Lecture 25

Editing file

MED438
KING SAUD UNIVERSITY

PRIMARY HEALTHCARE TEAMWORK

Sexullay Transmitted Infections

Objectives:

- ★ Recognize that sexually transmitted infections (STIs) are caused by a wide array of organisms.
- ★ Describe the different routes of transmission of common STIs.
- ★ Recognize the epidemiology of STIs in KSA.
- ★ Communicate properly with a patient presenting with a suspected STI.
- ★ Apply the medical knowledge to properly take history, examine, order and interpret laboratory tests, manage, and counsel a patient presenting with urethral or vaginal/endocervical discharge.
- ★ Apply the medical knowledge to properly take history, examine, order and interpret laboratory tests, manage, and counsel a patient presenting with a genital ulcer.
- ★ Apply the medical knowledge to properly take history, examine, order and interpret laboratory tests, manage, and counsel a patient presenting with an anogenital wart.
- ★ Recognize latent syphilis and able to order screening tests for it.
- ★ Recognize the common complications of common STIs.
- ★ Discuss the natural history of HIV, interpret the results of HIV tests, and manage a patient with a positive result.
- ★ Manage a spouse of a patient who is HBsAg +ve.

Color index:

Original text Important Doctor's notes Golden notes Extra

Introduction

Epidemiology Of STIs

- There are a lot of infections that are considered STIs!
- More than 30 different bacteria, viruses and parasites are known to be transmitted through sexual contact.
- What are the difference between STI and STD?
  - STI without symptoms but can be transmitted while STD appears with symptoms.
- The trend increases in the middle east due to social media influence, travel..so we shall consider the effect of these on child behaviour.
- There is a wide variety of infections that doesn't necessarily need an intercourse, Ex. Scabies Which is transmitted by skin to skin contact.

Bacteria	Chlamydia Trachomatis Most common
	Neisseria Gonorrhoeae
	Bacterial Vaginosis Only happen by intercourse
	Treponema Pallidum
	Chlamydia trachomatis serovars L1, L2, or L3 (Lymphogranuloma Venereum LGV)
Viruses	HIV
	Hepatitis B
	Hepatitis A
	Hepatitis C
	Human papilloma virus (HPV)
	Herpes simplex virus (1&2)
	Molluscum contagiosum
Parasite	Trichomonas Vaginalis
	Sarcoptes scabiei (scabies)
Insect	Pediculosis pubis (lice)

Routes of STIs Transmission

- STIs can be transmitted through vaginal, anal, oral, and skin contact.
- It can be in one route or multiple routes.
- Condom doesn't provide a 100% protection against STDs.

STI	Transmission
HPV	transmitted through direct contact with infected skin or mucosa.
Herpes Simplex 1-2	occurs via oral-oral, oral-genital, or genital-genital contact, as well as contamination of skin abrasions with infected oral secretions.
Chlamydia	Hetero- and homo-sexual intercourse
Neisseria gonorrhoeae	Hetero- and homo-sexual intercourse and oral-genital contact
Hepatitis B	Hetero- and homo-sexual intercourse

HIV Transmission

- HIV transmission is less among circumcised males.
- All these possibilities are when there is and infected persons without protection and treatment.
- Uncircumcised individuals carry a higher risk.

HIV* Most concerning infection	
Sexual exposure	**Risk per 10.000 exposures to an infected source (risk)**
Receptive anal intercourse The worst	138 (1/72)
Insertive anal intercourse	11 (1/900)
Receptive penile-vaginal intercourse	8 (1/1250) Higher than insertion
Insertive penile-vaginal intercourse	4 (1/2500)
Receptive or insertive penile-oral intercourse	0-4

Introduction

A Glimpse About The Epidemiology Of STIs In KSA

Table 1. Total number and annual incidence of sexually transmitted infections per 100,000 population in Saudi Arabia from 2005 to 2012.

Infection	Total number of infections (%)	Annual incidence of infection per 100,000 population
Nongonococcal urethritis The most common	35,613 (51.7)	25.4
Trichomoniasis	12,679 (18.4)	9.1
HIV	9,843 (14.3)	7.0
Syphilis	1,769 (2.6)	1.3
Human papillomavirus (genital warts)	4,018 (5.8)	2.9
Neisseria gonorrhoeae	3,006 (4.4)	2.1
Genital herpes	1,508 (2.2)	1.1
Chancroid	450 (0.7)	0.3
Total	**68,886**	**92.1**

- This table is from a retrospective analysis of the annual STI cases as obtained from the Ministry of Health (MOH) KSA, from 2005 to 2012. The data are based on the annual registry statistics of adults with STIs as obtained from the Department of Preventive Medicine, the main source of data.
- When diagnose and STI/STD test the partner and report the case.
- Expected weaknesses in this table are: underreporting and misclassification. for example, a patient with neisseria gonorrhea is diagnosed as Nongonococcal urethritis and treated empirically. Still this table is better than nothing.
- Nongonococcal urethritis (NGU): Urethral inflammation that is not the result of infection with Neisseria gonorrhoeae. (Chlamydia Trachomatis is the most common example).

