Sexually Transmitted Diseases

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Milot, Haiti

Outline of Lecture

- Urethritis
- Bacterial Vaginosis
- Approach to Genital Ulcer Disease
  - HSV
  - Syphilis
- HPV
- Viral Hepatitis
- STDs in Pregnancy
- STDs in HIV
- Screening (guidelines)

Urethritis

Major Causes of Urethritis

- N. gonorrhea
- C. trachomatis
- Mycoplasma genitalium
- Ureaplasma urealyticum
- HSV
- Trichomonas

Gonorrhea & Chlamydia

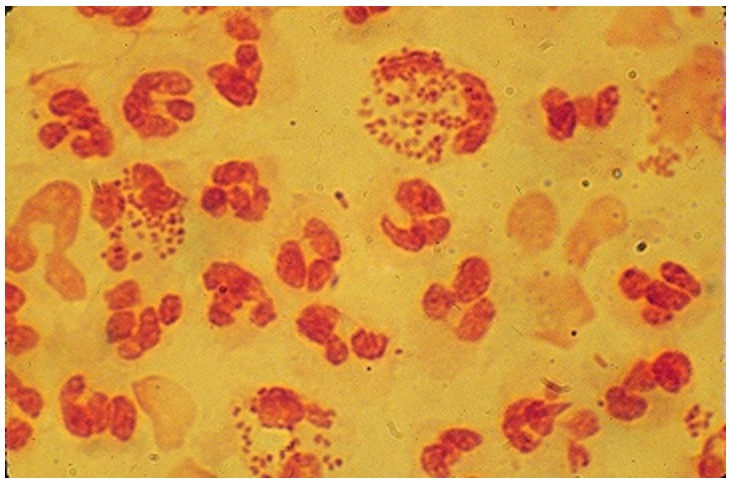
- Transmission (GC) - 70% per sexual contact (M to F)

- Severity of symptoms variable: discharge, dysuria, abdominal pain, cervical motion/adnexal tenderness, intermenstrual bleeding

- Spread of infection
  - Men: urethritis, epididiymo-orchitis, prostatitis
  - Women: cervicitis, salpingitis, endometritis, peritonitis, perihepatitis, tubo-ovarian abscess
  - Both: proctitis, pharyngitis, ocular infection, dissemination (rare)

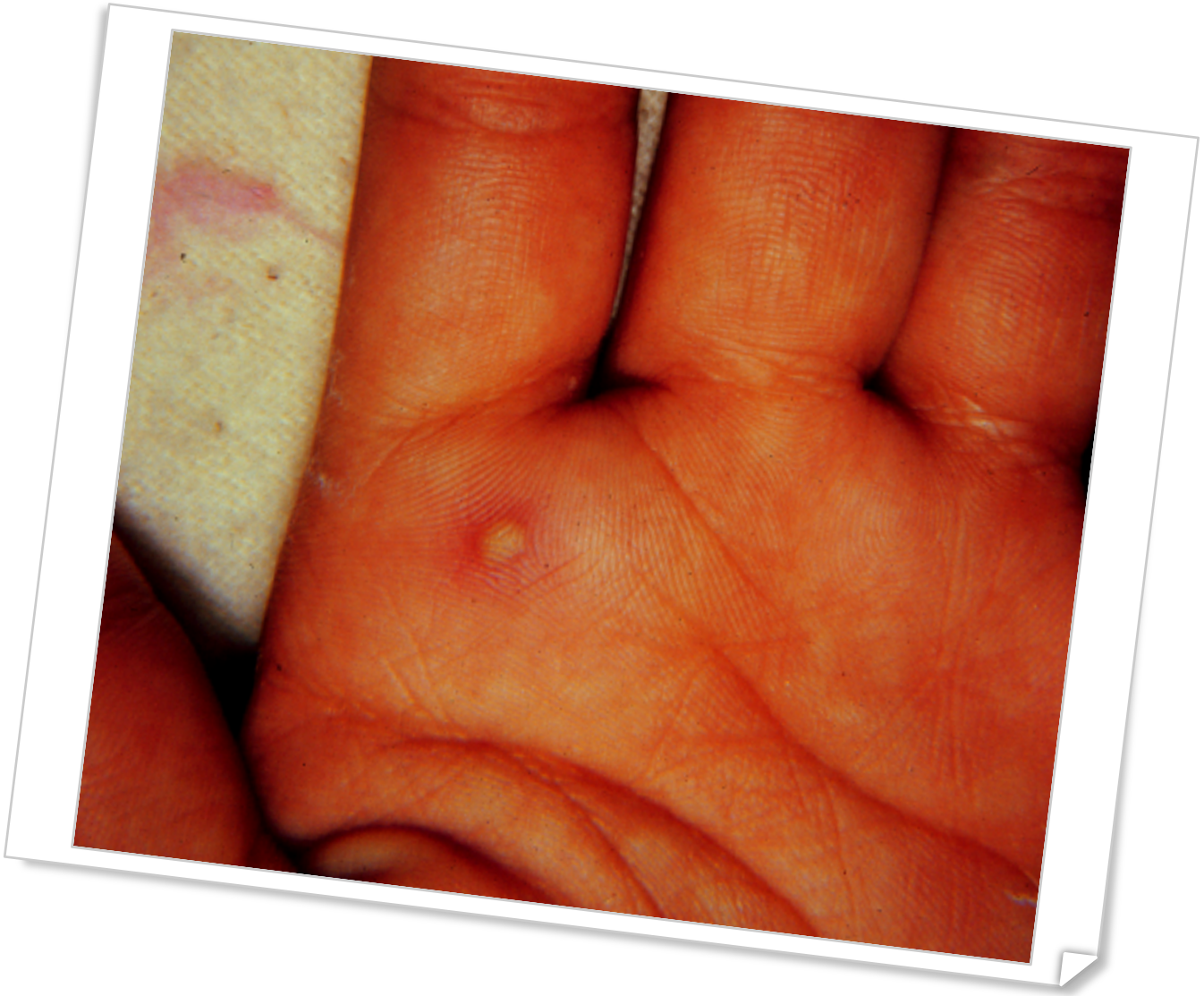
Gonorrhea & Chlamydia, cont…

- GC: Men usually symptomatic; 40% of women are minimally symptomatic or asymptomatic
- Chlamydia: Asymptomatic infection common in men and women
- Chlamydia and gonorrhea are transmitted together frequently – up to 40% in some studies



Gram stain of gonococcal urethritis

Skin lesion in disseminated gonococcal infection



Complications of Gonorrhea &Chlamydia

- DGI
  - fever, septic arthritis (knee), dermatitis, tenosynovitis (wrist, Achilles)
  - rarely have associated urethritis
  - rare meningitis, endocarditis
- Chlamydia
  - reactive arthritis
  - uveitis
  - dermatitis
- Gonorrhea and Chlamydia
  - PID
  - ectopic pregnancy
  - infertility

Case I

40M presents with urethral discharge. Gram stain consistent with N. gonorrhea.

