection as 1st dermatoses like in our case. The development of inflammatory dermatoses over previously healed infection site further supports that local pathological structural change leads to abnormal immune functions.

CONCLUSION:

We present such case of wolf isotopic response to support this hypothesis. Although, more comprehensive studies at molecular levels are required to confirm underlying pathomechanism for this phenomenon.

Conflict of Interests: none

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