REPORT

New social media challenge mimicking vasculitis in young patient

Zora Martignoni, Gerhard Fierlbeck, Christoph Zeller, Tobias Plaza.

Background

We report the case of a 12-year-old girl with acute onset of painful lesions with blisters located on the lower extremities *(Fig. 1)*. She was referred to our practice by her pediatrician for further diagnostics and treatment. We were informed that the lesions had spontaneously appeared a week ago. They were painful to the touch, without increase in amount since appearing. Otherwise the girl was healthy with no medication and no further symptoms.

Clinical findings and Diagnosis

The initial differential diagnosis was vasculitis whereupon the treating pediatrician opted for a biopsy. The histopathologic findings showed epidermal necrosis with intra- and subepidermal fissuring as well as perivascular, mostly superficial, inflammation

Fig. 1: Acute presentation with numerous red, non-blanch-able erythema with blistering on the right lateral leg.

Fig. 2a: Later presentation with eleven brown erythema tapering out into areas of hyperpigmentation on the right lateral lower leg.

Fig. 2b: Later presentation with eleven brown erythema tapering out into areas of hyperpigmentation on the right lateral lower leg.

(Fig 3). Blood tests showed no signs of inflammation, and the anti-neutrophil cytoplasmic antibody (ANCA) test was negative.

In our clinic, physical examination of the lower leg laterally showed a total of 11 brown, non-blanchable erythemata measuring up to 5cm in diameter, with discrete detachment of the epidermis as well as petechiae *(Fig. 2)*. Clinically, the asymmetric presentation of the lesions did not fit the differential diagnosis. Histopathologically, as well, there was no evidence for vasculitis, whereupon we turned to further questioning. Initially, the girl and her family were adamant that the child was suffering from a severe illness. The medical history kept changing, and the details did not add up. We began to suspect an external cause or even that the lesions were self-induced. Upon intense and elaborate questioning, the patient admitted that she had been participating in a «deodorant burn challenge». This challenge is an endurance test and consists of spraying deodorant out of an aerosol can onto one‚Äôs bare skin. The person who can hold it there the longest wins. Our final diagnosis was cryogenic bullous dermatitis artefacta. In the end, an interdisciplinary discussion amongst treating pediatricians, dermatologists, as well as the parents and patient, was necessary for the girl to admit her actions and for her parents to recognize and accept the diagnosis.

Therapy

Upon diagnosis, the dermatological treatment was simple burn treatment. The potential dangers of chemical burns were explained to the girl, and a therapist was organized for a psychosocial assessment.

Discussion

Numerous trends and challenges have come and gone amongst teens and preteens over the years. This «Deodorant Challenge» is one of the latest re-

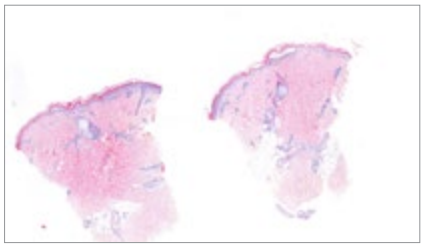

Fig.3a: Histologic overview. The Histology is provided by Dr. med. Daniela Pellegrin-Ochsner from Kempf and Pfaltz.

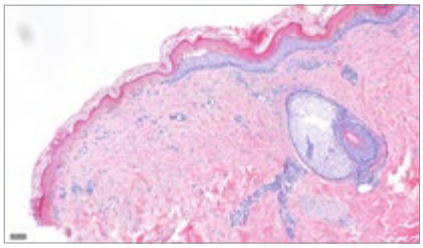

Fig.3b: Histology depicting sharply demarcated epidermal necrosis.

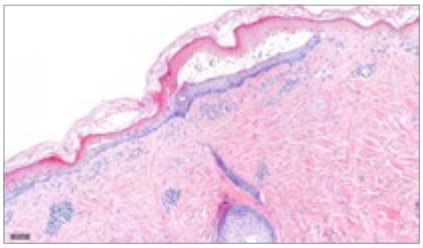

Fig.3c: Histology delineating sharply demarcated epidermal necrosis

sulting in serious injuries. These occur when aerosol deodorant is sprayed in close proximity to skin, from less than 5 cm distance, for at least 15 seconds. A resulting temperature difference of minus 60 degrees Celsius can lead to cold burns [1]. For the clinician, characteristic signs of self-induced burns by the Deodorant Challenge are solitary or numerous circular areas of violet erythema or blistering, tapering out into areas of hyperpigmentation [2].

The difficulty in diagnosis regarding dermatitis artefacta seems to be noncompliance regarding clinical history. Additionally, the histopathology will be nonspecific, making it difficult for the clinician to prove the final diagnosis [3]. However, there are some clues that can indicate the cause. As the lesions are inflicted externally, the pathology will be located principally in the epidermis. The most common histopathologic finding in dermatitis artefacta is epidermal necrosis with minimal dermal inflammation *(Fig 3b)*. Subepidermal blisters can often accompany these findings *(Fig 3c)*. These blisters present differently from immunobullous diseases by the presence of complete epidermal necrosis, sharp demarcation, and comparably sparse inflammatory infiltrate without eosinophils. [4]

In many reported cases, children are motivated to gain notoriety in front of peers, especially since the rise of social media [1]. However; non-suicidal self-injury (NSSI), deliberate self-inflicted destruction of body tissue without suicidal intent, has been defined to be a symptom of borderline personality disorder. [5] Therefore, it is important to conduct a psychosocial assessment of a patient. If an underlying psychopathology is suspected, a psychiatrist should be involved in the treatment.

Conclusion

In cases where the patient history does not match the clinic, or where clinical presentation and histology do not match the differential diagnosis; it is important to consider self-induced injury as cause of the symptoms. Cryo-damage by abuse of aerosol deodorant sprays is an effective way to cause dermatitis artefacta. Dermatologists and pediatricians should be aware of this method of injury and take interdisciplinary action if suspecting this diagnosis.

Authors

pract. Med. Zora Martignoni,
Prof. Dr. med. Gerhard Fierlbeck,
Dr. med. Tobias Plaza, PLAZA Kliniken
Dr. med. Christoph Zeller, Praxis am Bahnhof Rüti, Zürich

Zora Martignoni

Tobias Plaza

Gerhard Fierlbeck

Christioph Zeller

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