Vulvovaginal Complaints

Chelsea Bayer, MD

Laura Parks, MD^{*}

Address

^{*}Washington University School of Medicine, St. Louis, MO, USA
Email: parkslla@wudosis.wustl.edu

Published online: 26 July 2016

© Springer International Publishing AG 2016

This article is part of the Topical Collection on *Pediatric Gynecology*

Keywords Vulvar care · Pediatrics · Vulvovaginitis · Hygiene · Treatment

Opinion statement

Teaching patients the proper vulvar care is the first, and arguably the most important, aspect of treating vulvovaginal complaints in the pediatric population. Other treatments, which will be discussed in this chapter, will be less effective with a high risk of recurring symptoms if the patient and her parents do not adopt good vulvar care habits. Vulvovaginitis usually can be managed with conservative measures, including proper hygiene and education on vulvar care guidelines. These include avoiding chemical irritants and excessive hygiene, wearing white cotton underwear, avoiding dryer sheets, wiping from front to back, and limiting tight-fitting clothing. Additionally, it is important to discuss bathing, including recommending showers or baths without soaps and bubble products. If both the child and the parents follow these simple rules, the vast majority of vulvovaginal complaints will dramatically improve. Consistently following the vulvar care guidelines will not only help relieve the symptoms of itching and irritation but will also aid in the healing and treatment of vulvovaginitis. If the girl is infected with a specific organism, the treatment should be directed at that organism, and the girl should be educated on proper vulvar care. Finally, any condition that requires topical steroid ointment or simple barrier creams will be treated more quickly and effectively when good vulvar hygiene is added to the treatment regimen.

Introduction

Vulvovaginal complaints are the most common reasons for a young girl to see a pediatric gynecologist [1]. Vulvovaginitis describes conditions in which either the external genitalia, the vagina, or both are inflamed, irritated, pruritic, or erythematous [2]. Such conditions are commonly caused by irritation from chemicals such as scented soaps or detergents, poor hygiene, or excessive

hygiene. In addition to a tendency towards poor perineal hygiene, young girls are also more susceptible to generic vulvovaginal complaints than their post-pubertal counterparts. This is because pre-pubertal girls have a nonestrogenized vaginal mucosa with a more alkaline pH, lack labial development, and lack pubic hair, which provide a protective barrier [3].

A complete history is essential to treating vulvovaginal complaints and can help the physician decide whether more extensive treatment or intervention is necessary. In addition to helping the physician develop a differential diagnosis, a history is important as children may misinterpret urinary or bowel complaints as vulvovaginal complaints. The patient and her parents should be asked questions about hygiene, possible exposures to irritating chemicals, timing of itching, and possible foreign bodies that may have been inserted into the vagina, most commonly toilet paper. Chronic self-stimulatory habits can lead to thickening of the clitoral hood and, consequently, to non-specific vulvovaginal complaints in pre-pubertal children. Finally, the physician should always keep in mind that sexual abuse can lead to vulvovaginitis. Taking the time to obtain a thorough history can help identify common triggers or causes of the vulvovaginitis and prevent unnecessary tests or treatments.

The two most common causes of vulvovaginitis are local irritants and foreign bodies; infection is a distant third [4]. Most common causes of infection include streptococcus pyogenes [5], pinworms, candida, or sexually transmitted infections. Non-sexually transmitted vulvar ulcers or aphthous ulcers (Fig. 1) are unique in that they are generally quite painful and often paired with systemic symptoms such as fever, fatigue, and malaise [6]. Cutaneous vulvar disorders, such as lichen sclerosis (Fig. 2) or labial adhesions (Fig. 3), are a less common cause of vulvovaginal complaints but need to remain on the differential, especially in the setting of refractory symptoms. Diagnosis and treatment of these

Fig. 1. Aphthous ulcers (Photo by Diane F. Merritt MD)

Fig. 2. Lichen Sclerosis (Photo by Diane F. Merritt MD)

specific causes of vulvovaginitis and some less common causes are outlined in Table 1 below.

Because local irritation is the most common cause of vulvovaginitis, treatment is commonly conservative with a behavioral component to improve symptoms. Treatment is based almost entirely on education and

Fig. 3. Labial adhesions (Photo by Laura A. Parks MD)