Q: How should he be treated?

Treatment of Urethritis

A: Always treat both gonorrhea and chlamydia!

Ceftriaxone single dose injection

PLUS

Doxycycline 100 mg orally twice a day for 7 days

Bacterial Vaginosis

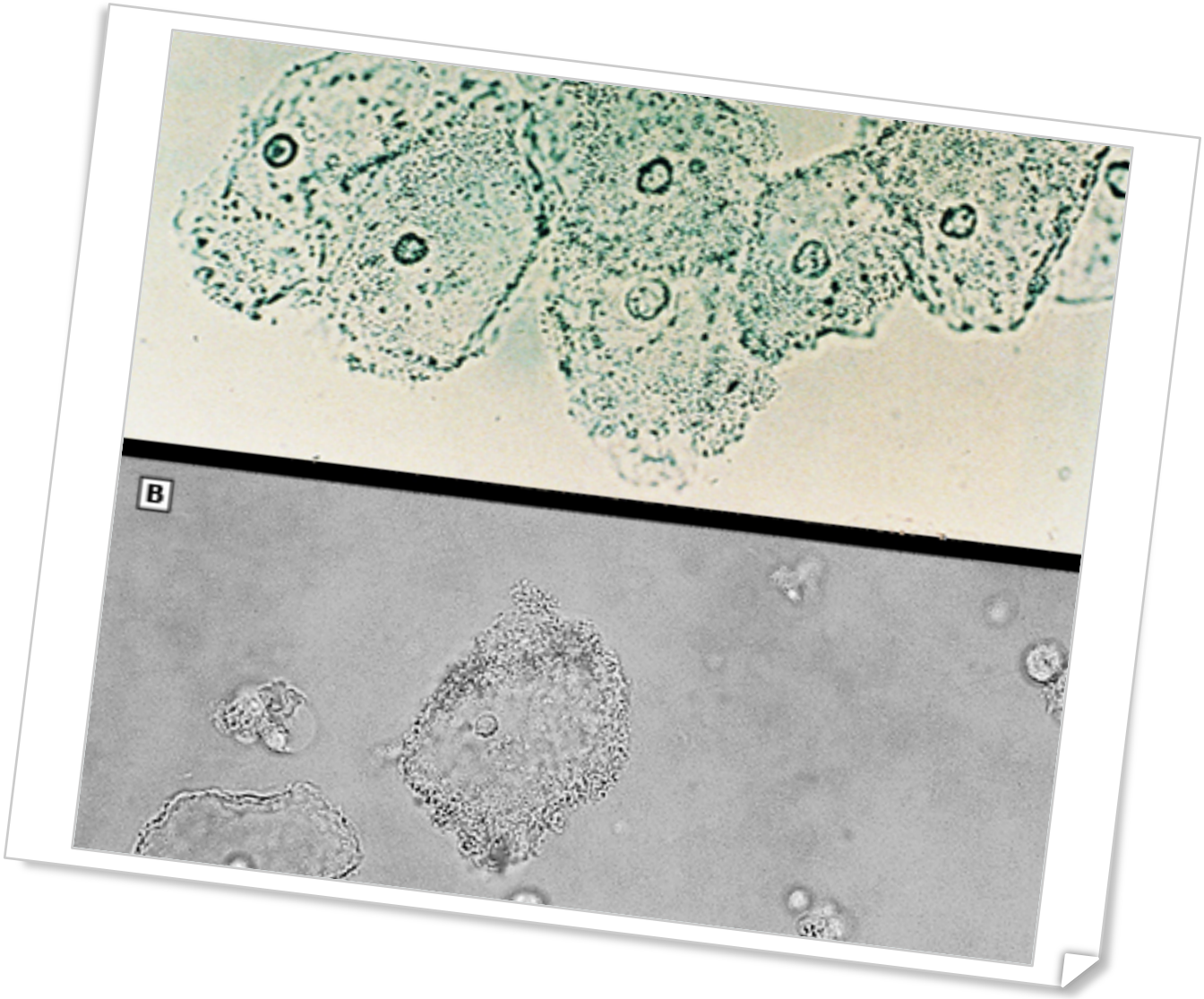
- Normal vaginal flora predominately lactobacillus (95%)
- Overgrowth of other organisms causes malodorous/ abnormal vaginal discharge, pruritis
- Associated with increased number of sexual partners, but may occur in absence of sexual activity

- Dx: Amsel's Criteria (3/4)
  - pH > 4.5
  - homogeneous, white discharge
  - whiff test
  - clue cells on wet mount (bacteria bound to squames)

- Rx: Metronidazole 500mg po twice daily x 7 days

Clue cells

Bacteria bound to squamous epithelial cells.



Trichomonas vaginalis

- Sexually transmitted cause of BV by protozoa
- Highly transmissible - 85% male to female per sexual act
- Men usually asymptomatic; women 20-50% symptomatic
- Infection associated with increased HIV acquisition and transmission
- Rx: metronidazole 2g po x 1
  or 500mg po twice daily x 7 days

Case 2

32F presents with vaginal discharge. Wet mount demonstrates the following organisms.

Picture of protozoa (must be motile)

Q: Should her partner be treated?

Answer to Case 2

A: Yes. Treat partners for trichomonas but not for BV unless symptoms (yeast balanitis) or recurrences.

Case 3

26M presents with genital ulcers.

Q: Besides taking a thorough history and performing a physical exam, what other steps should you take?

Answer to Case 3

A: Always test for HIV - GUD is a risk factor for HIV transmission.

Always test for syphilis.
Always screen for other STDs.
Evaluate and treat sexual contacts as indicated.

