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Xbox—A Source of Nickel Exposure in Children

Abstract: Macintosh laptop computers and iPhone5s were recently added to the list of potential nickel sources. The Xbox gaming controller also joins the list.

The majority of nickel contact allergy in U.S. children is reported in association with contact from items such as costume jewelry, belt buckles, jean snaps, keys, coins, and more recently Macintosh laptop computers and iPhones (1–3). Children’s toys with metal components are a potential and important source of nickel exposure to consider (4), although it is not always possible to associate the dermatitis with exposure to a single toy source.



Figure 1. Xbox on dimethylglyoxime testing.

We recently evaluated a 9-year-old boy for worsening of his atopic dermatitis. On patch testing he was found to be contact sensitized to nickel. He was asked to bring his favorite things with him to the final patch test reading, at 120 hours. One item he brought was his Xbox gaming controller, which tested positive for dimethylglyoxime (Fig. 1). Upon further discussion with his parent, it was determined that the patient’s dermatitis had begun to worsen shortly after he began playing with the Xbox.

Gaming devices are a novel source of nickel release and one that should be recognized. The dimethylglyoxime test is an important tool to enable practitioners to uncover unexpected nickel sources, such as the “silver” button on the Xbox controller. This button can easily be covered with tape to prevent cutaneous contact.

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An Adolescent Boy with Urticaria to Water: Review of Current Treatments for Aquagenic Urticaria

Abstract: We report the case of an adolescent boy with aquagenic urticaria unresponsive to oral antihistamine therapy. We successfully treated his condition by topical application of a petrolatum-containing cream as a protective coating. To our knowledge, this is the first report showing the use of topical therapy alone to treat aquagenic urticaria in a child. Based on the effectiveness, safety profile, and ease of use, clinicians may wish to consider this regimen as a first-line therapy.

Physical urticaria is defined as urticaria induced by physical stimuli, such as trauma, pressure, heat or cold, exercise, and water. Aquagenic urticaria (AU) is a rare form of physical urticaria, first described by Shelley and Rawnsley in 1964 (1). Upon contact with water, patients develop distinctive folliculopapular urticaria 1 to 2 mm in size, distributed mainly on the trunk and upper arms (1). Symptoms included mild to severe prickling, pruritus, and burning (1). The authors proposed that a toxic substance, formed by water reacting with sebum or sebaceous glands, stimulates the degranulation of local mast cells (1). The released histamine then produces urticarial lesions (1). In 1981, Sibbald and colleagues reported that acetylcholine may also induce histamine release (2). In 1986, Czarnetzki and colleagues suggested that a water-soluble antigen in the epidermis causes mast cell degranulation upon diffusion into the dermis (3). These reports imply a histamine-dependent mechanism of AU, but Luong and Nguyen recently described that, in certain patients, water challenge did not induce the expected increase in histamine level (4). Hence, the pathogenesis of this condition is poorly understood, making it difficult to develop evidence-based treatment strategies. Here, we present a case of an adolescent boy with AU

successfully treated with topical application of a petrolatum-containing cream. We also review the current treatments.

CASE REPORT

A 13-year-old boy without personal or family history of atopy presented with a 1-year history of AU. Within 5 to 10 minutes of contact with water, small follicular wheals with diffuse erythematous flares developed, along with severe pruritus (Fig. 1). The urticarial lesions were distributed on the chest and back, sparing the palms and soles. These symptoms occurred regardless of water temperature. The urticaria typically persisted for 10 to 20 minutes after exposure to water. Emotional stress, physical exercise, and spicy food, known triggers for cholinergic urticaria, did not induce these symptoms. Sweating induced minimal urticaria occasionally but not to the extent induced by water. The patient never experienced any systemic symptoms such as wheezing, dysphagia, or respiratory distress when drinking water. Prophylactic antihistamine therapy (cetirizine and diphenhydramine) failed to provide any relief, forcing the patient to limit exposure to water. He resorted to taking a brief shower once per week with a great deal of pain and reluctance, and he refused to take baths.

Physical examination yielded no abnormal findings. Laboratory studies including complete blood count and metabolic panel were all within normal limits. Treatment was initiated by coating the skin with a protective layer of a bland topical cream (Cetaphil, Galderma Laboratories, Switzerland) prior to showering, but the treatment did not improve the symptoms, because it completely washed off. Next, the patient was instructed to apply a



Figure 1. Five to 10 minutes after water exposure, anterior chest.