How To Communicate Properly With A Patient Presenting With A Suspected STI?

- Explain the **Rationale** for some of the questions asked.
- Recognizing non-verbal cues from the patient.
- Using clear and understandable language which both the clinician and patient are comfortable (for example: you can use slang).
- Awareness of the signs of anxiety and distress from the patient.
- Recognizing non-verbal cues from the patient.
- It is embarrassing for a patient infected with STI to seek help, so he may consult doctors in social media via a fake account, or ask the doctor indirectly like saying one of people I know got an STD, or do a STI screening test but some disease has certain incubation period that a negative result may be yielded in that time. Private clinics has some advantage in which any test can be done with more confidentiality.

★ ***It is important to ensure privacy and confidentiality to the patient during history taking of a patient with a suspected STI.***

Symptoms and Signs of STIs

Chief Complaint In a Patient With STIs

What would be the chief complaint of a patient with a possible STI?

- Complaints where an STI is very likely (Top Of The Differential Diagnosis):

1. **Urethral discharge (in men) or vaginal/endocervical discharge (in women) (urethritis/vaginitis or cervicitis):**
    - Most common cause is Non gonorrheal urethritis.
    - The most common organism responsible for NGU is chlamydia trachomatis (Little discharge in comparison to neisseria gonorrhoeae & a lot of people have it but are asymptomatic), followed by Mycoplasma genitalium.
    - Another common organism responsible for NGU is trichomonas vaginalis.
    - Also neisseria gonorrhoeae is a common cause for urethral/vaginal discharge (gonococcal urethritis).
    - Please note that vaginal discharge can be caused by non-sexually transmitted infections such as bacterial vaginosis and vulvovaginal candidiasis and other non-infectious causes such as:
        - Use of spermicides and soap on genital area, might irritate the urethra causing non-infectious urethritis.
        - Repeated vigorous stripping or milking of the urethra, which might irritate the urethra causing non-infectious urethritis.

- **The patient tells you that he/she has a urethral or vaginal discharge, what should be your next questions?** ↓

Consistency of the discharge	Can range from mucoid or watery to frankly purulent, and can be associated with mucus threads.
Amount	Copious or scant (Sometimes the discharge is so scant that patient only notice stained underwear in the morning).
Timing	May be present throughout the day or may be scanty and only present on the first morning void.
Smell	Odorless or malodorous.
Associated symptoms in both genders	Dysuria, polyurea.
Associated symptoms in males	Testicular pain or swelling. (More with epididymitis and orchitis)
Associated symptoms in females	• Vaginal pruritus, intermenstrual or post coital bleeding or menorrhagia. (Inflammation in cervix) • Females have higher tendency to present with urethral discharge without sexual intercourse.

Symptoms and Signs of STIs

Chief Complaint In a Patient With STIs Cont..

What would be the chief complaint of a patient with a possible STI Cont..?

2. **Ulcer in the sexual contact area:** it breaks the skin barrier so may cause other infections .
    - The majority of genital ulcers are caused by sexually transmitted infections (STIs), although there are noninfectious etiologies that should be considered once STIs have been ruled out.
    - **The most common STI cause is herpes simplex viruses (HSV-1) (Oral) or (HSV-2) (Genital).**
    - **Syphilis caused by Treponema pallidum.** (Chancre appearance)
    - Lymphogranuloma venereum (LGV) caused by L1, L2, and L3 serovars of Chlamydia trachomatis.
    - Chancroid caused by Haemophilus ducreyi. Painful and more common in countries with poor hygiene like South Asia.
    - Genital ulcers increase the risk of acquiring HIV.
    - **HSV** causes **painful** ulcers whereas **Syphilis** ulcers are **painless.**
    - Rheumatological diseases especially Behçet disease is s medical condition that can cause genital ulcer.