Approach to Genital Ulcer Disease

- Causes of Genital Ulcers
  - Herpes simplex virus
  - Treponema pallidum (syphilis)
  - Haemophilius ducreyi (chancroid)
  - Chlamydia trachomatic serovars L1-L3 (LGV)
  - Klebsiella granulomatis (granuloma inguinale)
  - HIV; 25% - no etiology identified
- Symptoms
  - painful - HSV, chancroid; painless - syphilis, LGV, granuloma inguinal; however, HSV may be painless/ pruritic; syphilis may be painful due to secondary infection
  - recurrence - suggest HSV
  - dysuria - location of ulcer, urethritis/urinary tract infection
  - constitutional - HSV, syphilis (secondary), LGV

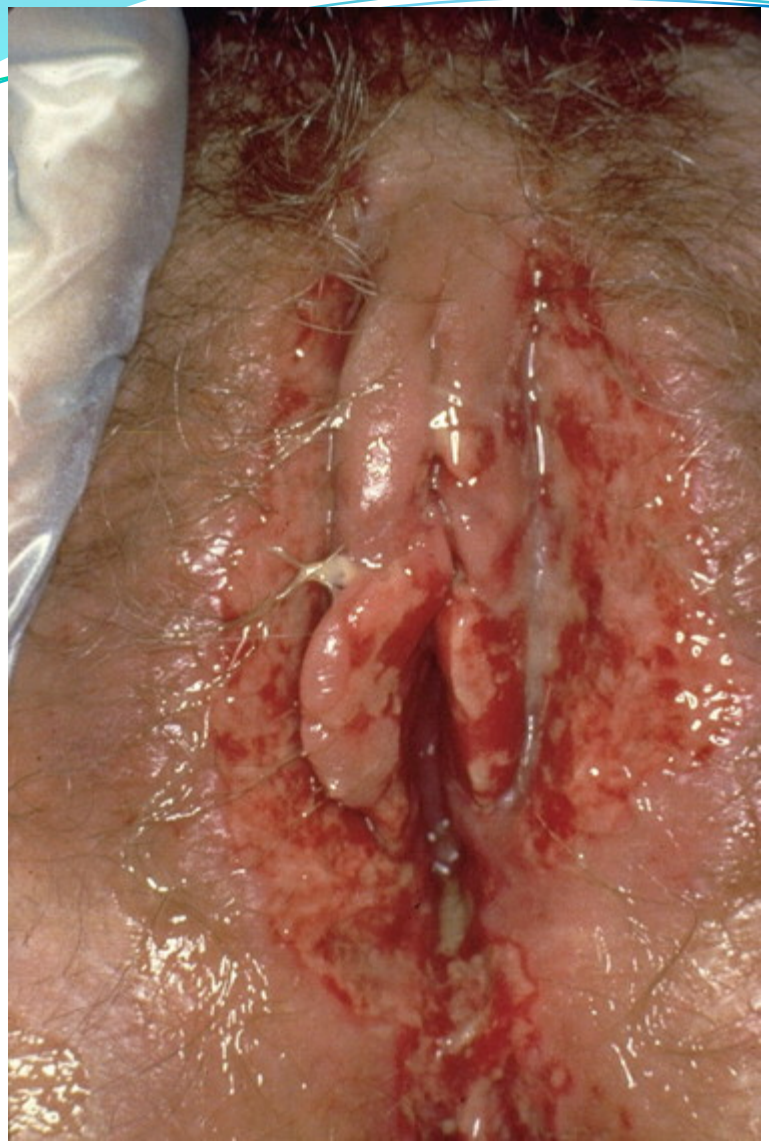
Syndrome	Agent	Classic Characteristics	Incubation	Pain	Adenopathy
HSV	HSV 2 HSV 1	Multiple small ulcers; red base; fissures /erosions	2-7 days	Usually painful; can be painless or pruritic	Reactive painful nodes common
Syphilis	T. pallidum	Singular, clean base; firm , smooth, indurated borders	7-90 days	Usually painless	Firm, rubbery, non-tender, regional , discrete nodes
Chancroid	H. ducreyi	Circumscribed or irregular, undermined edge; gray/yellow base	3-10 days	Marked	50% inguinal, unilateral, may ulcerate
LGV	C. trachomatis L1-L3	Small, shallow, fleeting	3-10 days	Usually painless	Large, painful, fluctuant; maybe matted or bilateral
Granuloma inguinale	K. granulomatis	Extensive, progressive; rolled edges,	7-90 days	Usually painless	Pseudobuboes

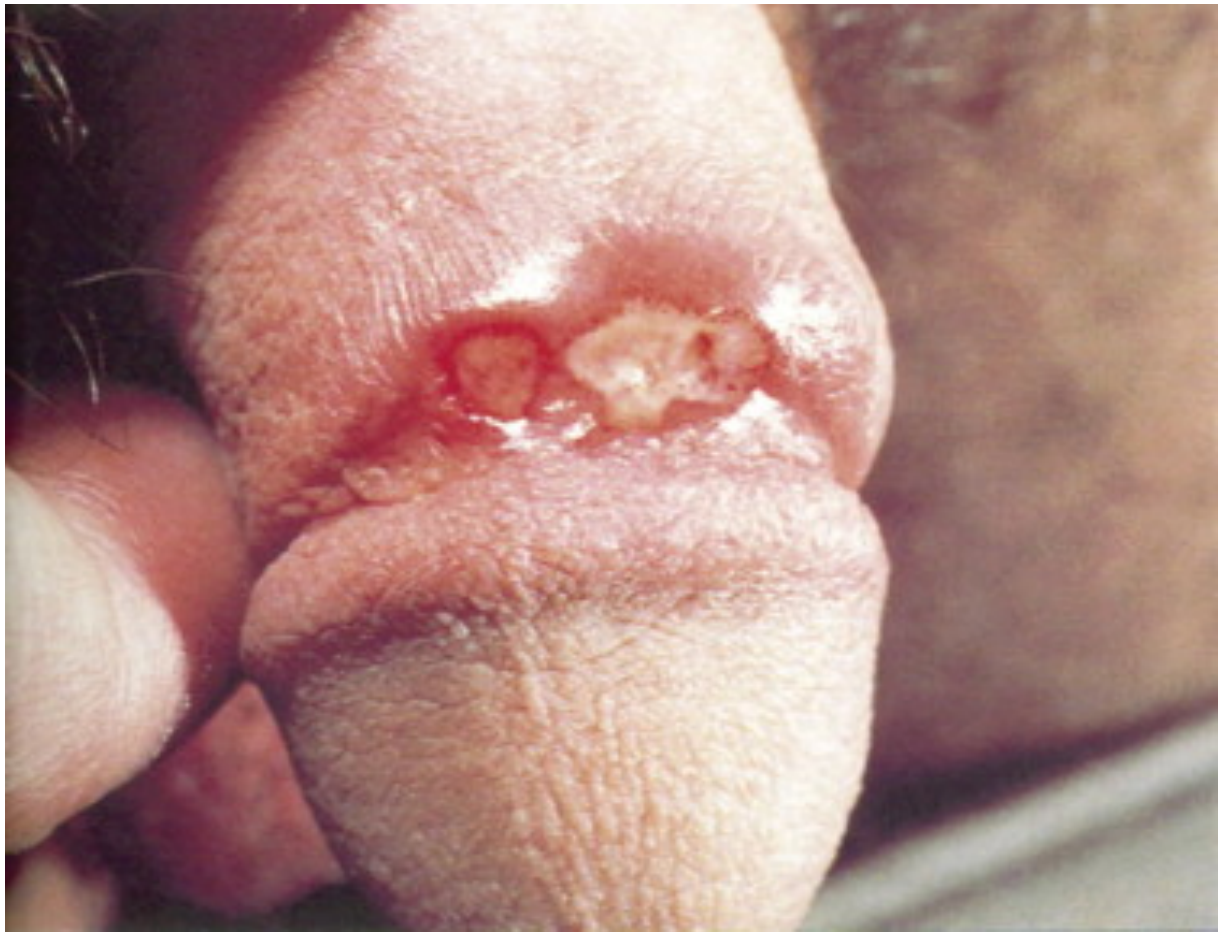
GUD, continued

- Single ulcer - syphilis; multiple ulcers- HSV, chancroid; however, HSV may be single and syphilis multiple

