



Case Letter

Localized systemic contact dermatitis: The vulva as a clue to identify allergen ingestion

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Vulvar allergic contact dermatitis (ACD) has a significant negative impact on quality of life and can often be a diagnostic challenge. Many clinicians are skilled in limiting local contact exposure; however, that is not enough in some cases, and systemic exposure must be considered. Herein, we highlight the importance of considering systemic ACD when evaluating patients with vulvar dermatitis that is recalcitrant or recurrent despite appropriate local treatment and avoidance measures.

A 37-year-old female patient presented to the vulvar dermatology clinic for recurrent vulvar erythema, burning pain, and subsequent superficial desquamation. These flares were previously presumed to be infectious in nature, and she was treated with multiple courses of oral and topical antibiotics and antifungals. She also flared with use of clobetasol ointment and lidocaine cream. She was previously evaluated by the allergy/immunology department and had extensive work-up, including patch testing, and notably had allergies to formaldehyde, diazolidinyl urea, paraben, benzoin, cobalt, and latex. The plan was avoidance of her allergens and interim treatment with triamcinolone ointment 0.1% ointment. The condition improved, but rebound flares continued.

During an active flare, the patient was noted to have erythematous papules coalescing into plaques involving the vulva, perineum, and perianal areas (Fig. 1). Histopathologic findings were consistent with a subacute spongiotic dermatitis process most consistent with ACD. Counseling was provided to the patient to continue

to avoid topical allergen exposure, resulting in only partial improvement. Subsequently, a trial of avoidance of ingested sources was proposed to evaluate for localized systemic contact dermatitis (SCD). Given the patient's history of formaldehyde allergy, we specifically focused on removing aspartame from her diet and oral medicaments because aspartame is oxidized into formaldehyde after ingestion (Veien and Lomholt, 2012). In addition to avoiding formaldehyde-releasing preservatives in her personal hygiene products and medications, aspartame was noted in the patient's Zofran oral disintegrating tablet and Rizatriptan oral disintegrating tablet ingredients. Alternatives devoid of aspartame were prescribed, with notable resolution of the rebound flares and dermatitis.

A second patient, a 16-year-old girl, presented to the dermatology clinic with a 4-year history of chronic erythema of the perineum with intermittent bouts of highly pruritic papules that cycled 1 week after the onset of menses each month. Patch testing per the American Contact Dermatitis Society Core Standard series revealed a 2+ reaction to formaldehyde and 1+ reaction to propylene glycol (PG). Counseling was provided for the patient to avoid formaldehyde and PG sources with concurrent implementation of a menstrual cup instead of paper-based menstrual products. The patient had 80% resolution and her cyclical flaring improved, but her baseline erythema persisted. A trial of avoidance of ingestible sources was recommended, specifically discontinuation of Mio (a water-flavoring additive) and diet cola, which contain PG and aspartame, respectively. This resulted in sustained resolution of the erythema and continued resolution of the intermit-

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Fig. 1. Erythematous papules coalescing into plaques involving the vulva, perineum, and perianal area.

tent flares. Six months later, the patient restarted drinking diet cola and the symptoms recurred, after which she self-switched to a stevia product and has remained symptom and dermatitis free. The flare of localized dermatitis after systemic rechallenge confirmed our suspicion of a localized presentation of SCD.

Vulvar dermatoses refer to various dermatologic conditions that affect the vulva and can be associated with vulvovaginal symptoms, such as pain, pruritus, and dyspareunia (Fisher, 1995). Although the exact prevalence of vulvar dermatoses remains unknown, one study reported a prevalence of 45% among adult women (Fisher, 1995). The differential for chronic vulvar dermatoses is broad and includes dermatitis (atopic, contact, irritant), lichen sclerosis, lichen planus, and psoriasis (Woodruff et al., 2018). ACD of the vulva is increasingly reported in the literature, but the exact prevalence remains unknown. Fragrances, preservatives, and medicaments (e.g., topical corticosteroids, cleansers, and topical antibiotics) remain the most commonly implicated sources of allergens in the development of vulvar ACD (Woodruff et al., 2018). Once the diagnosis of vulvar ACD is confirmed, management relies on the removal of the offending agents, in addition to providing essential education to patients on alternative products for vulvar hygiene care.

In select patients who continue to experience symptoms of contact dermatitis despite appropriate removal of the topical source agents, SCD should be considered and a detailed evaluation of patients' dietary intake and oral medications should be performed. SCD, a subtype of ACD, refers to the development of dermatitis after systemic exposure to an allergen in individuals who have been previously sensitized through cutaneous exposure to the same allergen. SCD often clinically manifests as a reactivation of the dermatitis at the original cutaneous site of exposure (recall reaction) (Schlosser, 2010). Vesicular hand eczema has also been reported. Baboon syndrome is a well-recognized form of SCD (due to exposure to medications and urushiol oil) can manifest as widespread scaling dermatitis and erythroderma. Genital presentation of SCD has been previously reported in the literature (Fisher, 1995; Vermaat et al., 2008). In these cases, patients developed SCD after systemic administration of medications containing PG (e.g., diltiazem) and food containing nickels, with subsequent resolution of SCD after discontinued exposure to the sources. Our cases highlight the importance of including SCD in the differential of vulvar dermatoses, particularly among select patients with recalcitrant dermatitis refractory to the removal of topical allergens.

Conflict of Interest

None.

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Study approval

The author(s) confirm that any aspect of the work covered in this manuscript that has involved human patients has been conducted with the ethical approval of all relevant bodies.

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