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Vulvovaginitis: Diagnosis and management in prepubertal girls

Aim

The aim of this document is to provide an evidence-based clinical guideline for the diagnosis and management of prepubertal girls with vulvovaginitis who present to the Emergency Department or the Out-patient Department.

Definition of Terms

OPD, Out-patient Department; Strep, Streptococcus; Staph, Staphylococcus; ED, Emergency Department
Vulvovaginitis: inflammation or irritation of the vagina and vulva.

Target Patient Population

This evidence summary applies to girls who are prepubertal who present with symptoms of vulvovaginitis. It does not deal with the management of vulvovaginitis in postpubertal girls.

Target Users

This guide is directed at health-care professionals engaged in the diagnosis and management of prepubertal girls who present with symptoms of vulvovaginitis to the ED or OPD.

Assessment

Introduction

Vulvovaginitis is the most common gynaecological complaint in prepubertal girls.[1, 2] It can be a source of great physical as well as psychological stress not only to the girl but also to her parents.[3]

Predisposing factors in prepubertal girls

- The vulval skin is thin and delicate with small labial fat pads and no pubic hair
- A lack of oestrogen is a normal physiological situation in a prepubertal girl which causes the vaginal mucosa to be more susceptible to infection.
- The vagina lacks both lactobacilli and glycogen. The pH is typically neutral with a pH 6.5 to 7.5.[4]
- The vulva and vaginal mucosa are more easily irritated by trauma as well as chemical, environmental and allergic exposures. The vulva is in close proximity to the anus.
- Poor hand hygiene can lead to the transmission of respiratory bacteria via the hands to the perineal area.
- Intravaginal foreign bodies are not common. The foreign material is usually fragments of toilet paper or fluff.[5] There may be a foul smelling discharge or visualisation of the foreign body while inspecting the genitalia.

History

- Atopy, allergies and skin conditions (also in family history)
- Hygiene habits
- Physical activities (cycling, horse-riding, swimming)
- Voiding habits
- Previous or current urinary infections
- Bowel irregularities and recent gastroenteritis
- Enuresis, encopresis
- Recent infectious diseases (chickenpox, glandular fever)

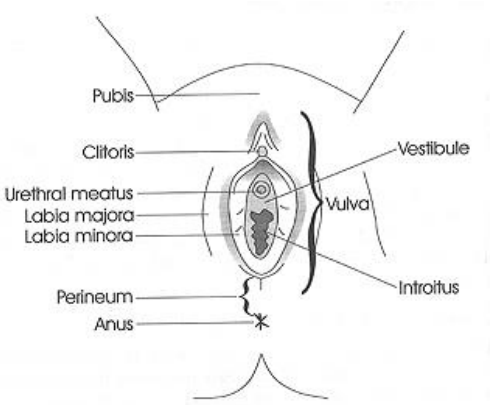
- Pharmacological treatments (antifungal, antibiotics, corticosteroids)
- Symptoms (pain, pruritus, burning, dysuria, discharge), their localisation & time of day when worst
- Social history- do the parents/guardians or health care workers have any child protection concerns?

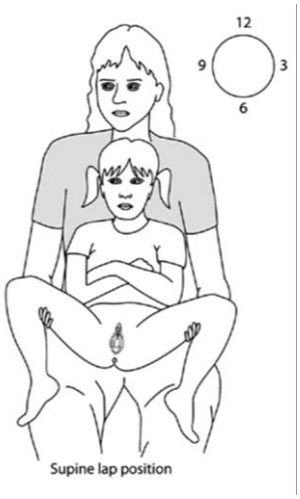
Clinical features of Vulvovaginitis

- Soreness of the vulva
- Vulval erythema
- Vaginal discharge
- Pruritus
- Dysuria
- Bleeding

Female external genitalia anatomy and examination position:

The examination should be performed in the frog-leg position. The child can be seated on the mother's lap to minimise discomfort for the child.





