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# In Brief

## Vulvovaginitis

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### Author Disclosure

Drs Kokotos and Adam did not disclose any financial relationships relevant to this In Brief.

**Vulvovaginitis in the Child and Adolescent.** Vandeven AM, Emans SJ.

*Pediatr Rev.* 1993;14:141–147

**Pediatric Vulvovaginitis.** Farrington PF.

*Clin Obstet Gynecol.* 1997;40:135–140

**Pruritus Vulvae in Prepubertal Children.**

Paek SC, Merritt DF, Mallory SB.

*J Am Acad Dermatol.* 2001;44:795–802

**Vulvovaginitis During Childhood and Adolescence.**

Koumantakis EE, Hassan EA, Deligeorgiou EK, Creatsas GK. *J Pediatr Adolesc Gynecol.* 1997;10:39–43

**Vaginitis in the Adolescent Patient.**

Nyirjesy P. *Pediatr Clin North Am.* 1999;46:733–745

**Common Office Problems in Pediatric Urology and Gynecology.**

Brown MR, Cartwright PC, Snow BW. *Pediatr Clin North Am.* 1997;44:1091–1115

Vulvovaginitis is an inflammation of the vulva and vaginal tissues. The usual symptoms are discharge, discomfort, pain or pruritus, vulvar irritation, or burning on urination. With infants and young children, the parent may report a discharge on the diaper or panties, an abnormal vaginal odor, or redness of the vulva. The epidemiology and presentation of vulvovaginitis differ in prepubescent and adolescent girls. In childhood, the infection begins in the vulva, with secondary spread to the

vagina; in adolescence, particularly after the onset of sexual intercourse, vaginal involvement is primary.

Young girls are particularly susceptible to vulvovaginitis. The genital area is close to the rectum, and without the labial fat pads and pubic hair that come with maturity, the vulva of a young child is unprotected. Vulvar skin is thin and particularly sensitive to trauma from scratching or rubbing or to exposure to irritants such as harsh soaps or bubble baths. The vaginal mucosa of young girls also is thin and relatively atrophic, and the vaginal cavity, with its neutral pH, warmth, and moisture, makes an excellent environment for bacterial growth. Children tend to have poor hygiene after urination and defecation, allowing pathogens to contaminate the vulva. Inadequate hand washing, especially after playing in dirt or sand, can add to irritation or bacterial contamination of the vulva. Tight-fitting clothing, nonabsorbent underpants, and obesity also can contribute to vulvar irritation. Other risk factors for vulvovaginitis are an intravaginal foreign body and sexual abuse.

The first step in any evaluation is to take a history, which should be obtained from both the parent and from the child, if she is old enough. An adolescent should be interviewed alone. The history should include questions about itching, discharge (color, quantity, odor, consistency, and duration), dysuria, and redness as well as about perineal hygiene, exposure to irritants such as bubble baths and soaps, and the use of medications, either topically or systemically. Anal pruritus and any allergies or recent infection in the child or family can be relevant, as, obviously, is sexual activity in an adolescent. As

uncomfortable as the subject is, sexual abuse must be considered and the pertinent questions asked.

The physical examination should look for evidence of chronic illness or dermatologic disease. In children, the perineum and vulvar introitus can be inspected while the child is in the frog-leg (supine) position or knee-chest position. The labia can be retracted gently to allow visualization of the vagina. Any abnormality of the hymen should be documented if sexual abuse is suspected. If there is significant discharge, specimens should be collected with a sterile, saline-moistened swab for wet mount preparation, Gram stain, and culture. If sexual abuse is a consideration, appropriate cultures should be collected for forensic evidence. A saline-moistened calcium alginate swab is smaller and more comfortable for a prepubescent girl than a cotton-tipped swab. For a sexually active adolescent, a complete pelvic examination with speculum should be performed. When bleeding or malodorous discharge raises concern about a foreign body, an examination under anesthesia may be necessary if adequate visualization is not otherwise possible. If night-time pruritus suggests pinworms, the family can be instructed to apply the sticky side of adhesive tape to the perianal area to collect eggs for microscopic inspection.

Some 25% to 75% of vulvovaginitis in a pediatric practice is nonspecific, resulting from poor hygiene, improper wiping, vaginal voiding, tight panties, or irritation from bubble bath or harsh soap. Typically, the associated discharge is scanty, nonpurulent, mucoid, and nonodorous. Treatment involves improving hygiene with appropriate

hand washing, wiping from front to back, using loose cotton underpants and avoiding nylon tights or tightly fitting clothing, and eliminating chemical irritants. Sitz baths and bland emollients may offer symptomatic relief.