- **The patient tells you that he/she has a genital ulcer, what should be your next questions?**
    - The number of lesions.
    - Whether the lesions are painful, Painful ulcers tend to be more typical of HSV and chancroid, while ulcers associated with syphilis, LGV are usually painless.
    - The presence of swelling in the inguinal area (lymphadenopathy).
    - Constitutional symptoms.
    - Associated symptoms:
        - Dysuria: A complaint of dysuria may be due to the anatomic location of a genital ulcer, and painful urination may be the chief complaint in a female with an ulcerative labial or urethral lesion, or in a male with an ulcer at the urethral meatus or on the glans. Dysuria may also suggest a concurrent diagnosis of a sexually transmitted urethritis like NGU or Gonorrhea.
        - Are the ulcers recurrent? A history of recurrent ulcers would suggest HSV infection.
        - If the ulcers are recurrent are they proceeded by any prodromal symptoms such as local mild tingling or shooting pains in the buttocks, legs, and hips.

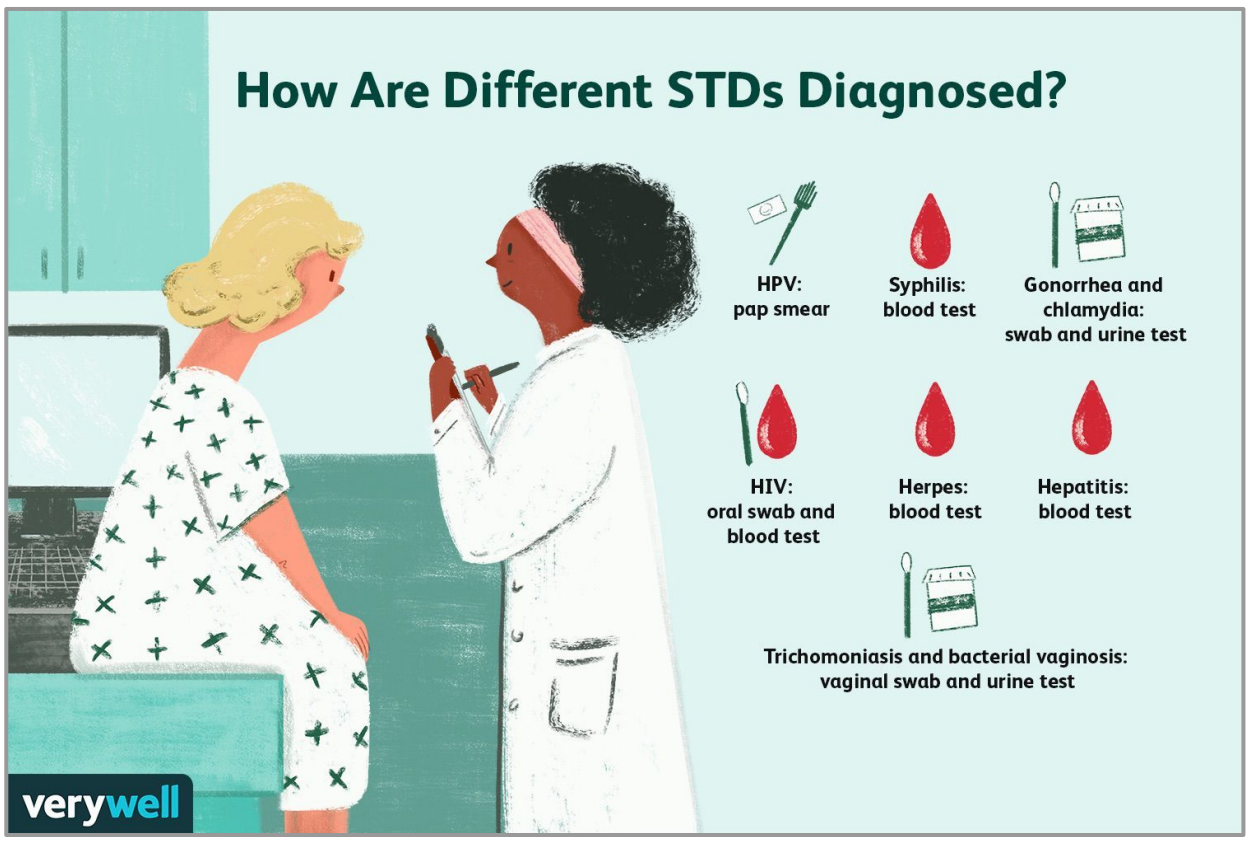
3. **Anogenital warts (Condyloma acuminate): (Less common than the first two)**
    - External anogenital warts are typically found on the vulva, penis, groin, perineum, anal skin, perianal skin, and/or suprapubic skin
    - The warts are typically asymptomatic (Painless) but occasionally can be pruritic.