- Lymph nodes with most ulcers:
  - tender - HSV, chancroid, LGV
  - rubbery, non-tender - syphilis
  - matting/suppuration of nodes, or painful buboe - LGV or chancroid
  - nodular inguinal lesions - granuloma inguinale

- May have multiple infections at same time
- Without diagnostic tests, empiric treatment must be based on most likely diagnosis; this is complicated by HIV disease
- Follow up is necessary, if possible, to ensure resolution

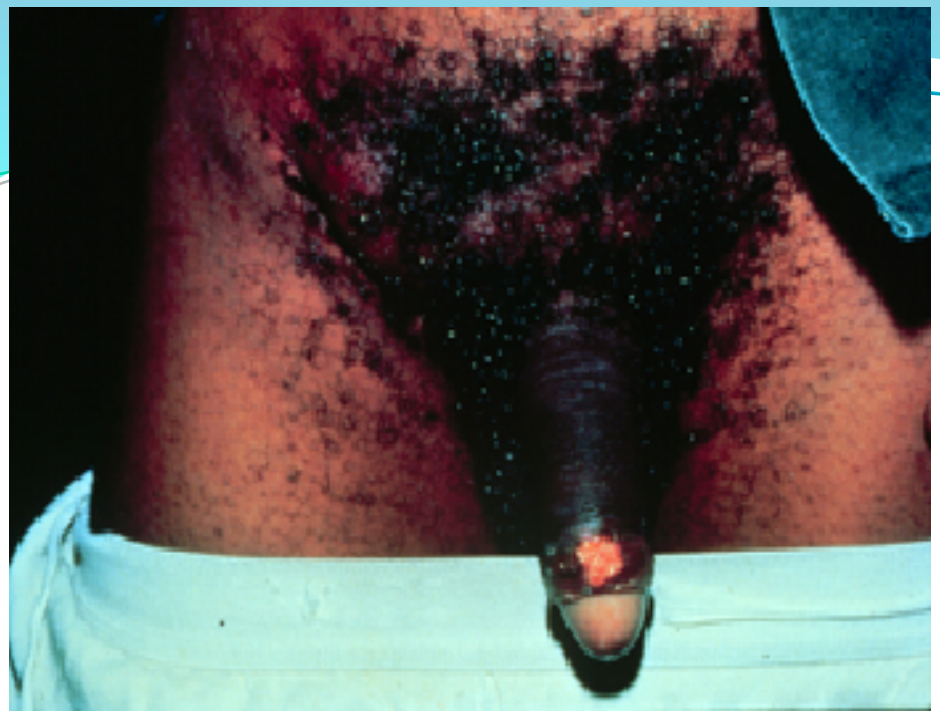


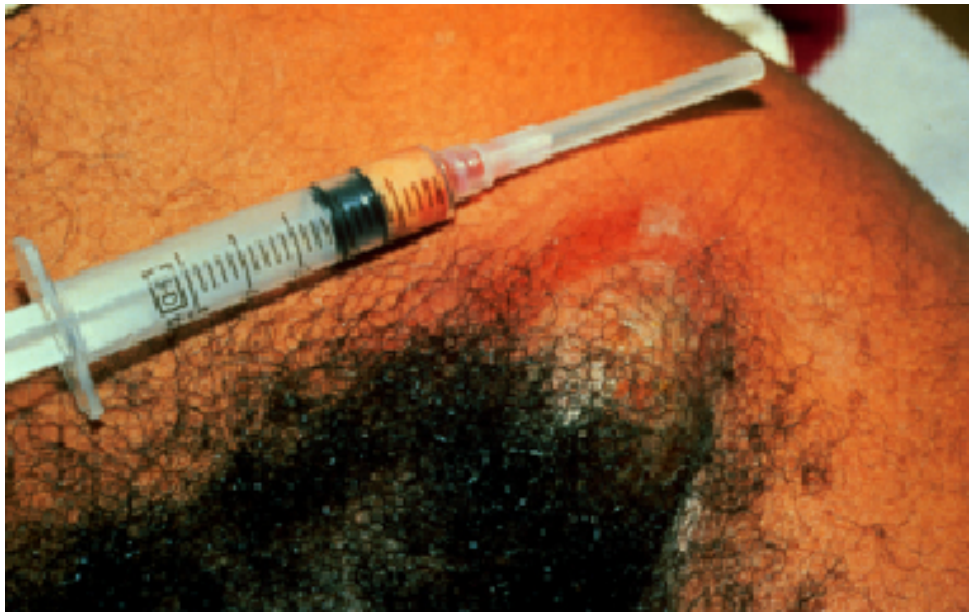


HSV - vesicles on erythematous base. Open to form shallow ulcerations.

Herpes simplex virus

- HSV2 > HSV1 (5-30%)
- 60% of HSV 2 asymptomatic; asymptomatic viral shedding occurs
- systemic symptoms, local pain, pruritis, dysuria, discharge, inguinal lymphadenopathy
- complications: aseptic meningitis, extragenital lesions, cutaneous or visceral dissemination
- recurrences are milder and duration shorter than with primary infection
- Proctitis can occur





Chancroid - papules that ulcerate. Ulcers are deep with purulent, yellow-gray base, violaceous and ragged borders.