Bacterial vulvovaginitis most commonly results from poor hygiene in young girls and may be due to respiratory or enteric organisms. Among adolescents or prepubescent girls who have been abused, sexually transmitted organisms must be considered. Group A beta-hemolytic *Streptococcus* is the most common cause of infections among respiratory pathogens, usually presenting with an abrupt onset of a seropurulent discharge, pruritus, dysuria, and erythema and tenderness of the vulva. *S pneumoniae* and *Neisseria meningitidis* also have been associated with vulvovaginitis. *Staphylococcus aureus*, *Moraxella catarrhalis*, and *Haemophilus influenzae* can be normal flora, but also may cause active infection. *Shigella* sp are the most common of the enteric pathogens causing vulvovaginitis, with a mucopurulent bloody discharge often accompanied by diarrhea either in the patient or her family. Both *Escherichia coli* and *Yersinia enterocolitica* also have been associated with vulvovaginal infection. Treatment of bacterial infection consists of an appropriate antibiotic.

Candidal vulvovaginitis is common in the adolescent years and does occur, although less frequently, in prepubescent girls, often secondarily to a predisposing factor such as a recent course of antibiotics, diabetes mellitus, an immunodeficiency, or wearing of diapers. Usually, the patient complains of a nonodorous white discharge, pruritus, and dysuria. Physical findings typically are erythema and edema of the vulva and vaginal mucosa, with an adherent white discharge and, in severe cases, fissures and excoriations. In infants and

young girls, an erythematous perineal rash with satellite lesions is common. The classically described "cottage cheese" discharge actually is an unusual finding. The diagnosis can be confirmed by a wet mount preparation, to which 10% potassium hydroxide is applied, that shows characteristic pseudohyphae. Treatment consists of topical and, in severe or complicated cases, oral antifungal preparations.

For a young girl who has malodorous purulent discharge, especially if it is blood-tinged, a foreign body is the most common cause, usually toilet paper unintentionally placed in the vagina. Among adolescents, the most common foreign body is a forgotten tampon, which may cause a very malodorous discharge and vaginal ulcerations. Removal of a foreign body from a young girl may require sedation.

Pinworms (*Enterobius vermicularis*) are a common cause of perirectal and vulvar pruritus in children. Mature pinworms lay eggs at night around the anus and vulva. The diagnosis can be made by seeing the 1/2-inch long white, threadlike worms in the perianal region at night or by touching transparent adhesive tape to the perianal region to look for microscopic eggs. Treatment is 100 mg of oral mebendazole, repeated 2 weeks later to kill worms that may have hatched after the initial dose. Bedding and clothing should be laundered.

*Trichomonas vaginalis*, a protozoan, is an uncommon cause of vulvovaginitis in children or adolescents unless they have been sexually abused or are sexually active. The presenting complaint is vaginal discharge, dysuria, and vulvar pruritus. The discharge typically is malodorous and may be yellow-green or frothy. Erythema of the genitals sometimes is accompanied by punctate hemorrhages of the vagina and cervix. The diagnosis is made by microscopic examination of a wet-mount preparation

disclosing motile, flagellated, tear-shaped organisms. Because trichomonal infection is sexually transmitted, its presence should raise concern about other sexually transmitted diseases. Metronidazole is the treatment of choice.

Both herpes simplex virus-1 and -2 can cause genital disease. Although perinatal transmission has been described as a cause of childhood genital herpes, infection occurs primarily through sexual contact and, in prepubescent girls, should raise concern about abuse. Patients complain of vaginal itching, dysuria, and local pain. Grouped vesicles on an erythematous base, with pain and erosions, are the typical physical finding. Viral culture confirms the diagnosis. Treatment is with oral acyclovir; sitz baths and topical emollients may be used for symptomatic relief.

Vulvovaginitis is common in pediatric practice. The differences in cause and presentation between prepubescent and adolescent girls should guide the evaluation. Diagnosis may lead to a specific therapy, but many times, especially with young children, the problem is nonspecific and related to poor hygiene or chemical irritants. Treatment must include education.

**Comment:** Just a reminder that human immunodeficiency virus (HIV) is a sexually transmitted infection, and when sexual abuse is considered in a child who has vulvovaginitis, HIV testing should be included in addition to appropriate cultures and serology for syphilis. Obviously, any adolescent who has sexually transmitted vaginitis also should be offered testing for HIV infection.

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Editor, In Brief

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