- **What is the organism responsible for anogenital warts?**
    - Anogenital warts are caused by genital HPV which are divided into low-risk and high-risk types based upon associated risk for cancer in any body area. There are more than 200 types of HPV, The low-risk types HPV 6 and/or HPV 11 are detected in around 90% of anogenital warts. (HPV 16 and 18 can cause cancers)
    - Skin tags can be differentiated from genital warts by their size (tags are smaller) and Excising it and send to histopathology.

Symptoms and Signs of STIs

Chief Complaint In a Patient With STIs Cont..

3. **Anogenital warts (Condyloma acuminate) Cont..**
    - **Differential diagnosis of anogenital warts:**
        - Common benign papular cutaneous conditions such as seborrheic keratosis, acrochordon, pearly penile papules...etc
        - Sexually transmitted diseases such as molluscum contagiosum, and condyloma latum of 2ry syphilis.
        - Inflammatory conditions, such as lichen nitidus and papulosquamous lesions of lichen planus.
        - Premalignant and malignant disorders, such as bowenoid papulosis and giant condyloma acuminatum.
    - **I am not sure from history and clinical examination that the wart is caused by HPV, what should I do to confirm the diagnosis?**
        - Excise the wart and biopsy it to confirm the diagnosis and rule out malignancy.



History Taking In STIs

History Taking In STIs OSCE

- **Associated symptoms you should ask a patient with a genital discharge, ulcer, or wart.**
- Please note that if the patient present with the following symptoms as his/her chief complaint, don't forget adding STIs it to your differentia):
  1. Dysuria.
  2. Lower abdominal/pelvic/peri anal/anal/inguinal/penile/scrotal pain.
  3. Scrotal/inguinal swelling.
  4. Dyspareunia (in females). (Pain during intercourse)
  5. Post coital and intermenstrual bleeding **(Suggestive of cervicitis)**.
  6. Rectal discharge or bleeding.
  7. Fever.
- **For common sexually transmitted infections, what is the percentage of asymptomatic infection?** ↓

Infection	Percentage of asymptomatic infection	
	Men	Women
Chlamydia trachomatis	70%	85%
N. Gonorrhea	60%	70%
Trichomonas vaginalis	75%	70-85%
HSV	75-80%	

- **What is the 5Ps mnemonic that you should ask any patient with a suspected STI?**
  - The Five P's:
    1. **P**artners.
    2. **P**ractices.
    3. **P**revention of Pregnancy. (Including any type of contraception.e.g condom and OCPs)
    4. **P**rotection from STDs.
    5. **P**ast History of STDs or STDs testing.
- **What should you ask in social history in a patient with a suspected STI?**
  - Married or single?
  - History of sexual contact in the last 90 days (3 months)?
    - If yes marital or extra-marital?
    - When did it exactly happen? (in order to determine the incubation period).
    - How many partners?
    - Homosexual, heterosexual, or both?
    - Sites of sexual contact (oral, genital, rectal).
    - Was protection used or not?
  - Does the partner have a known STI?
  - Travel history: visiting suspicious places (massage parlors, night clubs…etc) or dealing with suspicious people (private dancers, sex workers).
  - Use of alcohol or illicit drugs.(Can induce a risky behaviour leading to sexual practice)
- **Incubation periods of common sexually transmitted infection:**

Infection	Incubation Period	
Chlamydia trachomatis	Men: 5-10 days, women: 7-14 days	Women have longer IP
N. Gonorrhea	Men: 4-8 days, Women 10 days	Women have longer IP
Trichomonas vaginalis	4-28 days	
HSV	2-7 days	Very short
Primary Syphilis	7 to 90, median is 21 days	

History Taking In STIs

History Taking In STIs OSCE Cont..

- **Why Drug history is important in a patient with a suspected STI?**
  - Patients should be questioned about medication use since reactions to medications, systemically or locally (eg, over-the-counter products such as antibacterial ointments), may cause genital ulcers. Sometimes side effect of some drug or topical drugs can cause alteration in genital area.
- **What should ask in the past medical history in a patient with a suspected STI?**
  - Past history of other STIs and prior STI testing.
- Don't forget to ask female patients about their last menstrual period.
- When an STI is detected in a child, evaluation for sexual abuse is mandatory.

Physical Exam in STIs

- **What vital signs should you pay attention to in a patient with a suspected STI?**
  - Temperature for fever.

