

Allergic Contact Dermatitis of the Vagina and Perineum: Causes, Incidence of, and Differentiating Factors

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Abstract: Review of allergic contact dermatitis of the vagina and perineum, including causes, incidence of, and differentiating factors. The causes include common allergens found in everyday products. The true incidence of contact dermatitis of the vagina and perineum is unknown, however, it is a common problem facing clinicians. The differentiating factors include itching, erythema, and persistence.

Key words: allergic contact dermatitis, vaginal itching, perineum itching, allergens

What is Allergic Contact Dermatitis

Allergic contact dermatitis (ACD) is a common cause of vaginal itching caused by chemical allergens, known as haptens, that bind to antigen-presenting cells, activating

lymphocyte trafficking. This is considered a type IV delayed hypersensitivity reaction. Antigen-presenting Langerhans cells recognize and process the antigens, and the production of T-lymphocytes and numerous cytokines starts the inflammatory process. The inflammatory process continues by ongoing activation of the lymphocytes in the areas exposed to the offending allergen and continues for an extended period.

The easiest way to get rid of ACD is for the patient to discontinue the use of the offending allergen. The difficulty for the physician is identifying the offending chemical from the thousands of allergens, both natural and synthetic, in the patients' everyday lives. The most well-recognized example of a cause of ACD is poison ivy. There are many "natural" causes of ACD including most fragrances or botanicals, such as rosemary, tea-tree oil, lavender, cinnamon, and mint.

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The authors declare that they have nothing to disclose.

After someone is exposed to a chemical they are allergic to, it takes a minimum of 24 to 48 hours for the reaction to begin. Once the reaction begins, the reaction lasts for weeks to months. This is because once the lymphocytes are activated, they migrate to the affected area and stay localized for months. This makes each sequential exposure more rapid and more severe. A minimum 3 to 6 months of zero exposure to the allergen is required for the allergy to completely resolve. Even after avoiding the allergens, patients frequently report increased irritability in areas previously affected by ACD. Being hot, sweaty, and wet may temporarily cause irritability in those areas long after the ACD has subsided, but the irritability usually fades rather quickly.

ACD of the vagina and perineum is similar to ACD of other areas of the body, what differs are the chemical causes of the ACD, because the particular products and medications that patients use on their vagina and perineum are very different (usually) than what they would put on their face.

Causes of ACD of the Vagina and Perineum

There are several common allergens that typically cause ACD of the vagina and the perineum. These chemicals are often found in shampoo, conditioner, body wash, dish soap, and other regular things used by millions of people everyday.

The common allergens found in these products that cause contact dermatitis of the vagina and the perineum (ACD) are methylisothiazolinone (MI) and other preservatives similar to it. In addition, acrylates, topical steroid preparation either through the vehicle propylene glycol or steroid allergy themselves, and fragrance may cause ACD. Plus, topical anesthetics in Vagisil and anti-itch cream preparations may cause ACD as well.

Dietary allergens may also cause ACD. This is also known as baboon syndrome.

Baboon syndrome is a systemic contact dermatitis from ingestion of allergens that have previously caused ACD. This reaction may produce erythema of the gluteal and inguinal regions, and flexural areas.

Benzocaine may also cause a condition called erosive papulonodular dermatitis that is distinct from allergic contact dermatitis. Allergies are commonly associated with esters. Benzocaine, a common chemical in anti-itch medication, is an anesthetic amide, and is not typically associated with an allergy because it contains an amide component.

When benzocaine causes erosive papulonodular dermatitis there is a strong behavioral component. The behavioral component works as follows: when patients have vaginal itching, they apply benzocaine, which causes a temporary relief of their symptoms, but at the same time, it worsens the underlying dermatitis. This becomes a vicious cycle, requiring significant intervention to break the cycle. In our experience, at least one of these patients required admission into the hospital to break this cycle (Fig. 1).

The most common causes of ACD of the vagina and perineum are nickel, perfume/fragrance, local anesthetic, neomycin, ethylenediamine, corticosteriodes, caines, Balsam of Peru, and preservatives.

Specific common cases of ACD in the vulvar or vaginal region are as follows.



FIGURE 1. Erosive papulonodular dermatitis associated with topical benzocaine.

MI/METHYLCHLOROISOTHIAZOLINONE

MI is a very common preservative in many products. The most common product that leads to genital dermatitis is personal hygiene wipes, baby wipes, or flushable moist toilet paper. Commonly, the rash is worse on the hand of dominance, which applies the wipes. The increasing use of these wipes is making it common to have patients present with this type of dermatitis in the perineum. In this setting, the most likely culprit is the sanitary wipes or baby wipes. However, additional exposures through shampoo and conditioner, moisturizers, body wash, or other personal care products are also very common and can explain how the dermatitis may extend beyond the vagina and perineum or persist long after cessation of the individual's use of the wipes. A common explanation for perineum irritation is improper cleaning that leads to patients starting to use these products in an attempt to improve hygiene (Fig. 2).

When you are strictly dealing with a maceration or irritation issue, the symptoms tend to be more episodic improving in the morning, when people are away from work or activity, or after bathing. The symptoms differ as well in that they tend to be more of a burning, stinging, or discomfort, rather than pruritus. The symptoms of ACD produce a true type IV allergy with severe pruritus, rather than an irritation.