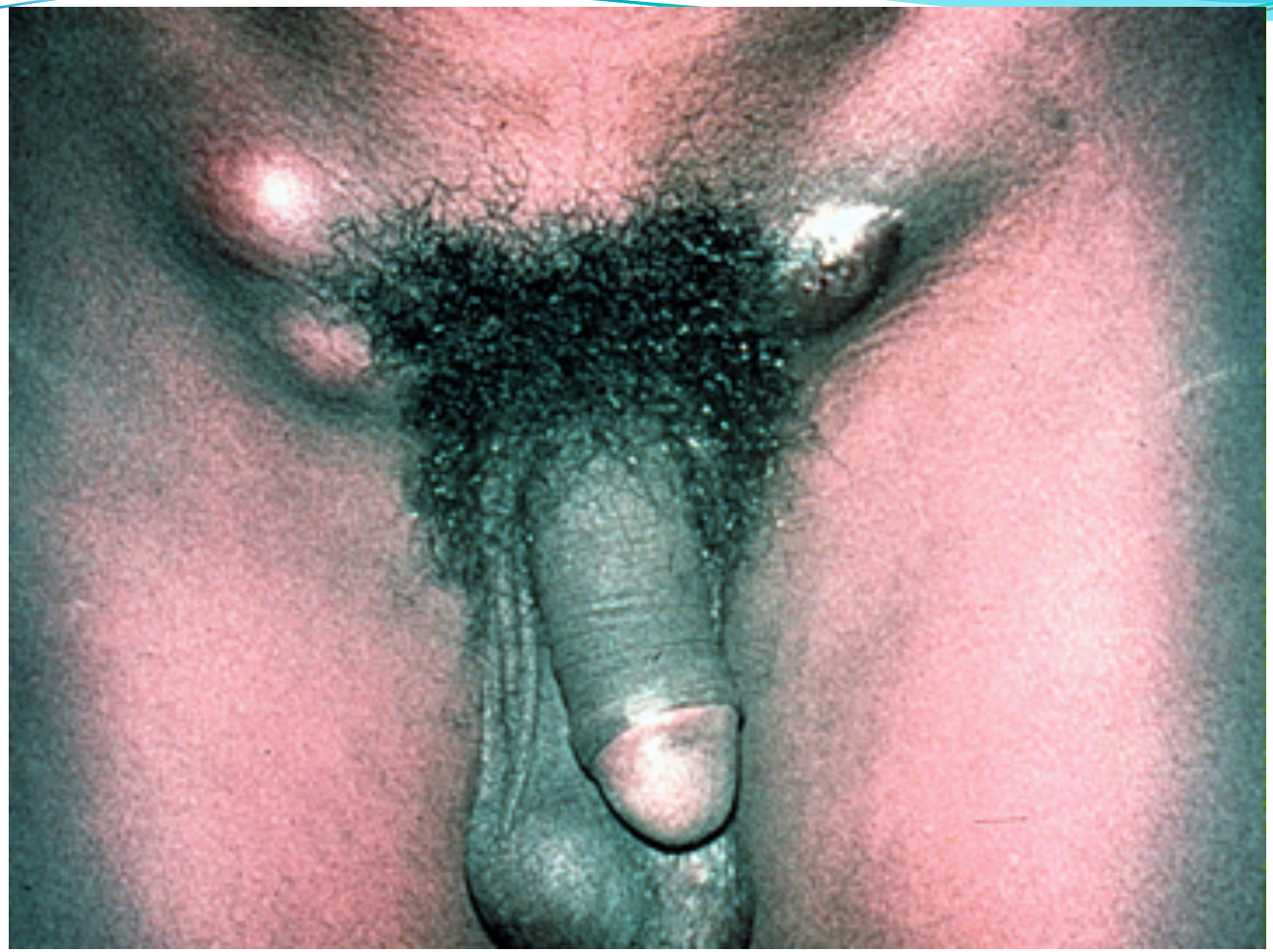
Chancroid -H. ducreyi

gram negative rod
incubation 4-10d
highly infectious
25% develop buboes-drain so don't form fistulae

Presumptive diagnosis:

- One or more painful ulcers + regional lymphadenopathy
- Present for more than 7 days
- Tests for syphilis and viral cultures negative

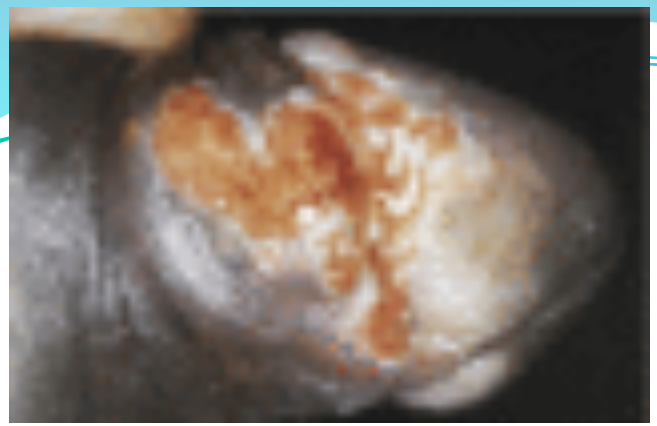
Rx:azithromycin 1g po x1 or ceftriaxone 250mg IM x 1; treat for syphilis if won't come back?
Treat sexual contacts within 10 days of symptoms onset

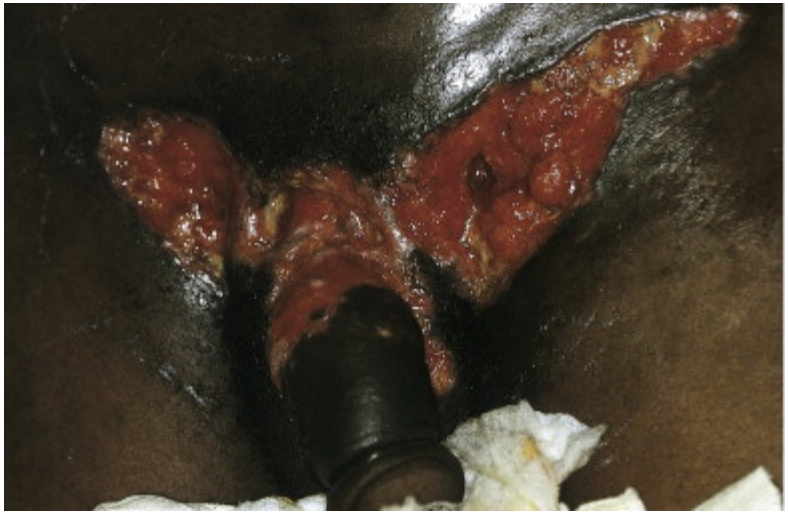


LGV - papule or shallow ulcer. May develop ulcerative lymphadenopathy.

Lymphogranuloma venereum (LGV)

- C. trachomatis serovars L1, L2, L3
- Three syndromes:
  - 1. Inguinal buboes
  - 2. Proctocolitis
  - 3. Pharyngeal (rare)
- Incubation 3-30 days
- Primary stage: painless genital papule/ulcer, resolves
- Secondary stage: 10-30 days later, tender local lymph nodes, rectal symptoms, or inflammation along lymphatics (women may have abdominal mass); fever, malaise, decreased appetite
- Treatment: Doxycycline 100mg po twice daily x 14-21 days or erythromycin base 500mg po 4x daily x 14-21 days
- Treat partners within 60 days of symptoms





Granuloma inguinale - one or more nodules that ulcerate. Enlarging, friable ulcers with raised, rolled margins.

