

Cutaneous Loxoscelism Associated Exanthem Mimicking Acute Generalized Exanthematous Pustulosis

Dear editor,

A 33-year-old female presented with a generalized sudden onset rash that appeared a day after a spider bite on her left upper thigh. It was associated with burning sensation and pain over the site of bite. Examination revealed discrete and coalescent erythematous maculopapular lesions with pinpoint to pin-head-sized pustules and scaling predominantly involving the axillae, cubital and politeal fossae, thighs, and proximal legs bilaterally. There was no mucosal involvement or lymphadenopathy. The site of the spider bite showed central crusting surrounded by a zone of pallor and a peripheral dusky red zone [Figure 1]. Dermoscopy of the rash revealed structureless red-pink background, red clods, and white clods (micropustules) [Figure 2]. The vital signs, parameters, and systemic examination were normal. Clinical diagnoses of loxoscelism and spider-bite-triggered acute generalized exanthematous pustulosis (AGEP) were considered. Laboratory investigations revealed a neutrophilic leucocytosis ($12,000/\text{mm}^3$) and normal liver and renal functions. Initial AGEP validation score of the EuroSCAR study group (without histopathology) was 8 suggesting a “definite” diagnosis.^[1] However, histopathology revealed upper dermal perivascular infiltrate composed of neutrophils, lymphocytes, and eosinophils, along with extravasated red blood cells suggestive of vasculitis [Figure 3]. No spongiosis or subcorneal/intraepidermal pustules were seen.

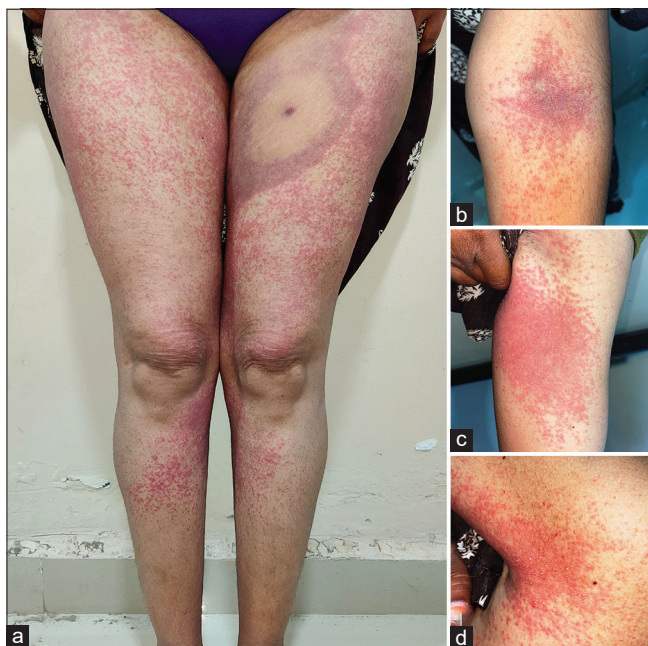


Figure 1: Discrete and confluent erythematous maculopapular rash with tiny pustules involving bilateral thighs, cubital fossae, and axillae (a–d). Note the central crusting surrounded by a zone of pallor and peripheral violaceous zone at the site of spider bite on the left upper thigh (a)

The final AGEP validation score (–2) suggested “no AGEP.” Thus, based on the clinical and histological features, a final diagnosis of cutaneous loxoscelism-associated generalized pustular vasculitic exanthem was hence established.

The syndrome of loxoscelism occurs due to bites of the spiders of the genus *Loxosceles*. It can present as either cutaneous or viscerocutaneous disease. The lesion of the spider bite begins as painful erythema and edema progressing to necrotic eschar. The viscerocutaneous disease in addition may show hemolytic anemia, thrombocytopenia, rhabdomyolysis, renal failure, and disseminated intravascular coagulation in severe forms mediated by phospholipase D in the venom.^[2,3] Although exanthema in loxoscelism is uncommon, generalized macular, maculopapular, and a pustular rash have been described and may be indicative of systemic involvement.^[4,5] Robb *et al.*^[4] reported a case showing a combination of morbilliform and pustular rash which histologically showed features of necrotizing vasculitis. Although a definitive diagnosis of loxoscelism is possible only by capturing/recovering the spider, a presumptive diagnosis may be established with compatible history and clinical features considering the ubiquitous distribution of the spider.^[5]