Table 1. Vulvovaginal complaints and treatment

Cause	Presentation	Diagnosis	Treatment
Atopic dermatitis	Itching, skin dryness, erythema, oozing and crusting, and lichenification	Clinical diagnosis based on history and morphology of lesions	Vulvar care guidelines, topical steroids for flare-ups
Candida	Uncommon in prepubertal girls, usually with recent antibiotic use or who are immunosuppressed. Itching and discharge [7].	Candida seen on wet prep, fungal culture	Fluconazole or miconazole
Condyloma acuminata	Skin-colored flattened papules often with cauliflower or smooth appearance	Visual inspection, HPV testing not helpful. Biopsy only if diagnosis is questionable [8].	Observation and trichloroacetic acid. Imiquimod therapy may help. Surgical management with laser or cryotherapy is an option [9].
Contact dermatitis	Erythematous and edematous, rarely with vesicles or pustules.	Localized irritation with exposure to irritant	Vulvar care guidelines, topical steroids
Foreign Body	Chronic discharge, occasional vaginal bleeding, foul-smelling odor	Visual inspection and history. May require exam under anesthesia.	If specimen is visualized, may remove in office with swab or irrigation with warm water. Exam under anesthesia may be necessary.
Herpes Simplex	Vesicular ulcers or blisters that tend to break open	Culture from lesion	Acyclovir
Labial Adhesions (Agglutination)	Can have partial or full fusion, may have difficulty urinating, recurrent UTIs/infections, pulling sensation.	Visual inspection	No treatment necessary if asymptomatic. Vulvar care guidelines. Topical estrogen +/- topical steroids. Surgical correction is RARELY necessary [10]
Lichen Sclerosis	White lesion, typically in a butterfly configuration with whitened skin circumscribing the vulvar and perianal areas	Visual inspection, biopsy confirmation not required in pediatric patients.	Super-potent topical steroid daily for 6 weeks, with taper [11]. May need maintenance therapy.
Non-sexually transmitted ulcers ("aphthous ulcers")	One or more painful ulcers with raised edges and purulent bases, often accompanied by systemic symptoms	Rule out sexually transmitted origin. Viral etiology often not determined, can test for EBV, CMV, or influenza A	Treat symptomatically with topical anesthetics and pain control; may require antibiotics if appears super-infected. Generally self-resolve in 2–3 weeks.
Pinworms	Pruritis ani or perianal itching, classically at night.	Scotch tape test or visual inspection	Single 100 mg dose Mebendazole or Albendazole. Repeat in 2 weeks if needed.
Seborrheic dermatitis	Erythematous and greasy, yellowish scaling on vulva and labia-crural folds associated with dandruff-type folds behind ears/face	Visual inspection	Topical clotrimazole with 1 % hydrocortisone if needed
Streptococcus pyogenes	Flare of vulvovaginal complaints with respiratory infections	Vaginal cultures should be obtained if discharge is purulent or persistent	Penicillin or similar antibiotic

adoption of proper vulvar care by the patient and her parents, with the caveat that some specific causes may require antibiotics, topical steroids, topical hormones, or other pharmacologic intervention. If, after a thorough history is obtained and physical examination of the vulva is performed, the physician is unable to identify a cause of the child's symptoms, conservative therapy should be started for non-specific vulvovaginitis. For non-specific vulvovaginal complaints, strict

adherence to the vulvar care guidelines outlined in the lifestyle section below will lead to relief of symptoms in most children in 2–3 weeks. If symptoms persist after this amount of time, other causes of the vulvovaginitis should be explored and the child should be reevaluated. Even if a specific pathogen is identified, the child will likely get more relief from her symptoms if medical treatment is combined with behavioral support.

Treatment

Lifestyle

- Daily warm baths
 - Allow child to soak in plain warm water for 10–15 min
 - Clean other areas with mild, unscented soap
 - Avoid scented soaps, cleansers, and bubble baths
 - Finally, clean the vulva, limiting soap use, and rinse well
 - Pat dry the vulva after bath or use hair dryer on low/cool heat setting
- Laundry
 - Double rinse underwear
 - Line-dry underwear or avoid dryer sheets or as dryer sheets leave potentially irritating chemicals in the dryer
- Clothing
 - Wear white cotton underwear
 - Avoid leggings, tights, and leotards
 - Change quickly out of wet swim wear, or sweaty or soiled underwear
- Toileting hygiene
 - Wipe front to back—have child demonstrate their understanding
 - Wet wipes may be less irritating and more thorough than toilet paper for wiping after bowel movements
 - Encourage child to sit with knees apart when urinating to prevent reflux back into vagina—parents may need to purchase a smaller seat or have the child face backward if she is too small to sit with her knees apart on a regular toilet
 - Parents should supervise toileting until child can consistently demonstrate proper hygiene
- Do not scratch

- Take sitz baths in warm water for relief of itching
- Cool compresses may relieve discomfort
- Sleeping
 - Do not wear underwear while sleeping
 - Choose nightgowns or shorts instead of pajama pants to allow air circulation

Pharmacologic treatment

Antibiotics

Amoxicillin (oral)[12]

Dosing	25 to 50 mg/kg/day in divided doses every 8 h
Contraindications	hypersensitivity
Interactions	BCG, Probenecid, tetracyclines, typhoid vaccine
Main side effects	diarrhea
Cost	very inexpensive

Antifungals

Clotrimazole (topical)[12]

Dosing	1 % ointment applied once or twice daily
Contraindications	hypersensitivity
Interactions	rare, possibly Xanax
Main side effects	skin irritation or rash, edema
Cost	inexpensive