Granuloma Inguinale

Painless, progresssive ulcerative lesions
Firm papule
Incubation period varies widely - 3 weeks (1d to 1 year)
May appear necrotic, verrucous, cicatricial, or ulcerogranulomatous
Slowly destructive

Rx: doxycycline 100mg po twice daily
OR ciprofloxacin 750mg po twice daily
OR erythromycin 500mg po four times daily

Treat for three weeks at least or until all lesions healed (avg 4-6 weeks). Add gentamycin (1mg/kg iv q8h) if no response.

Case 4

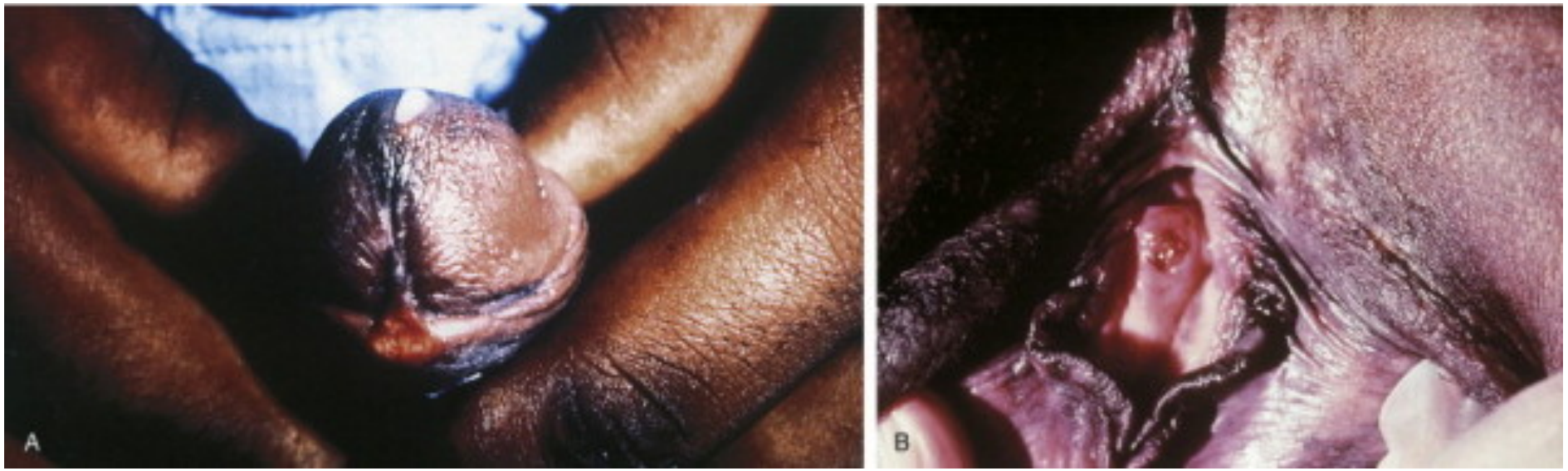
47M worried about balding and rash.

HIV positive, on medications. Developed rash on forehead and has balding. History of genital herpes and anal warts. Not sexually active for 3.5 months.

Q:What test would you do?

Answer to Case 4

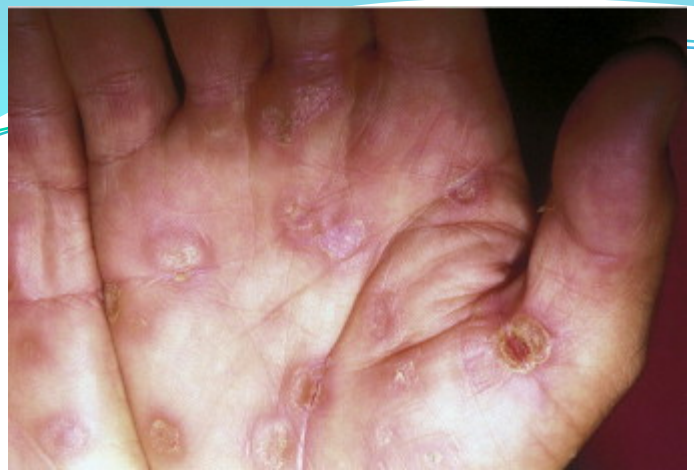
A: Syphilis serology.



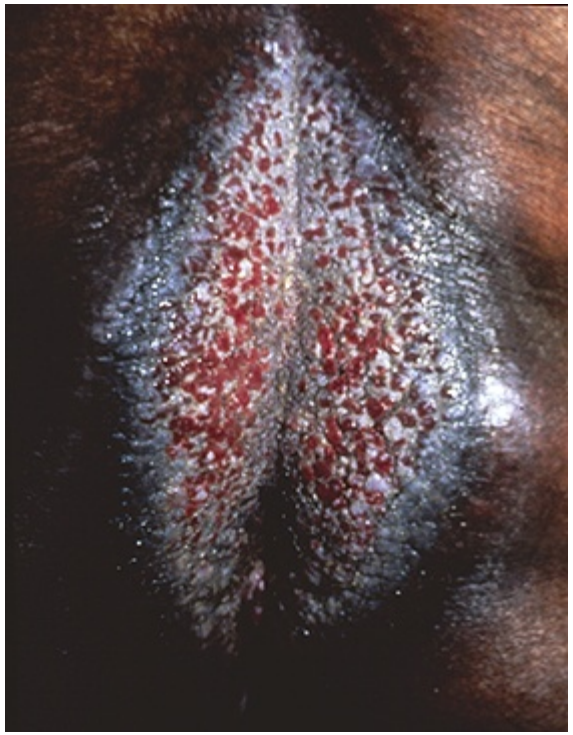
Syphilis: single, indurated, well-circumscribed usually. May be soft, irregular, and painful.

