Maryland 30th Annual Reproductive Health Update

Common Male Reproductive Health Concerns

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Disclosures

• I have no financial interests or other relationships with manufacturers of commercial products, suppliers of commercial services, or commercial supporters
• This presentation will not include any discussion of the unlabeled use of a product or a product under investigational use
• There was no commercial support provided for this activity
• This presentation contains photos of male genitalia

Objectives

By end of session, participants will be able to:
• State steps for conducting a complete sexual/reproductive male exam
• Describe principal normal & abnormal findings relevant to an STI
• Describe at least 1 symptom for 3 common male genital disorders
• Describe strategy to discuss at least 2 common male reproductive health questions
Why perform an SRH exam?

Identify, address &/or reassure

- **Genitals:** Normal/abnormal findings
  - Document testosterone effect for Sexual Maturity Rating (SMR) & document SMR for hair & genitals
- **Breast:** Gynecomastia
- **Skin:** Acne, jock itch
- **Hair:** Folliculitis
- **Bone health**
- **Heart (BP), Height/Weight (BMI)**

Screen for STIs

- **All potential sites:** Mouth, genitals, anus

Opportunity to educate

- **Conditions:** Hygiene, STIs, pregnancy, etc.

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Normal tasks of adolescence

- **Physical growth**
  - Including maturation of reproductive system
- **Identity & moral system formation**
  - Including sexual identity formation
- **Changing relationships**
  - Develop attractions, intimate relationships with members of same/opposite gender
  - Separate/gain autonomy/independence from family
  - Prepare for the future
  - Learn how to navigate health care system

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General principles

**Examination**

- For exam, have patient change into a gown
- Wash hands; put on gloves
  - Use standard technique to handle clean & contaminated articles & to follow universal precautions
    - 1 hand clean, 1 hand contaminated, remaining consistent throughout exam
    - 2 hands gloved, remove 1 glove before touching any other surface area
### Exam - Mouth/oral cavity

- Inspect mouth including lips, tongue, tonsils, hard & soft palate & gum lines for
  - Lesions, discoloration, mucus patches
  - Infections that can occur include
    - Chlamydia, gonorrhea, syphilis, HSV, thrush

### Exam - Lymph nodes

- Palpate nodes
  - Sublingual
  - Cervical
  - Epitrochlear
  - Axillary
  - Inguinal

### Exam - Skin

- Inspect
  - Face, trunk & legs
  - Hands, palms & forearms
  - Soles of feet if syphilis is suspected
- Look for lesions, rashes, discoloration
Genital exam: Principles

Example explanation for importance of genital exam

“For the next part of the exam I need to check your genital area. We do this to screen for any problems like lumps, bumps & any signs of an infection, such as warts, sores & discharge that may not be normal.”

Pointers for provider
• Ask patient to stand for the exam
• Use a stool to sit comfortably
• Use a source light

Genital exam: Principles cont.

Briefly review with patient what to expect during exam
• Touch a “non-genital” area of body first
• Comment as exam progresses
• Make eye contact
• Talk to patient during exam; let them findings are normal
• Watch for signs of fainting
• Avoid lengthy discussions with patient in compromising position
• Remove exam light off genital area as soon as possible
• Examine painful areas last
Exam - Genitals

Palpate
• Inguinal lymph nodes for
  – Fluctuance, swelling or tenderness

Inspect
• Pubic hair for
  – Crabs, lice or nits
  – Sexual Maturity Rating to confirm adult hair stage (also called Tanner Stage)
• Skin around genital area for
  – Lesions, warts, skin conditions

Exam - Genitals cont.

Palpate
• Scrotal contents
  – Gently compress testes & epididymis between thumb & 1st 2 fingers
    ▪ Note tenderness, shape, mass, swelling, nodule
  – Size testicle for adult Sexual Maturity Rating (e.g., Tanner Stage)
  – Identify spermatic cord with vas deferens & note for
    ▪ Tenderness, swelling, masses

Exam - Genitals cont.

Palpate cont.
• Penis
  – Inspect skin on shaft/glands for
    ▪ Ulcers, raised lesions, or signs of inflammation
  – Retract foreskin if present (Ask patient to retract)
  – Gently compress glans between thumb & index finger to open urethral meatus
    ▪ Inspect meatus for
      ▪ Stenosis, lesions, urethral opening position
  – (?) Perform hernia examination

Exam - Genitals cont.
Exam - Genitals cont.

