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# Vulvovaginitis in prepubertal girls

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# CLINICAL FEATURES

- ▶ Vaginal discharge
- ▶ Vulvar erythema
- ▶ Pruritus and scratching
- ▶ Vulvar pain, irritation, burning sensation and tenderness
- ▶ Vulvar rash
- ▶ Perineal odor
- ▶ Dysuria

# CAUSES

- ▶ Nonspecific causes: **The most common**
- ▶ Specific etiologies

# Etiology of nonspecific causes

- ▶ Lack of labial development
- ▶ Thin mucosa
- ▶ Alkaline pH (pH 7)
- ▶ Poor hygiene
- ▶ External irritants : bubble baths, shampoos, deodorant soaps, or other irritants
- ▶ Obesity
- ▶ Choice of clothing : leotards, tights, and blue jeans
- ▶ Chronic irritating activities: masturbation, bike riding, horseback riding

# Specific etiologies

1. **Foreign bodies:** Toilet paper, toys, hair bands, paper clips, and batteries
2. **Sexual abuse**
3. **Dermatoses :** Lichen sclerosis, eczema, psoriasis
4. **Enterobiasis :** Concurrent anal itching, Worsening at night
5. **Streptococcus pyogenes:** Purulent bloody vaginal discharge, Fiery red appearance with a sharp margin of the vulva
6. **Shigella species:** uncommon
7. **Pure growth of respiratory, enteric, and vaginal bacteria**

# Respiratory, enteric, and vaginal bacteria

1. **Respiratory** : *S. aureus*, *H. influenza*, *S. pneumonia*, *N. meningitides*, *M. catarrhalis*
2. **Enteric bacteria**: *E. coli*, *E. faecalis*, *K. pneumonia*, *P. mirabilis*, *Pseudomonas spp.*, *Yersinia spp.*
3. **Candida**:
  - Uncommon in healthy children, Frequently overdiagnosed
  - Risk factors: Recent antibiotic, Immunosuppression, Diabetes, Diapers
  - 1, 2, 3: When isolated, may or may not be the cause
4. **Sexually transmitted**: *N. gonorrhoeae*, *C. trachomatis*, *T. vaginalis*, *T. pallidum*, HSV
  - Uncommon
  - Suspicion for child abuse

# Diagnosis

- ▶ Evidence of vulvovaginal inflammation on physical examination
  - ▶ Vaginal discharge
  - ▶ Vulvar erythema
  - ▶ Irritated vulvar skin

# Identifying the cause by history 1

- ▶ Abrupt onset : **GAS infection or a foreign body**
- ▶ Scant discharge: **Nonspecific cause**
- ▶ Moderate to profuse discharge: **Infectious cause or foreign body**
- ▶ Wearing leotards, tights, or close-fitting jeans: **Nonspecific cause**
- ▶ Taking bubble baths: **Nonspecific cause**
- ▶ Washing with deodorant soap: **Nonspecific cause**
- ▶ Using a shampoo that is not for sensitive skin: **Nonspecific cause**
- ▶ Newly responsibility for perineal hygiene: **Nonspecific cause**