Syphilis

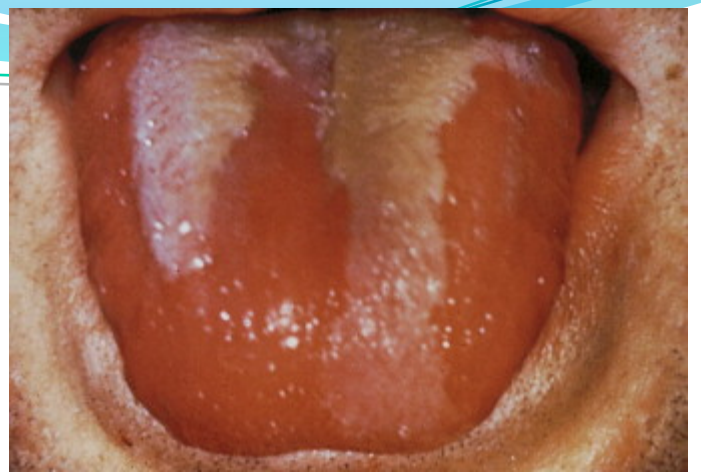
- Incubation period 3-90 days
- Primary:
  - Usually painless chancre at any site of inoculation (e.g. finger, cervix, etc.); unnoticed in 15-30% of patients
  - regional lymphadeonpathy - painless, discrete
- Secondary:
  - 2-8 weeks after chancre, dissemination of spirochetes
  - constitutional symptoms, arthralgias, pharyngitis
  - generalized lymphadenopathy, oral/skin manifestations
  - symptoms resolve in 2-10 weeks spontaneously
- Latent:
  - no clinical evidence of disease
  - within first 4 years after infection, lesion may recur at site of original chancre or skin lesions may occur



Rash of secondary syphilis



Condyloma lata



Mucous patch

Tertiary Syphilis

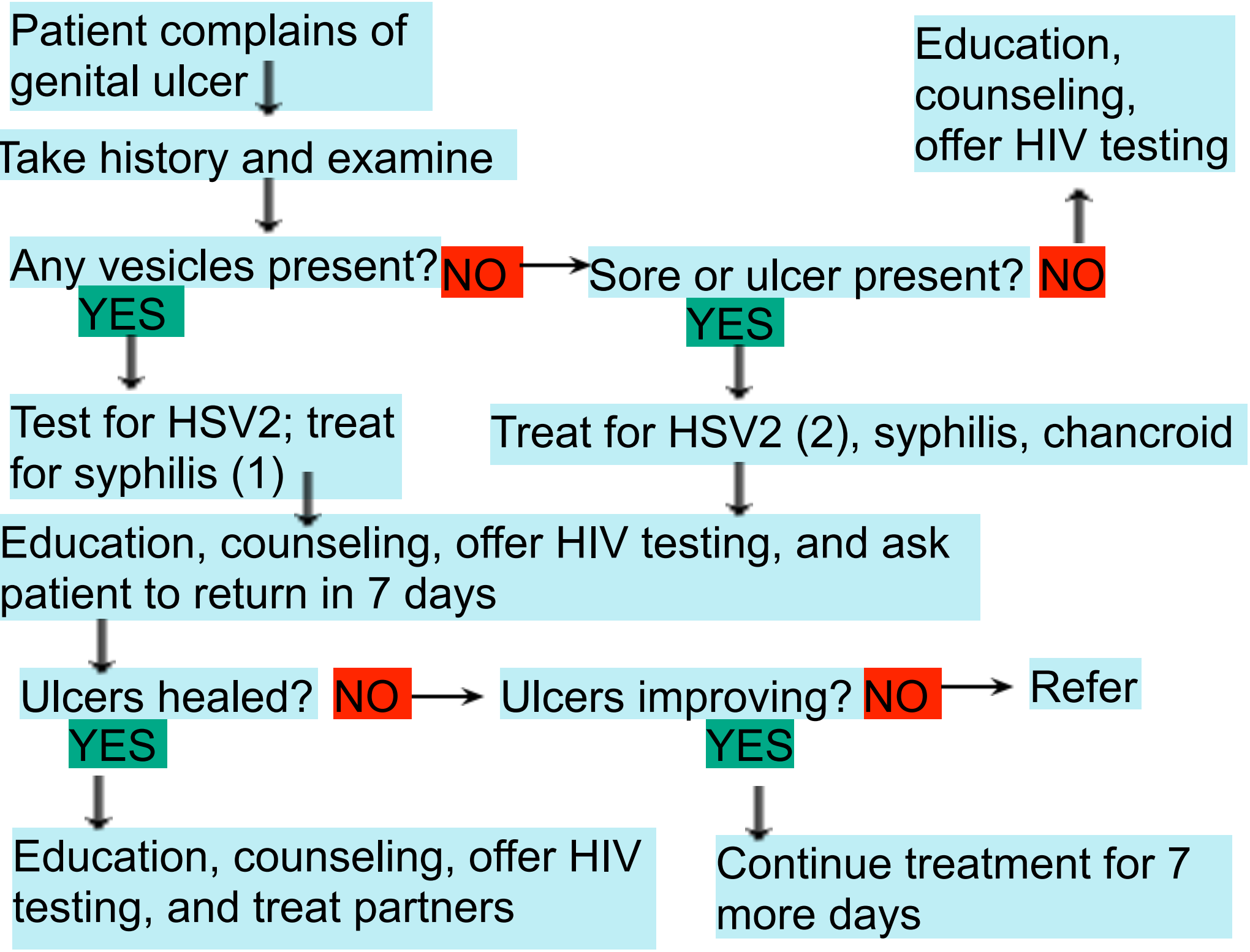
- Cardiovascular
  - aneuryms of thoracic aorta and proximal ascending aorta, coronary artery disease, aortic regurgitation
- Gummatous
  - can involve any organ system
  - skin: nodular, indurated, brownish red; may ulcerate
  - subcutaneous, esophageal, hepatic, oropharynx, larynx, hard palate, and nasal septum
- Neurosyphilis
  - asymptomatic
  - meningitis, meningovascular
  - general paresis
  - tabes dorsalis
  - deafness, optic neuritis

Syphilis - Diagnosis and Treatment

- Primary and Secondary:
  - Benzathine penicillin 2.4 million units IM weekly x 1
  - PCN allergy: doxycycline 100mg po 2x daily x 2 weeks
  - Test/treat partners if sexual contact in 90 days or follow up uncertain
  - Follow serologies every three months for 2 years and treat if increase; LP and retreat if do not decline

Syphilis - Diagnosis and Treatment

- Latent:
  - LP if HIV or concern for tertiary or if PCN allergic
  - Benzathine PCN 2.4 million units IM weekly x 3 weeks
  - Treat long-term partners (titers >1:32)
  - Repeat serologies every 6 monts for two years and retreat & LP as above
- Tertiary:
  - Aqueous Procaine Pen G 24 million units IV daily x 10-14 days followed by benzathine PCN 2.4 million units IM weekly x 3 weeks; repeat LP after therapy and every 6 months for up to 2 years


Patient complains of genital ulcer
Take history and examine
Any vesicles present?
NO
Sore or ulcer present?
NO
Education, counseling, offer HIV testing
YES
YES
Test for HSV2; treat for syphilis (1)
Treat for HSV2 (2), syphilis, chancroid
Education, counseling, offer HIV testing, and ask patient to return in 7 days
Ulcers healed?
NO
Ulcers improving?
NO
Refer
YES
YES
Education, counseling, offer HIV testing, and treat partners
Continue treatment for 7 more days