Sexual Maturity Rating (SMR)

Exam - Developmental sequence

| SMR | 1. Testes enlarge - Gonadarche 11-12yrs | 2 |
| SMR | 2. Pubic hair - Pubarche 6 mos later | 2 |
| SMR | 3. Phallis enlarge 11-14yrs | 3 |
| SMR | 4. Spermarche 1-1.5 yrs later | 3 |
| SMR | 5. Voice change - | 3-4 |
| SMR | 6. Growth spurt 2-2.5 yrs later | 3-4 |

Duration: 4.5 yrs
Work-up: Precocious: Genital changes before 9.5 yrs
         Delayed: No change in Genitals by 13.7 yrs
         No change in Hair by 15.1 yrs
         More than 4-5 yrs lapse after TS2

Orchidometer
Anal inspection
• Lay on table on side (Recommended exam position)
  – Examine perianal areas & intergluteal cleft for
    • lesions, rashes, discharge, warts & fissures
  – Inspect anus for ulcers, discharge, lesions

Exam - Chaperone
• Provider should be “sensitive to patient’s feelings about an examination”
• “[Provider] judgment & discretion must be paramount in evaluating need for a chaperone”

American Academy of Pediatrics

Common genital symptoms & physical exam findings

Normal or abnormal?
<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balanitis</td>
<td>Images of inflamed penile skin.</td>
</tr>
<tr>
<td>Smegma</td>
<td>Image of foreskin with smegma.</td>
</tr>
<tr>
<td>Molluscum contagiosum</td>
<td>Images of small, raised, hard bumps.</td>
</tr>
</tbody>
</table>

Source: CDC, Division of STD Prevention
Pearly penile papules

Sebaceous cysts

Summary: Rash - Flat lesions

<table>
<thead>
<tr>
<th>Flat Lesions</th>
<th>Description</th>
<th>Diagnostic Approach</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tinea</td>
<td>Sharp border</td>
<td>Scrape, KOH</td>
<td>Imidazole, Lamisil</td>
</tr>
<tr>
<td></td>
<td>Central clearing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Candida</td>
<td>Satellite pustules</td>
<td>Scrape, KOH</td>
<td>Imidazole, Nystatin +HC</td>
</tr>
<tr>
<td>Contact dermatitis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psoriasis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seborrhea</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitiligo</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Summary: Rash - Raised lesions

<table>
<thead>
<tr>
<th>Raised Lesions</th>
<th>Description</th>
<th>Diagnostic Approach</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molluscum</td>
<td>Small umbilicated papules</td>
<td>--</td>
<td>Freeze, or leave alone</td>
</tr>
<tr>
<td>Warts</td>
<td>Exophytic, flesh colored</td>
<td>--</td>
<td>Freeze &amp; return, podophyllin, TCA, polioflox, imiquimod, sinecatechins 15% ointment</td>
</tr>
<tr>
<td>Pearly penile papules</td>
<td>Ectopic sebaceous glands</td>
<td>--</td>
<td>Normal, no therapy</td>
</tr>
</tbody>
</table>

### Primary syphilis - Chancre

[Image of chancre]

### Herpes simplex virus

[Image of herpes lesions]
Ulcers

<table>
<thead>
<tr>
<th>Ulcers</th>
<th>Syphilis</th>
<th>Herpes</th>
<th>Chancroid</th>
<th>Lymphogranuloma Venereum</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Incubation</strong></td>
<td>10-90d</td>
<td>4-14d</td>
<td>1-14d</td>
<td>1-14d</td>
</tr>
<tr>
<td><strong>Lesions</strong></td>
<td>Deep, single, inflamed</td>
<td>Shallow, multiple</td>
<td>Single or multiple</td>
<td>Ulcer</td>
</tr>
<tr>
<td>Start as papule</td>
<td>Start as vesicles</td>
<td>Start as papules, ulcerates in 24h</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lymph node/systemic sx</strong></td>
<td>Non-tender</td>
<td>Tender, bilateral</td>
<td>Tender, unilaterally suppurative</td>
<td>Tender, bilateral</td>
</tr>
<tr>
<td>Not common with 1st</td>
<td>Tender, ulnar, constitutional sx</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Diagnosis</strong></td>
<td>VDRL or RPR</td>
<td>HSV Cx – gold std</td>
<td>H. Ducreyi Cx</td>
<td>Chlamydia</td>
</tr>
<tr>
<td>1. Microscopy:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Darkfield examination (Direct)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. DFA-TP:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct fluorescent antibody (Direct)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Rapid test</td>
<td>Syphilis Health Check™ just approved</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Culture:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not available</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Serology:</td>
<td>Screening tests:</td>
<td>Confirmatory tests:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RPR/VRL</td>
<td>FTA-Ab/ TP-PA</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