In our case, cutaneous loxoscelism was established based on the history of spider bite, typical lesion at the site of bite, and absence of systemic features. Spider-bite triggered AGEPs have been reported attributable to sphingomyelinase in the venom that stimulates increased release of interleukin-8 and granulocyte-monocyte colony-stimulating factor—the chief mediators of AGEP.^[5,6]

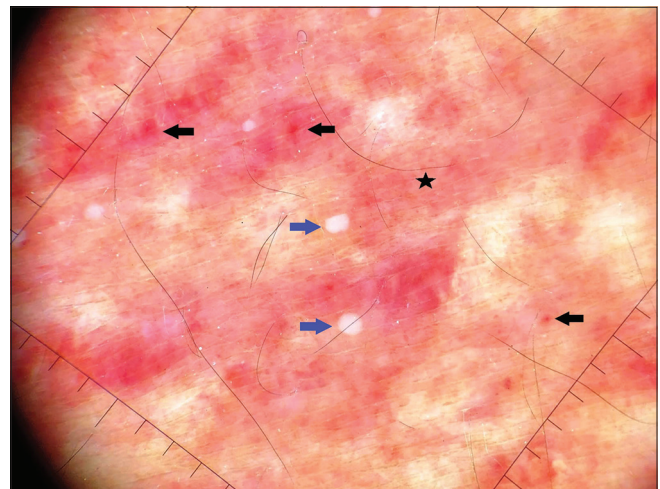


Figure 2: Polarized dermoscopy shows red (black arrows) and white clods (blue arrows) corresponding respectively to the extravasated red blood cells and micropustules over a red-pink structureless background (black star) [handscope (FotoFinder® Systems GmbH, Bavaria, Germany), magnification × 20]

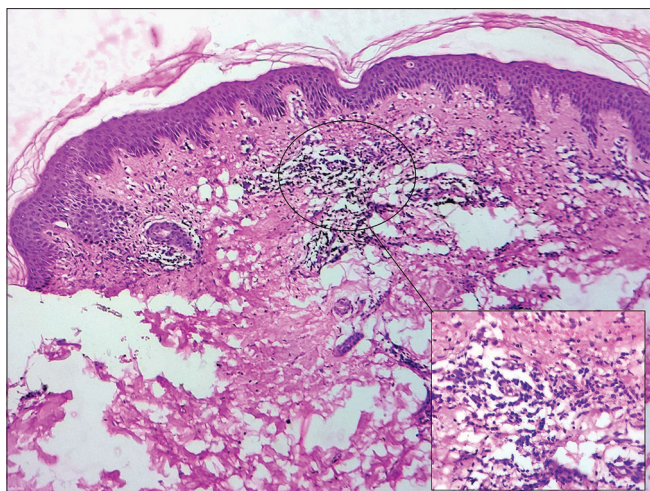


Figure 3: Photomicrograph showing upper dermal perivascular infiltrate [H&E × 10]. High power view showing the infiltrate composed of neutrophils, eosinophils, and lymphocytes along with extravasated red blood cells [in set, H and E × 40]

Hence, a diagnosis of AGEP for the rash following the bite was considered based on its acute onset with a very short interval between the bite and its appearance, preferential flexural involvement, presence of tiny pustules resolving with pinpoint desquamation, absence of systemic involvement, and absence of any treatment before the appearance of rash. It was however ruled out by histopathology which showed features of vasculitis without subcorneal/intraepidermal pustules. Although vasculitis may be evident in histopathology of AGEP, presence of subcorneal/intraepidermal pustules and/or spongiosis are essential for diagnosis.^[1]

Although exanthem is an uncommon feature of loxoscelism, histological assessment of the rash when present may be worthwhile to differentiate between loxoscelism associated vasculitic exanthem and loxoscelism triggered AGEP for a clinical presentation as in our case. When the rash is predominantly maculopapular and pustules not evident clinically, dermoscopy may highlight the micropustules as described in this case.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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