

Acute bullous irritant contact dermatitis caused by EMLA® cream

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The Eutectic Mixture of Local Anaesthetics (EMLA® cream; AstraZeneca, Rueil-Malmaison, France; a 1:1 mixture of lidocaine and prilocaine) is a topical anaesthetic that is widely used in daily practice to alleviate pain in patients undergoing minor skin surgery. Local cutaneous side-effects are rather rare, mild, and transient. They include itching, burning, pain, pallor or blanching, erythema, oedema, and purpura. Allergic contact dermatitis related to prilocaine has been reported (1–5). Rarely, cases of irritant contact dermatitis after EMLA® cream application have been described (6–8). We present a case characterized by an acute localized vesiculo-bullous reaction that not only led to misinterpretation of the cutaneous biopsy, but was also responsible for a hypopigmented scar.

Case Report

An otherwise healthy, dark-skinned, 9-month-old girl presented with a widespread hypopigmented scaly eruption of the trunk and limbs, refractory to corticosteroid

ointment and moisturizing cream. A biopsy, performed after EMLA® cream was applied 1 hr before, showed a subepidermal bulla with a discrete lymphocytic inflammatory infiltrate in the dermis suggestive of epidermolysis bullosa (Fig. 1). The child was subsequently referred to us for a second opinion. She displayed a widespread eruption

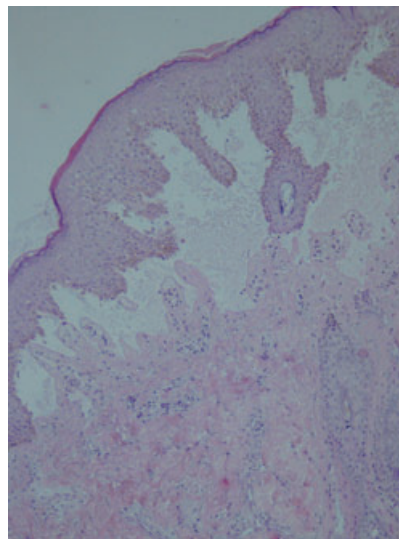


Fig. 1. Subepidermal bulla with a discrete lymphocytic inflammatory infiltrate (haematoxylin and eosin, ×100).

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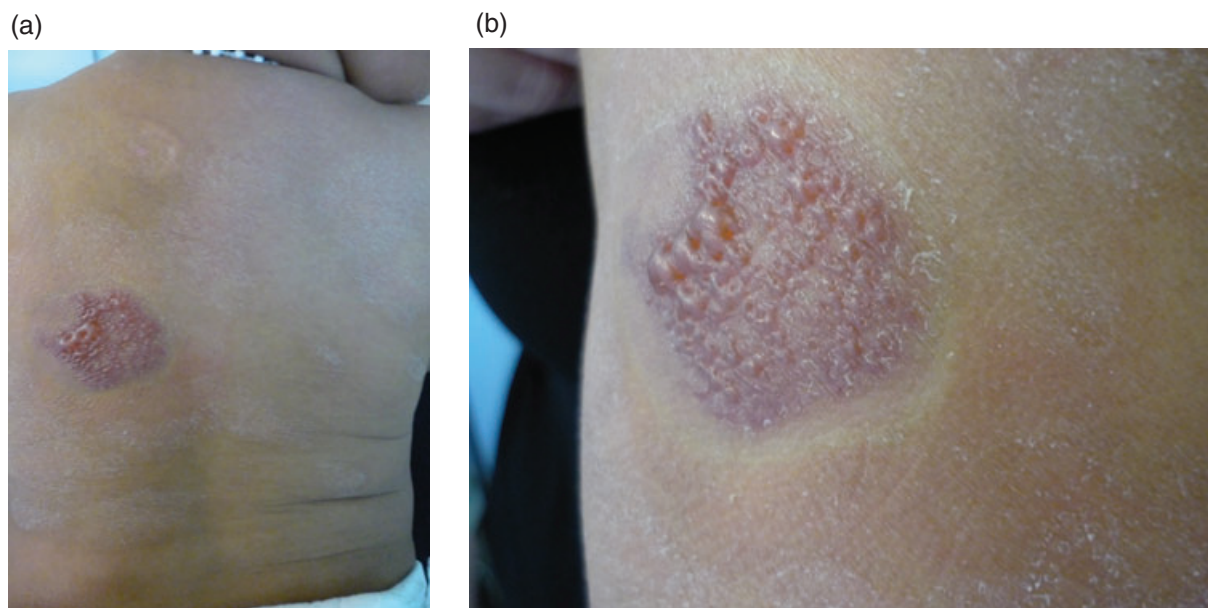


Fig. 2. (a) Diffuse scaly eruption on the back and acute vesiculo-bullous eruption restricted to the EMLA® cream 1 hr after its application. Note the hypopigmented area on the upper back related to the prior application of EMLA® cream. (b) Close-up view of the lesion.

suggestive of an eczema. There was a depigmented macule on the upper back, at the precise site of EMLA® cream application (Fig. 2a). To facilitate another biopsy, EMLA® cream 5% was applied on an area on the middle back and covered for 1 hr with Tegaderm®. When the cream and Tegaderm were removed, a striking vesiculo-bullous eruption restricted to the site of EMLA® cream application was noted (Fig. 2a,b). The child did not seem to present any sign of itch or pain. Because of the reaction, the biopsy was deferred, and a toxic irritant contact dermatitis was diagnosed. A subsequent biopsy, performed without EMLA® cream at another site, confirmed the diagnosis of eczema. Patch testing with prilocaine hydrochloride 5% pet. and lidocaine 5% pet., applied for 1 hr on the back (Chemotechnique Diagnostics, Vellinge, Sweden), gave a negative result.

Discussion

We report a rare case of localized bullous irritant contact dermatitis caused by EMLA® cream. Patch testing gave a negative result, but no prick or intradermal tests were performed. Allergic contact dermatitis related to prilocaine (1–3) or to both components (4) has been previously reported, as well as contact urticaria caused by lidocaine after EMLA® cream application (5). In those cases, patch testing was useful to find the

culprit component. Irritant contact dermatitis is rather rare (6–8). Hoss et al. (7) and Dong et al. (8) reported cases of graft-vs.-host disease-like appearances on histology, with alteration of keratinocytes in the epidermis and the presence of interface changes with subepidermal clefting and basophilic granules within the cleft. Cazes et al. (9) observed that EMLA® cream may induce, in addition to histopathological findings in relation to suspected dermatoses, swelling and vacuolization of the upper dermis and destruction of the basal layer resulting in cleft formation, and could therefore be misleading with regard to making the correct diagnosis. However, they did not report similar clinical bulla formation (9). Our case is strikingly similar to and much more severe than those in previous reports (8, 9). The occurrence of a vesiculo-bullous rash within the first hour after its application and negative patch test results with prilocaine and lidocaine favour a direct toxic reaction rather than an immune hypersensitivity reaction. It could be correlated with a combination of several factors, such as the skin being thin, the fact that EMLA® cream was applied twice to the back, the young age of the child, and the underlying dermatosis. Dermatologists should be aware of the potential clinical reaction and histological pitfalls related to the use of EMLA® cream. The pathologist reviewing the specimen should be made aware if EMLA® cream has been used prior to biopsy, to avoid diagnostic confusion.

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