Ulcerative skin lesions differential

- Syphilis (*Treponema pallidum*)
- Herpes Simplex Virus (HSV 1, 2)
- Chancroid (*Hemophilus ducreyi*)
- Lymphogranuloma Venereum (Chlamydia)
- Granuloma Inguinale (Donovanosis)
- Trauma
- Scabies
- Fixed drug eruption
- System condition (Crohn’s disease)

Ulcers - Diagnosis

**Herpes simplex**
- Culture (polyster flocked swab in viral media)
- PCR test (Polymerase Chain Reaction)
- Serology type-specific glycoprotein G (gG)-based assays

**Syphilis**
1. Microscopy: Darkfield examination (Direct)
2. DFA-TP: Direct fluorescent antibody (Direct)
3. Rapid test Syphilis Health Check™ just approved
4. Culture: Not available
5. Serology: Screening tests: RPR/VRL
   Confirmatory tests: FTA-Ab/ TP-PA
- Screening tests measure IgM & IgG against cardiolipin-lecithin cholesterol
  - VDRL may not be positive until 4 weeks
- Confirmatory tests measure antibodies against *T. pallidum* by immuno-fluorescence or hemagglutination
  - FTA may be positive at 2 weeks, but it is not a screening test
**Scabies**

- Lesions in fingerwebs & genitalia, None above neck
- Severe pruritis
- Tx: **Elemite (Permethrin) Crm 5%**, neck down 8-12hrs (repeat 1wk later)
  - Ivermectin 200 ug/kg oral, repeat in 2 weeks
  - Lindane 1% (or 30 g cream) neck down wash off after 8hrs

**Pediculosis Pubis**

- Tx: Shave hair
  - **Elemite (Permethrin) Crm 1%**, wash in 10 min
  - Ivermectin 250 ug/kg oral, repeat in 2 weeks
  - Pyrethrins with piperonyl butoxide, Malathion 0.5% applied 8-12hrs & wash off

**Body Lice**

- Tx: Need to clean or get rid of clothes

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**Rashes - Helpful hints**

- **Scabies**
  - Lesions in fingerwebs & genitalia, None above neck
  - Severe pruritis
  - Tx: **Elemite (Permethrin) Crm 5%**, neck down 8-12hrs (repeat 1wk later)
    - Ivermectin 200 ug/kg oral, repeat in 2 weeks
    - Lindane 1% (or 30 g cream) neck down wash off after 8hrs

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  - Tx: Shave hair
    - **Elemite (Permethrin) Crm 1%**, wash in 10 min
    - Ivermectin 250 ug/kg oral, repeat in 2 weeks
    - Pyrethrins with piperonyl butoxide, Malathion 0.5% applied 8-12hrs & wash off

**Phimosis**

- Need to clean or get rid of clothes
Phimosis

<table>
<thead>
<tr>
<th>Definition</th>
<th>Inability to retract foreskin due to narrow preputial ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Etiology</td>
<td>Primary (rare)</td>
</tr>
<tr>
<td></td>
<td>Secondary (due to recurrent infection &amp; scarring with</td>
</tr>
<tr>
<td></td>
<td>rigid, fibrous foreskin &amp; xerotic obliteration)</td>
</tr>
<tr>
<td>Symptoms</td>
<td>Difficult voiding</td>
</tr>
<tr>
<td></td>
<td>Ballooning of the prepuce</td>
</tr>
<tr>
<td>Treatment</td>
<td>If infected → Amox or Bactrim</td>
</tr>
<tr>
<td></td>
<td>Chronic → Circumcision may not relieve sx</td>
</tr>
<tr>
<td></td>
<td>Inflam → Topical betamethasone 0.05% crm 4-6wks</td>
</tr>
<tr>
<td></td>
<td>→ Check for urethral meatal stenosis</td>
</tr>
</tbody>
</table>

