

A Curious Blister in a High School Student: Beware of the “Deodorant Challenge”

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A 15-year-old otherwise healthy high school student presented to a primary care clinic with a lesion on his leg of 5 days’ duration (**Figure 1**). He reported significant pain in the area but had no other symptoms.



Figure 1. A lesion on a boy's leg at presentation to the primary care clinic, 5 days after its development.

History. He had been seen by an urgent care physician 2 days ago. At that time, the lesion was a large blister (**Figures 2 and 3**). At this visit, this blister had been drained, and the yellow fluid was sent for culture tests. Topical antibiotic therapy with mupirocin was prescribed for presumed bullous impetigo, and the patient was instructed to follow up with his primary care physician.



Figure 2. *The boy's blister photographed on day 1, 5 days before presentation to the primary care clinic.*



Figure 3. The boy's blister at presentation to urgent care, 3 days after development and 2 days before presentation to the primary care clinic.

At the time of his current presentation to the primary care clinic, the lesion had not improved. He reported mild to moderate pain. There had been no fever or limp. The patient's mother was concerned that the lesion may be a result of a methicillin-resistant *Staphylococcus aureus* infection, because a number of his baseball teammates had similar skin lesions.

Physical examination. At presentation, the patient was well appearing, had stable vital signs, and was afebrile. Examination of the skin revealed a 10 × 4-cm erythematous lesion with central ulceration located on right medial leg, just below the knee. There was some skin necrosis noted on the edges of the ulceration. There was no induration or purulent exudate. No regional lymphangitis or lymphadenopathy were present. The remainder of the physical examination findings were otherwise unremarkable.

Differential diagnosis. This skin lesion presented a diagnostic challenge. The differential diagnosis included impetigo, bullous impetigo, contact dermatitis, skin trauma, insect

bite/envenomation, and toxin reaction, among many others. However, the characteristics of this lesion did not fit well with any of these common diagnoses.

Upon further questioning, the patient explained that he and 3 of his baseball teammates had attempted the “deodorant challenge” 5 days prior to presenting to our office. He described completing the challenge by holding an aerosol deodorant spray canister approximately 1 cm away from his leg and spraying the aerosolized deodorant directly onto his bare skin in a single spot for as long as he could take the pain. He and his friends competed to see who could endure the pain for the longest time and thus win the challenge. Our patient reported spraying himself continuously for 20 seconds, and the winner in the group reportedly lasted 52 seconds of spraying!

The patient reported feeling a sharp, stinging pain throughout the 20 seconds he was in contact with the aerosolized deodorant. He said that this sensation persisted for approximately 2 hours and was associated with minor erythema. He did not notice any blisters, bleeding, or breakdown of tissue until the next morning, when he awoke to see a large red patch with a single raised blister (**Figure 2**). On the third day after exposure, his pain in the area was increasing, and the lesion had begun to look more worrisome to him. He then had his mother take him to the urgent care center for treatment. The patient did not reveal the truth about the deodorant spraying to the urgent care clinician, so his lesion had been treated empirically as bullous impetigo.

Discussion. Dermatitis artefacta is a heterogeneous group of skin manifestations caused intentionally by the patient or a caretaker. The chronic, recurrent forms are usually associated with psychological conditions or physical abuse.¹ In contrast, the case described here represents a newer form of acute skin injury that is spread via the internet and/or social media.^{2,3} It occurs in otherwise normal teenagers, usually under peer pressure, but also can be associated with curiosity, impulsiveness, risk-taking behavior, and even thrill-seeking.

Aerosol deodorant spray is easily available, and most teenagers, and especially teenage athletes, have it in their gym bags. This easy access makes its misuse possible. The liquid propellant causes a freeze burn due to rapid evaporation associated heat absorption from the skin. This patient’s case represents one of the newer virtually spread challenges, which pose significant risks to teenagers. In this case, patient is at risk for a deep burn, wound infection, prolonged healing, significant scarring, and the potential need for skin graft.

Various internet challenges have become popular in teenage culture and have driven adolescents to put their body at risk by swallowing laundry detergent pods or cinnamon powder, choking one another, snorting objects, and more—stories that are frequently reported in the news. When such challenges lead to injury or illness, teenagers frequently do not reveal the truth to parents or physicians due to fear of repercussion or punishment. Thus, they present as

diagnostic challenges with the potential for incorrect diagnoses and improper or delayed treatment.

The viral spread of these internet challenges on social media poses significant threats to pediatric populations. Clinicians who treat young patients should question them about their possible participation in dangerous internet challenges during the standard encounter and be vigilant for disease or injuries suspicious of fictitious etiologies. Patients and their parents should be educated about the risks of significant injury and should avoid participation in these harmful internet challenges.

References

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