Common Pathogens Isolated

- Vulvovaginitis without an identifiable bacterial pathogen accounts for 77-80% of all cases.[1, 6]
- The normal vaginal microflora in childhood includes Staph. epidermidis, Strep. viridans, Corynebacterium diphtheroids, Pseudomonas aeruginosa, Lactobacillus and Enterococcus faecalis.
- The most common pathogenic bacteria are Strep. pyogenes (Group A) & Haemophilus influenza.[3, 7, 8]
- A major risk factor is the history of a recent upper respiratory tract infection before the onset of symptoms.
- Other pathogens include Staph. aureus, Moraxella catarrhalis, Strep. pneumoniae, Neisseria meningitidis, Proteus mirabilis, Enterococcus faecalis, Escherichia coli, Shigella and Yersinia.[9, 10]
- The presence of a microorganism does not necessarily imply that it is the cause of the infection.
- The detection of a sexually transmitted infection (STI) or lesions consistent with herpes infection in a prepubertal child necessitates a referral for a paediatric assessment, including evaluation regarding child protection concerns. The presence of anogenital warts with suspicion of child protection concerns warrants a referral.
- The detection of "clue cells" (epithelial cells with clusters of bacteria adhering to the surface) on microscopic examination of vaginal discharge may indicate the presence of bacterial vaginosis which can be acquired sexually or non-sexually. Any concerns about the possibility of sexual abuse necessitates a referral for a paediatric assessment including evaluation for any child protection concerns.

Indications for Obtaining a Bacterial Swab

A swab is indicated in severe or recurrent cases where there is vaginal discharge present. An introital swab should be taken for gram stain, microscopy and culture. A saline-moistened small urethral swabs should be used and care taken to avoid the hymen.[11] Speculum examinations, swabs of the vagina and transhymenal swabs should not be performed in prepubertal girls.

Management

- Management is based around measures to optimise perineal hygiene.
- Link to Parental information Leaflet

Indications for antibacterial treatment

- Clinical features of vulvovaginitis with a pure or predominant growth of a pathogen.[12] A pure growth of Group A Strep should be treated with a 10-day course of Phenoxymethylpenicillin.

Indications for antifungal treatment

- Candida infection is uncommon in toilet-trained prepubertal girls, and empirical antifungal therapy is not indicated in this age group unless there are well-recognised predisposing factors.[13]
- Pre-disposing factors in prepubertal girls include napkin use, broad spectrum antibiotics, immunosuppressive therapy, prematurity, diabetes and malignancy.[12, 13]

Indications for topical oestrogen cream

- Topical oestrogen cream in vulvovaginitis is not recommended by non-specialists due to the possibility of side effects.

Threadworms

Threadworms (pinworms) due to Enterobius vermicularis should be considered where perineal pruritus is a predominant feature which is typically worse at night. The pruritus is due to an inflammatory reaction to the presence of adult threadworm and eggs on the perianal skin. Scratching leads to lodging of eggs beneath the fingernails, facilitating subsequent autoinfection and/or person-to-person transmission. 23% in a case series of 190 children with vulvovaginitis were positive for threadworms.[14]

The Sellotape slide test has a low yield and is difficult for parents as it may need to be repeated several times if negative.[2] If clinical features suggest infestation, empiric management with a single doses of mebendazole 100mg (aged 6 months to 18 years) is indicated.[15] Vermox® is available over the counter for children over 2 years. A second dose is given two weeks after the first dose to prevent recurrence due to reinfection as the medication kills the worms not the eggs.[16] To prevent reinfection, it is advised to treat all members of the household at the same time as it can be symptomless with a high transmission rate (up to 75%[17]).[18]

Other dermatology mimickers

Enquire about the presence of skin conditions or a family history. Skin problems can present with symptoms similar to vulvovaginitis including:

- Psoriasis: itchy, red, well-demarcated, symmetrical plaque with or without scales
- Lichen sclerosus: irregular, shiny pearly-white macules or papules which can coalesce into larger plaques. There may be associated areas of erosion, ulceration or purpura. It can cause intractable vulval irritation. If symptomatic, optimise perineal hygiene and use a barrier cream. For severe cases not responding to initial management, consider the use of 1% hydrocortisone ointment (BD for 2 weeks) with review by a paediatric dermatologist
- Labial adhesions: partial or complete adherence of apposing labia minora. It occurs in 1-2% of females, between three months and six years of age. This is a normal variant and will resolve spontaneously in late childhood. Provided the child is able to void easily, no treatment is needed other than reassurance

- Atopic dermatitis: erythema, scale and slight rugosity of the labia majora, and increased erythema and desquamation of the labia minora. Severe cases not responding to initial management should be referred to Paediatric Dermatology OPD.

Referral to paediatric gynaecology OPD

To refer please send a letter to Dr Geraldine Connolly who specialises in paediatric gynaecology to the Out Patient's Department of CHI at Temple Street, Children's University Hospital, Dublin 1.

Special Considerations

Indications for referral to other services:

- Link to Indications for Referral to Other Services

Companion Documents

- Link to Parental information Leaflet
- Link to Indications for Referral to Other Services

Links to Useful Websites

- http://www.rch.org.au/kidsinfo/fact_sheets/Vulvovaginitis/
- http://www.rch.org.au/clinicalguide/guideline_index/Prepubescent_Gynaecology/

Link to References