Paraphimosis

<table>
<thead>
<tr>
<th>Definition</th>
<th>Inability to pull forward the retracted foreskin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Etiology</td>
<td>Iatrogenic (instrumentation); erection</td>
</tr>
<tr>
<td>Symptoms</td>
<td>Acute pain</td>
</tr>
<tr>
<td></td>
<td>Glans enlarged &amp; congested</td>
</tr>
<tr>
<td>Treatment</td>
<td>Urologic Emergency</td>
</tr>
<tr>
<td></td>
<td>Manual reduction with anesthesia</td>
</tr>
<tr>
<td></td>
<td>If recurrent → circumcision</td>
</tr>
<tr>
<td>Consequences</td>
<td>Ischemia</td>
</tr>
<tr>
<td></td>
<td>Penile gangrene</td>
</tr>
<tr>
<td></td>
<td>Autoamputation</td>
</tr>
</tbody>
</table>
## Hypospadias

![Image of hypospadias](image1.png)

### Hypospadias - Congenital

<table>
<thead>
<tr>
<th>Incidence</th>
<th>1/150 births</th>
</tr>
</thead>
<tbody>
<tr>
<td>Familial predisposition</td>
<td>8% if father; 14% risk if sibling has it</td>
</tr>
<tr>
<td>Meatus displaced</td>
<td>onto ventral surface of glans or onto shaft or perineum</td>
</tr>
</tbody>
</table>

### Treatment

Typically corrected early in life

### Issues

- Inadequate enlargement causes urinary obstruction
- Curvature of penis due to dysgenetic fibers interfering with normal erections

### Assoc anomalies

- Diverticulum of urogenital sinus (utricle);
- Increased UTI risk;
- Cryptorchidism;
- Inguinal hernia

## Condyloma acuminata

![Image of condyloma acuminata](image2.png)
Purulent discharge

Urethritis - Clinical features

<table>
<thead>
<tr>
<th></th>
<th>GU</th>
<th>NGU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incubation period</td>
<td>2-8d</td>
<td>7-14d</td>
</tr>
<tr>
<td>Onset</td>
<td>Abrupt</td>
<td>Gradual</td>
</tr>
<tr>
<td>Dysuria</td>
<td>Severe</td>
<td>Mild</td>
</tr>
<tr>
<td>Asymptomatic</td>
<td>1-3%</td>
<td>&gt;10%</td>
</tr>
<tr>
<td>Discharge</td>
<td>Quality</td>
<td>Quantity</td>
</tr>
<tr>
<td></td>
<td>Purulent</td>
<td>More</td>
</tr>
<tr>
<td></td>
<td>Mucoid</td>
<td>Less</td>
</tr>
</tbody>
</table>

Urethritis - Diagnosis

Test for GC & CT (culture & non-culture methods):
- **Penile d/c:** use 1st void collection of urine (FCU) using nucleic acid amplification test (NAAT)
  - Non-FCU tests
- **CT:** Insert swab ≥ 2 cm (optimal results)
- **GC:** Okay to culture urethral exudate at penis tip
- **Anal/pharyngeal d/c:** use endocervical swab (NAAT test)

If NAAT not available
- For gonorrhea, collect culture/do gram stain & give presumptive treatment
- For chlamydia give presumptive treatment since EIA is not readily available
CDC treatment updates 2010
Urethritis treatment

**GU - Gonococcal Urethritis**

<table>
<thead>
<tr>
<th></th>
<th><strong>Recommended regimens:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Cephalosporins:</strong></td>
</tr>
<tr>
<td>Ceftriaxone</td>
<td>250mg IM x1</td>
</tr>
<tr>
<td>Azithromycin</td>
<td>1gm PO x 1</td>
</tr>
<tr>
<td>Doxycycline</td>
<td>100mg PO BID x7d</td>
</tr>
</tbody>
</table>

**NGU – Chlamydial Urethritis**

<table>
<thead>
<tr>
<th></th>
<th><strong>Recommended regimens:</strong></th>
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<tr>
<td></td>
<td><strong>Azithromycin</strong>: 1gm PO x 1,</td>
</tr>
<tr>
<td></td>
<td><strong>Doxycycline</strong>: 100mg PO BID x7d</td>
</tr>
</tbody>
</table>

**Alternate regimens:**

|  | **Erythromycin base**: 500mg PO QID x 7d |
|  | **Ethylsuccinate**: 800mg PO QID x 7d |
|  | **Ofloxacin**: 300mg PO BID x 7d |
|  | **Levofloxacin**: 500mg QD x 7d |