ESTER ANESTHETICS

Another common group of chemical allergens involved are the topical anesthetics. Typically ester-based anesthetics that are often used to treat the symptoms of yeast infections or other nonspecific problems. Once an allergy is developed they provide a self-reinforcing cycle of temporary relief followed by worsening symptoms. In dealing with patients who are allergic to topical preparations of anti-itch cream it can be extremely difficult to differentiate the underlying etiology,



FIGURE 2. The typical appearance of allergic contact dermatitis due to methylisothiazolinone contained in personal care wipes.

however, the symptoms of ACD tend to be very reproducible. One approach can be to take the same cream and have the patient apply it to a small spot on their arm each day for a week and see if they have a reaction that is reproducible on previously unaffected skin.

TOPICAL STEROIDS

Topical steroids frequently are involved in ACD of the perineum as well. They are often used to treat lichen sclerosis or other nonspecific dermatitis when they develop an allergy to an ingredient in the preparation. Most commonly it develops to propylene glycol or the steroid agent itself. These can be difficult to identify because they partially suppress their symptoms and flare when use is stopped. Differentiating whether it represents an allergy to the steroid or the vehicle requires patch testing to be performed. The typical presentation is transient improvement for a period of 2 to 3 days while the topical steroids are being actively applied with a rebounding flare with an increase in severity soon after cessation.

FRAGRANCE

The fragrance class of allergens can be very difficult to identify because fragrance is a very generic term for thousands of different chemicals. It is a commonly implicated source of ACD. There are many products now that are not truly fragrance free that are called “unscented” or “fragrance free” but in fact have masking fragrance. For something to be truly fragrance free it should not have names of flowers in the ingredients or anything called fragrance or “parfum” in the ingredients.

Acrylates are a common cause of vaginal ACD. Hydroxy ethyl acrylate, methyl methacrylate are common ingredients in artificial nails, glues, and some absorbent resins. These can play a contributing role in a couple of ways. One is through the transfer associated with artificial nails from itching. This is typically patchy in nature, often involving at least 1 additional site with more significant involvement of the vulva. The other interesting reaction that occurs due to the sensitization usually due to artificial nails is from acrylate-based absorptive resins found in pads. These will create a dermatitis that is usually well defined, persistent, and often in the shape of the pad that is used (Fig. 3).

How to Differentiate ACD of the Vagina and Perineum, From Other Causes

The key differentiating factors of ACD are persistence, intense itch, and erythema with relevant exposure. All of these factors need to be present for it to be ACD. Normal causes of vaginal itching should have already been excluded at this point.

ACD persists at a minimum of 3 months even after the last exposure. The intense itch is frequently characterized as an itch keeping patients up at night and preventing them from performing their daily activities. Unlike itching in other areas of the body, itching of the vagina and perineum is not



FIGURE 3. Well-demarcated erythema of the vagina related to acrylate allergy in absorbent pads. Sharp demarcation should favor a diagnosis of allergic contact dermatitis.

socially acceptable, and thus patients have an especially difficult time dealing with ACD of the vagina and perineum.

In the case of ACD, the symptoms are generally consistent. By definition it is a delayed reaction that is persistent in nature. Intermittent itching that waxes and wanes over the course of days makes true ACD very unlikely. The dermatitis should be present for weeks to months. Exceptions to this are related to the underlying effect of the topical preparations. When using a topical steroid to which the patient is allergic to they will likely get short-term relief followed by a worsening of the symptoms with cessation.

The final common pathway for irritant contact dermatitis and allergic is very similar with an ultimate common morphology. Initially the differentiation can be made because an irritant dermatitis causes greater burning than itching.

Irritant contact dermatitis will be more of an accentuation of the epidermal lines, a scalded appearance, and a superficial erythema. ACD will be more of a dermal process often with a papulovesicular appearance on an erythematous base.

Incidence of ACD of the Vagina and Perineum

The incidence of vulvar contact dermatitis is unknown in the general population. The incidence in vulvar clinic in the United Kingdom was 20% to 30%, and 26% of those had relevant patch tests.¹ The incidence in an Australian vulvar clinic was 15%.²

In adult women, allergic and irritant contact dermatitis accounts for around 50% of cases of chronic vulvovaginal pruritus.³ Vulvar skin may complicate the presentation of other dermatoses. Theoretically there is an increased risk for sensitization: because of differences in structure, occlusion, and hydration and susceptibility to friction, vulval skin is more permeable than exposed skin.⁴

A prospective study showed a very high rate of contact sensitivity in patients presenting with vulval pruritus. One or more clinically relevant allergens were found in 44% of the subjects tested.⁵

Summary

ACD of the vagina and perineum is an important cause of perineal pruritus and is challenging for the clinician to diagnose and treat. The diagnosis of ACD is suggested by a persistent intense itch, whereas a primary contact irritant dermatitis tends to sting and burn. An ACD can last

for weeks or months, even after the offending agent is eliminated.

The diagnosis of a contact allergy to a topical anesthetic, antipruritic agent, or ingredient in a topical steroid formulation can be especially challenging. These allergic agents, although the culprit may provide immediate relief when applied to a pruritic rash, but then they worsen the situation, causing a severe rebound flare in symptoms when discontinued. This is especially true for components of topical steroids and caines.

It is important for the clinician to be aware of a new emerging cause of ACD: MI. This is an important ingredient in personal hygiene wipes. The patient often demonstrates a pruritic rash on the dominant hand, and the site of application. Referral of the patient to an ACD specialist for allergy patch testing is often helpful to delineate the specific allergic culprit and aid in management.

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