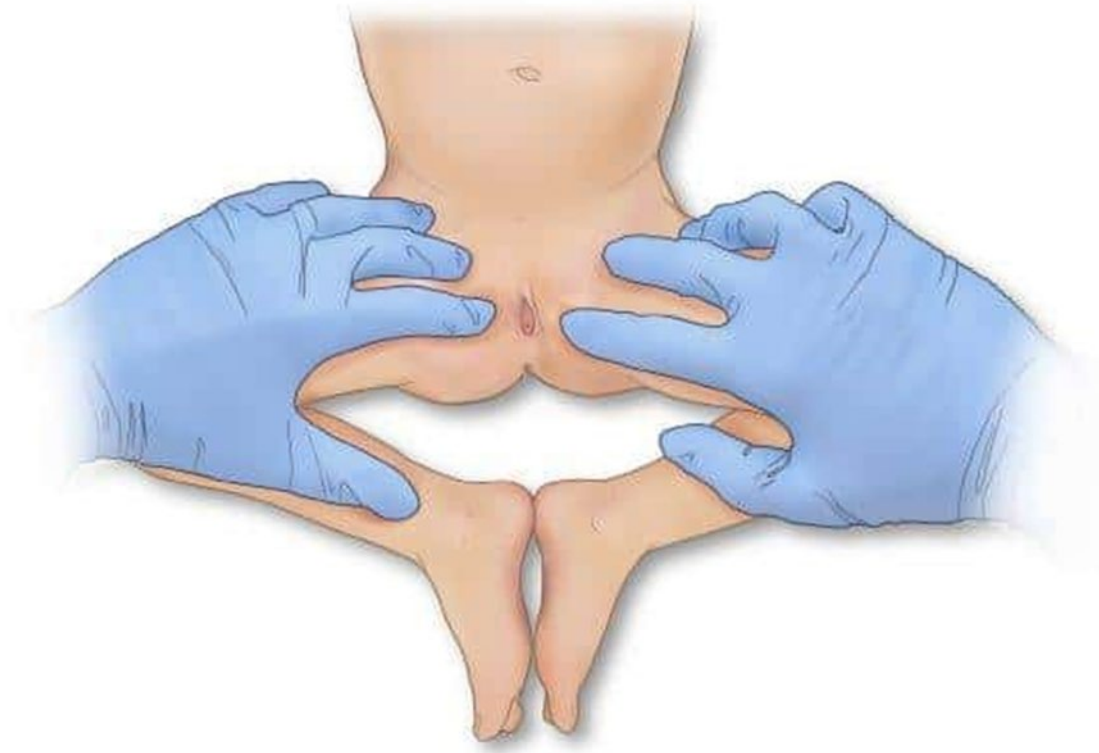
# Identifying the cause by history 2

- ▶ Perineal odor: Foreign body, nonspecific cause
- ▶ Vaginal itching: Nonspecific, usually not candida
- ▶ Worsening of itching at night: Pinworms infection
- ▶ Any concerns about other caregivers: Sexual abuse
- ▶ Any new or concerning behaviors in the child: Sexual abuse

# Methods for examining the child

- ▶ **Supine position with the legs in a "frog-leg" position:**
  - ▶ **Examine the incompletely developed genitalia**
- ▶ **Gentle lateral retraction:**
  - ▶ **Visualize the vulva, hymen, and anterior vagina**
- ▶ **Gentle grasp and pull of the labia majora anteriorly**
  - ▶ **More adequate view of the vulva, hymen, and anterior vagina**
- ▶ **"knee-chest" position with otoscope or head light and lens**
  - ▶ **Enhanced view of the anterior vagina for foreign body**

# “Frog-leg” position with gentle lateral retraction



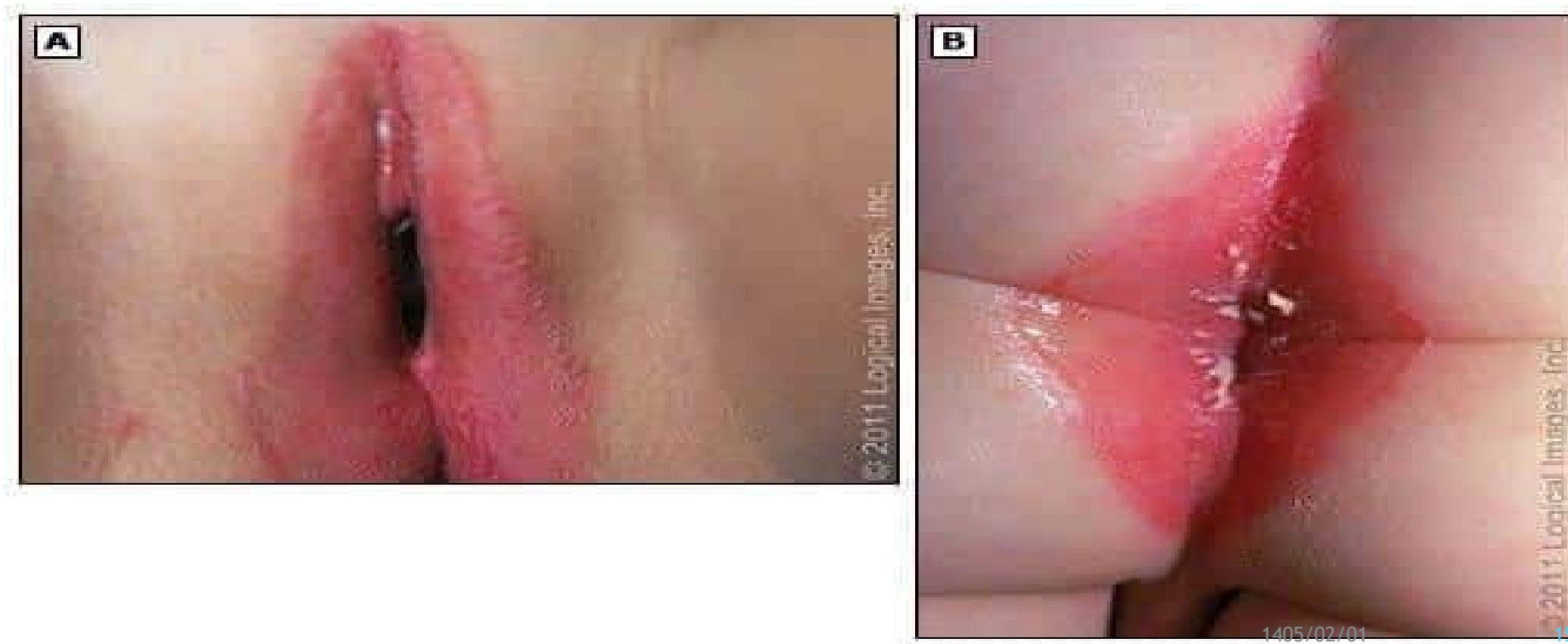
# Knee-chest position with otoscope light