Possible etiologies
1. Reinfection
2. Non-compliance
3. Persistent infection due to:
   - Inadequate drug-tissue levels
   - Resistant pathogen (quinolone-resistant GC; tetracycline-resistant ureaplasma/mycoplasma)
   - HSV
   - Trichomonas
   - Intraurethral growth (HPV)
   - Non-infectious etiology

Urethritis - Recurrent or persistent

**Approach**
- Ask about re-exposure during or after treatment, compliance & concurrent treatment of partner(s)
- Examine
  - And establish objective evidence of urethritis
    - Urethral Gram stain, urine sediment or leukocyte esterase test
    - For Trichomonas with
      - Saline wet mount of urethral discharge or urine sediment &/or trichomonas culture
      - Trich pouch or NAAT
    - For Penile lesions (e.g., HSV)
      - Consider HSV culture
Urethritis - Recurrent or persistent

Treatment
- Compliance issues or re-exposure to untreated sex partner
  - Re-treat with initial regimen
- If none of above, consider
  - Metronidazole 2 grams PO, PLUS
  - Erythromycin base 500 mg PO QID for 7 days, OR
  - Erythromycin ethylsuccinate 800 mg PO QID for 7 days
- If symptoms persist
  - Refer to urologic specialist

Counseling/Education including explaining
- Urethritis
  - As syndrome vs. infection
  - Share etiology if known
  - Discuss routes of transmission & acquisition
- WHY patient is being treated including possible sequelae to self & partners
  - Increased HIV susceptibility, PID/infertility/ectopic pregnancy in female partners
- Need to refer/treat sex partner(s) for diagnosis & treatment

CDC treatment updates 2010

<table>
<thead>
<tr>
<th>Simple Infection</th>
<th>Complex Infection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Male:</strong></td>
<td></td>
</tr>
<tr>
<td>Urethritis</td>
<td>Epididymitis</td>
</tr>
<tr>
<td><strong>Female:</strong></td>
<td></td>
</tr>
<tr>
<td>Cervicitis</td>
<td>PID</td>
</tr>
<tr>
<td><strong>Treatment:</strong></td>
<td></td>
</tr>
<tr>
<td>Gonorrhea</td>
<td>Outpatient</td>
</tr>
<tr>
<td>Ceftriaxone 250mg IM shot plus Azithromycin 1g PO x1</td>
<td>Ceftriaxone 250mg IM shot IV Cefotetan or Clindamycin</td>
</tr>
<tr>
<td>Chlamydia</td>
<td>Outpatient</td>
</tr>
<tr>
<td>Macrolide (Azithromycin oral 1g)</td>
<td>Doxycycline 100mg oral BID*</td>
</tr>
<tr>
<td>Anaerobes</td>
<td>Inpatient</td>
</tr>
<tr>
<td>n/a</td>
<td>For PID: +/- anaerobic coverage (Metronidazole 500mg oral BID)</td>
</tr>
<tr>
<td><strong>Length:</strong></td>
<td></td>
</tr>
<tr>
<td>One-time doses</td>
<td>*10-d to 14-d therapy total</td>
</tr>
</tbody>
</table>
Role of STIs in HIV Transmission

• STIs increase HIV transmission between 2-5-fold
• Attributable risk of STIs for HIV transmission substantial in some populations (e.g. MSM)
• HIV susceptibility mechanism
  – STIs increase HIV viral load in genital secretions
  – Recruitment of endocervical CD4 cells by nonulcerative STIs, including GC
  – “Portal of entry” created by ulcers (syphilis, chancroid, herpes)

➔ Treatment of STIs significantly reduce HIV infectiousness

Case

14 year old sees you for a sports physical. You note he has bilateral breast development.

What do you think?
How do you approach his history & PE?
What if he was 17 years old?
Gynecomastia

Physiologic
- Timing: SMR 2-3
- 25% unilateral, size
- Resolves 1-2 years, common

Pathologic
- Timing: prepubertal or SMR 4-5
- Large breasts (> SMR 2-3); real fatty tissue (pseudo-)
- PE: testes, adrenal, CNS, chronic illness
- Drugs: psychiatric, H2 blockers, marijuana, heroin
- Medical: Klinefelter’s, Testicular failure, Thyroid, Tumor

Case

17 year old is in clinic for a routine physical examination. At the end of the visit he asks you I want my penis to be bigger. Are pumps safe?