Corticosteroids

Clobetasol (topical)[12]

Dosing	0.05 % ointment applied daily to weekly
Contraindications	hypersensitivity
Interactions	Aldesleukin, Hyaluronidase
Main side effects	Atrophic striae, local irritation, hyperglycemia, or adrenal suppression
Cost	inexpensive
Dosing	1 % ointment applied two to three times daily, up to four times daily

Hydrocortisone (topical) [12]

Contraindications	hypersensitivity
Interactions	Aldesleukin, Hyaluronidase
Main side effects	Atrophic striae, local irritation, hyperglycemia, glucosuria, or adrenal suppression
Cost	inexpensive

Estrogens

	Topical estrogen or estradiol cream[12]
Dosing	0.01 % ointment applied twice daily
Contraindications	hypersensitivity, estrogen dependent tumor
Interactions	BCG, Probenecid, tetracyclines, typhoid vaccine
Main side effects	irritation, redness, vulvar hyperpigmentation, minimal vaginal bleeding, and breast bud formation
Cost	inexpensive

Surgery

	Surgical separation of labial adhesions (Fig. 2)
Standard procedure	Application of topical anesthetic and mild sedation, as needed, is followed by insertion of a lubricated Q-tip behind the labia minora. The Q-tip is then gently pulled forward along the midline raphe formed by the fused labia minora. Surgery should be followed by topical estrogen cream for 1 to 2 weeks and then application of a bland emollient for 6 to 12 months.
Contraindications	Unable to tolerate in office or unable to tolerate anesthesia
Complications	Can cause further scarring and should therefore only be performed in those for whom medical management has failed or who have serious symptoms such as complete urinary obstruction

Conclusion

Vulvovaginitis is a disruptive problem that is by definition irritating or painful but can also be distracting or embarrassing for a young child. The overwhelming majority of vulvovaginal complaints are due to local irritants and behaviors that can be modified. Thus, most cases can be treated conservatively and most of the patient should see improvement in their symptoms in 2–3 weeks after adopting the vulvar care guidelines outlined in this chapter. For the remaining cases that have a specific cause, treatment is dependent on accurate diagnosis. Therefore, any child without improving symptoms after behavioral modifications should be reevaluated.

Vulvovaginitis is the most common reason for a young girl to visit a pediatric gynecologist, but fortunately, this complaint can almost always be treated without complex medical or surgical intervention; just a few simple changes to the child's habits can have an enormous impact on their symptoms and how they feel on a day-to-day basis.

Compliance with Ethical Standards

Conflict of Interest

Chelsea Bayer and Laura Parks declare that they have no conflict of interest.

Human and Animal Rights and Informed Consent

This article does not contain any studies with human or animal subjects performed by any of the authors.

References and Recommended Reading

1. Joishy M, Ashtekar CS, Jain A, Gonsalves R. Do we need to treat vulvovaginitis in prepubertal girls? *BMJ*. 2005;330:186.
2. Hoefgen, Holly R., and Diane F. Merritt. "Vulvovaginitis." *Nelson Textbook of Pediatrics*. Philadelphia: W.B. Saunders, 2000. 2607–613.
3. Garden AS. Vulvovaginitis and other common childhood gynaecological conditions. *Arch Dis Child Educ Pract Ed*. 2011;96:73.
4. Piippo S, Lenko H, Vuento R. Vulvar symptoms in paediatric and adolescent patients. *Acta Paediatr*. 2000;89:431.
5. Yilmaz AE, Celik N, Soylu G, et al. Comparison of clinical and microbiological features of vulvovaginitis in prepubertal and pubertal girls. *J Formos Med Assoc*. 2012;111:392.
6. Farhi D, Wendling J, Molinari E, et al. Non-sexually related acute genital ulcers in 13 pubertal girls: a clinical and microbiological study. *Arch Dermatol*. 2009;145:38.
7. National guideline for the management of vulvovaginal candidiasis. Clinical Effectiveness Group (Association of Genitourinary Medicine and the Medical Society for the Study of Venereal Diseases). *Sex Transm Infect* 1999; 75 Suppl 1:S19.
8. Maw RD. Treatment of anogenital warts. *Dermatol Clin*. 1998;16:829.
9. Kraus SJ, Stone KM. Management of genital infection caused by human papillomavirus. *Rev Infect Dis*. 1990;12 Suppl 6:S620.
10. Bacon JL, Romano ME, Quint EH. Clinical recommendation: labial adhesions. *J Pediatr Adolesc Gynecol*. 2015;28:405.
11. Casey GA, Cooper SM, Powell JJ. Treatment of vulvar lichen sclerosus with topical corticosteroids in children: a study of 72 children. *Clin Exp Dermatol*. 2015;40:289.
12. Red book: pharmacy's fundamental reference. Montvale, NJ: Thomson Reuters, 2010. Print.