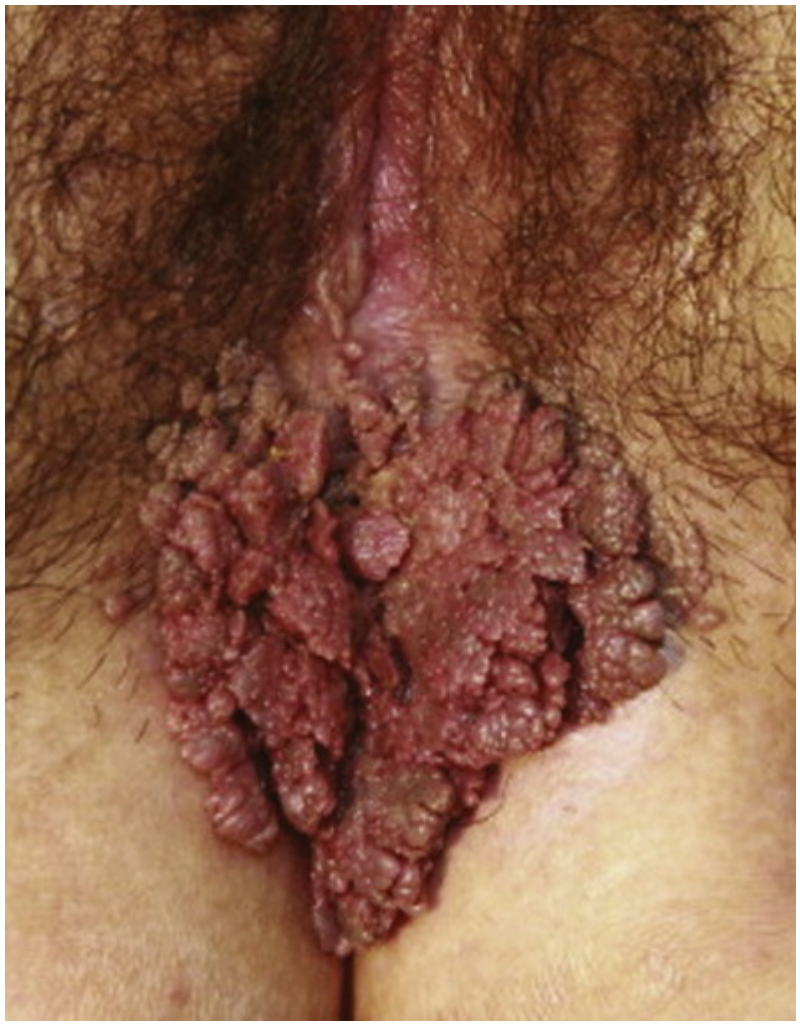
WHO approach to empiric treatment

http://whqlibdoc.who.int/publications/2003/9241546263.pdf

(1) Syphilis serology positive and not recently treated
(2) If local prevalence equal to or greater than 30%

Human Papilloma Virus (HPV)

- Clinical Manifestations:
  - benign condyloma (genital warts)
  - premalignant changes
  - cervical cancer, anogenital cancers, and oropharyngeal cancers
- High risk and low risk subtypes:
  - High risk associated with premalignant changes and cancers
  - Low risk associated with condyloma
- High risk types: 3-8 month incubation period; 80% cleared in 12 months, 95% cleared by three years



Genital condyloma from HPV.

Viral Hepatitis

Hepatitis viruses A, B, and C can all be acquired sexually

Hepatitis A: all children should be vaccinated at age 1

Hepatitis B: >8% seroprevalence in Haiti
Most often aquired perinatally; would test and offer vaccine to any child not infected or adult a high risk
- IVDU, MSM, other STD, ↑ # sexual partners, sexual partner or household contact of HepB+ person, healthcare, HIV, renal and liver disease

Hepatitis C: no vaccine. Screen if IVDU, needlestick, HD, HCV +mother, ↑ALT, transfusion/organ before 7/1992, plasma product before 1987

Case 5

24F, G2P1, with positive syphilis serology has pencillin allergy.

Q: What do you treat her with for syphilis?

Answer to Case 5

Densensitize to penicillin and treat with penicillin.

STDs in Pregnancy

Prenatal screening: HIV, N. gonorrhea, C. trachomatis, syphilis, Hepatitis B, BV (if history of preterm labor), ? Hepatitis C

HSV: 10% of pregnant women may be at risk of contracting primary HSV-2 from their husbands

- avoid contracting HSV in third trimester (high risk of neonatal HSV 30-50%)
- Caesarian section if active lesions around time of delivery

Syphilis: PCN always! desensitize if needed

- monthly serology throughout pregnancy; retreat if 4 fold decrease does not occur in three months

STDs in Pregnancy, continued

Gonorrhea: Test of cure. Rescreen in 3rd trimester.

Chlamydia: Can't use doxycycline.

- **Amoxicillin 500 mg orally three times a day for 7 days**
- **Erythromycin base 250 mg orally four times a day for 14 days**

Granuloma inguinale: Erythromycin.

BV: Treat all BV if symptomatic. Some treat if asymptomatic also.

STDs in HIV

- Screening (annually or more frequent if high risk):
  - symptoms
  - gonorrhea, syphilis, chlamydia
  - rectal/pharygneal gonorrhea/chlamydia based on exposure
  - trichomonas (women)
- Retest for gonorrhea and chlamydia 3 months after treatment as reinfection rates are high

- Syphilis:
  - always LP for latent of unknown duration or if >1 year duration
  - repeat serology at 1,2,3,6,9,12, and 24 months after treatment

Screening – Key Points

1. Ask about sexual history to elicit risk factors!

2. Annual screening for chlamydia and gonorrhea of all sexually active women aged ≤25 years is recommended, as is screening of older women with risk factors.

3. Always test for HIV in any person presenting with an STD. Gonorrhea increases HIV transmission by 3-5 times.

Questions

Question 1

What are two common causes of urethritis in men?

Answer 1

Gonorrhea and chlamydia.

Question 2

Why screen asymptomatic women for gonorrhea and chlamydia infection?

Answer 2

Screen asymptomatic women for gonorrhea and chlamydia because of the risk for progression to pelvic inflammatory disease and other complications.

Question 3

Multiple, small, shallow ulcers on an erythematous base are most commonly secondary to what infectious agent?

Answer 3

HSV 2.

Question 4

A single, painful genital ulcer with ragged borders and gray exudate that is associated with painful, unilateral inguinal lymphadenopathy is more likely to be syphilis or chancroid?

Answer 4

This presentation is more likely to be consistent with chancroid; however, always test for syphilis. Treat if positive serology or patient unlikely to return for test results, if patient not recently treated for syphilis.

Question 5

In what two groups of people would you repeat gonorrhea testing after treatment?

Answer 5

HIV positive persons – as reinfection rates are high.
Pregnant women – as test of cure.