Case

- Normal for a boy to wonder if he “measures up”
- Reassure wide range of normal penis sizes
  - Also depends on where he is in pubertal development
  - Less differences in penis size when erect versus flaccid
- Educate that pumps can be dangerous (destroy ligaments, blood vessels)
- No method (supplements, diets) can impact a male’s size
- Discuss other safer methods
  - Sex toys: penis rings
- Reassure & educate
Case

16 year old Zach’s chief complaint in your primary care clinic is testicular pain. He denies ever having sex. He states that he has a girlfriend and that they have been “fooling around a lot” over the past 2 days.

Testicle examination is unremarkable including no evidence of torsion, spermatocoele, varicocele, herna, or mass.

What might explain Zach’s symptoms?

Case

Congestion of Vas Deferens or “Blue Balls”

• Congestion with sperm can cause pain & discomfort if not released
• Pain will subside overtime (~24 hours) with body absorption or with voluntary release of pressure (ejaculation)
• Once other issues are ruled out
  – Reassure patient symptoms will subside
  – Discuss treatment option can include masturbation

Summary

You are now able to describe...

• Steps for conducting a complete SRH male exam
• Principal normal & abnormal findings relevant to STIs
• Symptoms for common male genital disorders
• Strategies to discuss common male SRH questions
Additional Questions?

Website: http://www.fpcmct.org
- Ask the Experts Forum
- Featured Quarterly Article
- Upcoming events & resources

Photo Acknowledgements
- Dermatology Image Atlas
- Centers for Disease Control & Prevention

Thank You

Testicular mass

Differential Diagnosis

Painful Mass
- Epididymitis
- Torsion of spermatic cord
- Torsion of appendix

Painless Mass
- Testicular cancer
- Hydrocele
- Spermatocele
- Varicocele
- Indirect hernia
# Testicular cancer

| Risk Factors                  | Caucasian; Age 15 to 35y/o  
|                              | Undescended testicle  
|                              | Testicular atrophy  
|                              | HIV; Klinefelter's syndrome  
|                              | Testicular trauma  
|                              | FHx testicular cancer  
|                              | ? Mumps orchitis  
|                              | ? Childhood inguinal hernia  

| General Symptoms              | Painless hard smooth mass (unilat)  
|                              | Ache or heaviness in scrotum (40%)  
|                              | Secondary hydrocele  
|                              | Acute scrotum (hemorrhage)  
|                              | Back/bone pain 2° to metastasis  

# Testicular cancer

| Exam                        | Firm, irregular mass  
|                            | Transillumination negative  
|                            | Hydrocele or varicocele may be present  

| Diagnosis                   | Verify mass by scan, ultrasound  
|                            | Refer to urology  
|                            | Assist urology with metastatic work-up  
|                            | 96% germinal type & malignant  

| Prognosis                   | Untreated --> malignant & fatal  
|                            | Seminoma treated --> 90% 5 yr cure rate  
|                            | Sperm banking before surgery & radiation  

# Cryptorchidism - congenital

| Undescended testicle        | Usually lies in line of testicular descent  
|                            | Intra-abdominal, in inguinal canal, or distal to external ring  
|                            | or Ectopic  
| Assoc risks                 | Malignancy, infertility, torsion  
| Treatment                   | Orchiopexy - brought down & fixed surgically  
| Prevention                  | TSE (no evidence if TSE identifies earlier cancer)  
| Assoc disorders             | Klinefelter, Prader-Willi (chromosomal); Kallman synd, hypopituitarism (CNS); Adrenal or testicular nz def; Prune-belly synd, meningomyelocele (anatomic)  

| Location                    |  
| Assoc risks                 |  
| Treatment                   |  
| Prevention                  |  
| Assoc disorders             |  


## Hydrocele

<table>
<thead>
<tr>
<th><strong>Background</strong></th>
<th>Fluid in tunica vaginalis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Communicating &amp; non-communicating types</td>
</tr>
<tr>
<td><strong>Etiology</strong></td>
<td>Idiopathic, infection, torsion, tumor, lymph block</td>
</tr>
<tr>
<td><strong>Symptoms</strong></td>
<td>Painless enlargement, fluid-filled mass</td>
</tr>
<tr>
<td><strong>Diagnosis</strong></td>
<td>Transilluminates</td>
</tr>
<tr>
<td><strong>R/O</strong></td>
<td>Testicular torsion &amp; inguinal hernia</td>
</tr>
<tr>
<td><strong>Treatment</strong></td>
<td>Only if painful</td>
</tr>
</tbody>
</table>