# Identifying the cause by physical examination

- ▶ Scant or the absence of discharge: **Nonspecific etiology**
- ▶ Moderate to profuse purulent discharge: **Foreign body**
- ▶ Moderate to profuse purulent bloody discharge: **GAS**
- ▶ Foul perineal odor: **Foreign body**
- ▶ Well-demarcated, fiery red appearance: **GAS infection**
- ▶ Signs of itching or scratching: **Enterobiasis or exposure to an irritant**
- ▶ Dermatitis: **Lichen sclerosis, psoriasis, and eczema**
- ▶ Toilet paper or fecal matter: **Poor hygiene, nonspecific**
- ▶ Excessive moisture: **Occlusive clothing, nonspecific**

# Perineal group A streptococcal disease



# Management 1

## Initial management in a child with no apparent etiology

- ▶ If dermatoses (eg, lichen sclerosis, psoriasis, or eczema): refer to a dermatologist
- ▶ If concerns about sexual abuse: refer to a child abuse specialist.

# Management if vaginal discharge is present

- ▶ Vaginal swab for routine bacterial culture
  - ▶ Extra care in swab collection of vulva and vagina
  - ▶ Moistened swab with sterile saline
- ▶ Vaginal swab for fungal culture : Immunocompromised patients, diabetes, and prior antibiotic therapy
- ▶ Foul smelling or abruptly beginning discharge: Evaluation for a foreign body
- ▶ Growth of GAS or a shigella spp.: Etiologic diagnosis
- ▶ Negative or grow of respiratory, enteric, or vaginal flora g : Not etiologic

# Management if vaginal discharge is not present

- ▶ Mostly no need to additional evaluation
- ▶ Sending culture/empiric antibiotic therapy: Well-demarcated, fiery red vulvulitis
- ▶ Empiric anti-parasitic therapy: Itching that worse at night

# Management

## Hygiene measures for all patients

1. General hygiene measures
  2. Warm bathing
  3. Toilet hygiene
- Symptoms in most children resolve within two to three weeks

# General vulvovaginal hygiene measures

1. Keep vulva clean, dry, and well aerated
2. Avoid sleeper pajamas
3. Nightgowns
4. Cotton underpants
5. Double-rinse underwear after washing
6. Not use fabric softeners for underwear and swimsuits
7. Avoid tights, leotards, and leggings
8. Skirts and loose-fitting pants
9. Avoid sitting in wet swimsuits for long periods of time

# Daily warm bathing

1. Not use bubble baths
2. Not use perfumed soaps
3. Soak in clean water (no soap)(warm water with or without baking soda) 2 to 6 times/day for 10 to 15 minutes
4. Use soap to wash regions other than the genital area just before taking the child out of the tub
5. Limit use of any soap on genital areas
6. Rinse the genital area well and gently pat dry
7. A hair dryer on the cool setting for drying the genital region
8. If the is tender or swollen vulvar area , cool compresses and emollients
9. If significant pruritus, hydroxyzine or diphenhydramine

# Toilet hygiene

- ▶ Supervision or assistance in hygiene for age < 5 years
- ▶ Sitting with knees apart
- ▶ If needed use a smaller detachable seat or sit backwards on the toilet seat (facing the toilet).
- ▶ Wiping front to back after bowel movements
- ▶ Wet wipes instead of toilet paper for wiping if needed

# Management 2

# Persistent symptoms despite 2-3 wks. of hygiene measures

- ▶ **Sending swabs for bacterial and fungal cultures**
- ▶ **Sending urine for STI NAATs (gonorrhea, chlamydia, and Trichomonas)**
  - ▶ **Single bacterial organism:** appropriate treatment
  - ▶ **Mixed flora or negative culture:** amoxicillin or amoxicillin-clavulanate 40 to 45 mg/kg/day TID for 10 days (max 500 mg/dose)
  - ▶ **Candida infection:** topical antifungal cream

# Management 3

## Management stage 3

### Chronic vaginal discharge despite previous measures

- ▶ Referral to a pediatric adolescent specialist: **Possible foreign body, benign or malignant tumor or an ectopic ureter**
- ▶ May need an office vaginoscopy or examination under anesthesia

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