## Spermatocele

| **Background**     | Cyst nodule in tunica vaginalis |
|--------------------| May be bilateral & multiple |
| **Etiology**       | Congenital weakness of ecurrent walls, epididymitis, epididyl obstruction, scrotal trauma |
| **Exam**           | Nodule above & posterior to testes |
| **Diagnosis**      | Transilluminates |
| **R/O**            | Testicular torsion & inguinal hernia |
| **Treatment**      | Only if painful |

## Varicocele

| **Background**     | |
|--------------------| |
| **Etiology**       | |
| **Symptoms**       | |
| **Diagnosis**      | |
| **R/O**            | |
| **Treatment**      | |
Varicocele

| Background | Abnormal dilation of pampiniform plexus |
|           | Idiopathic or 2nd vena caval obstruction |
|           | 78% L, 1-2% R-sided, up to 20% bilateral |
|           | Drainage pattern L & R internal spermatic vein |
|           | Unilateral R-side (rare) → Intrarenal mass? |

| Types | Grade I: palpable only during valsala |
|       | Grade II: palpable, not visible at rest |
|       | Grade III: palpable & visible at rest |

| Exam | “Bag of worms” appearance |
|      | Diagnosis | No transillumination |
| R/O  | Testicular torsion & inguinal hernia |
| Treatment | Only if painful or halts normal growth |

Epididymitis

| Epidemiology | Accounts for over 600,000 visits to physicians per year |

| Complications | Abscess formation |
|               | Testicular infarction |
|               | Chronic epididymitis |
|               | Infertility |

| History | Acute swelling, localized to epididymis & testis, +/- fever, dysuria |
| Exam    | Firm, tender & swollen testis & epididymis |
| Lab     | Pyuria, ↑ed blood flow on U/S doppler scan |
|         | Send 1st void urine for CT/GC PCR |
Epididymitis - Treatment

Outpatient Therapy
Ceftriaxone 250mg IM x1
Plus
Doxycycline 100mg BID x10d

For enteric organisms, or pts with allergies
Ofloxacin 300mg BID x10d
OR
Levofloxacin 500mg QD x10d

Testicular (Spermatic cord) torsion

Bell-clapper deformity in tunica vaginalis allowing for torsion of spermatic vessels

Testicular torsion (Spermatic cord)

- 1st cause of acute scrotum = Urologic emergency
- Incidence: 1 in 4000 males <25 y/o
- Most cases (65%) present during puberty; Peak age = 13
- Due to suspension anomaly (bell-clapper deformity)

History
Acute, severe onset with testicle swelling

Exam
Testes may be high-riding, swollen, & very tender

Lab
↓ed blood flow on ultrasound doppler scan

Treatment
Urologic consult & emergent surgery

Prognosis
100% testes released @ 3hrs will be preserved
(75% @ 8hrs; 10-20% @ 24hrs)
Torsion of appendix testes

- Due to torsion of a vestigial structure

**History**
- Pain is usually gradual & intermittent & localized to appendix testes, with minimal inflammation

**Exam**
- Normal or may see small firm pea-sized mass at upper pole, distinct from epididymis
- “Blue-dot sign”

**Treatment**
- Most resolve in 2-12 days
- Excise if persistent

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Painful masses - Overview

**Localized pain**
- Upper pole: Testicular appendiceal torsion
- Epididymis: Epididymitis

**Generalized pain (not localized)**
- Parotitis present: Mumps orchitis
- No parotitis: Isotope scan/ doppler scrotum

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Painless masses - Exam

<table>
<thead>
<tr>
<th>Firm Mass</th>
<th>Mass not firm &amp; transilluminates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neoplasm</td>
<td>Hydrocele or Spermatocoele</td>
</tr>
<tr>
<td><strong>Urologic referral</strong></td>
<td></td>
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<tr>
<td>-----------------------</td>
<td></td>
</tr>
<tr>
<td>• Firm, irregular mass</td>
<td></td>
</tr>
<tr>
<td>• Large hydrocele &amp; small testicle</td>
<td></td>
</tr>
<tr>
<td>• Varicocele that halts testicle growth at puberty</td>
<td></td>
</tr>
<tr>
<td>• Concern of incarcerated inguinal hernia</td>
<td></td>
</tr>
<tr>
<td>• If difficulty with fertility</td>
<td></td>
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</tbody>
</table>