Physical Examination Of A Patient With A Suspected STI	
What should you focus on in the physical examination of a patient with suspected STI?	
1. Examination related to urethral/vaginal or cervical discharge	
In Men	**In Women**
• If the patient is complaining of discharge, the discharge may be grossly evident or may only be detectable after gentle "stripping" or "milking" of the penis. • The urethra can be milked from the base to the meatus by placing a gloved thumb along the ventral surface of the base of the penis and the forefinger on the dorsum, applying gentle pressure, and moving the hand slowly toward the meatus to expel any discharge for specimen collection. • Mucopurulent or purulent discharge on examination confirms the diagnosis of urethritis in a symptomatic male patient. • Examine the scrotum for swelling and tenderness as epididymitis is one of the possible complications. • Gentle digital rectal exam is warranted in men who have symptoms suggestive of underlying prostatitis. (Like difficulty in urinating or hesitancy)	• In women, chlamydia and gonorrhea most commonly affect the cervix. • In order to examine the cervix, you will need to do a speculum examination. • You will look for erythema, swelling, and mucopurulent discharge at the cervical opening. • In case of cervicitis endocervical bleeding is easily induced by gentle passage of a cotton swab through the cervical opening.

Physical Exam in STIs

Physical Examination Of A Patient With A Suspected STI

What should you focus on in the physical examination of a patient with suspected STI?

2. Examination related to genital ulcer

- The number of lesions as well as their appearance may suggest one diagnosis over the other. As an example, infection due to HSV or H. ducreyi (chancroid) typically presents as **multiple ulcers**, whereas syphilis usually presents as a **single ulcer**.
- Herpetic lesions classically begin as one or more grouped vesicles on an erythematous base. These vesicles subsequently open, resulting in shallow ulcers/erosions that may coalesce. In areas under the foreskin or around the labia and rectum, vesicles often break prior to being noticed.
- The syphilitic chancre is classically a single, indurated, well-circumscribed painless ulcer on a clean base (please note that the chancre can be painful if it develops a secondary infection), the chancre will heal spontaneously.
- The ulcers associated with chancroid begin as papules that go on to ulcerate. The ulcers are characteristically deep and ragged with a purulent, yellow-gray base, and an undermined, violaceous border.
- You should examine inguinal lymph nodes, Inguinal lymphadenopathy is commonly seen in patients with infectious causes of genital ulcers.
- The lymph nodes are often **tender** in patients with HSV, chancroid, and LGV.
- Rubbery, **non-tender** nodes are often seen in late primary syphilis.

3. Examination related to anogenital warts:

- Anogenital warts can be single or multiple, flat, dome-shaped, cauliflower-shaped, filiform, fungating, pedunculated, cerebriform, plaque-like, smooth (especially on the penile shaft), verrucous, or lobulated.
- The color varies; warts may be white, skin-colored, erythematous (pink or red), violaceous, brown, or hyperpigmented.
- Anogenital warts are usually soft to palpation and can range from 1 mm to more than several centimeters in diameter.
- Warts might be malignant if in doubt excise and send it for biopsy

4. Examination related to all of the above:

- Other anatomical sites, such as the pharynx or rectum, may be affected by sexually transmitted infections, and pharyngitis, proctitis, or (more commonly) asymptomatic infection at these extragenital sites may accompany the presenting STI.
- If the patient is presenting with any of the three complaints you have to check him/her for the other two during examination.

Physical Exam in STIs Cont..

- **Are history and physical examination enough to determine the etiology of a genital ulcer?**
  - No, Determining the etiology of a genital ulcer based only upon the history and physical exam may lead to a mistaken diagnosis and inappropriate treatment in some settings.
  - The signs, symptoms, and appearance of genital ulcers due to individual pathogens can vary, and coinfection with multiple organisms can also occur. In addition, patients who are immunocompromised may have atypical clinical presentations, including more widespread and severe disease.
- **What should be your general approach to testing in a patient with a genital ulcer?**
  - Patients should be tested for common STIs regardless of the clinical presentation, Patients with an ulcerative sexually transmitted infection (STI) are at increased risk for co-infection with other STIs. Thus, individuals should also be tested for HIV, gonorrhea, and chlamydia. Also, testing for hepatitis B (More transmitted sexually than C) and hepatitis C may also be considered.
  - Some patients may have a known cause for their STI (eg, they know the infection their partner have or have recurrent herpes simplex virus [HSV] infection). For such patients, we still test for other common STIs because more than one infection may be present.
- **What if initial testing for STI causes of genital ulcer came back negative?**
  - If initial testing for STIs is negative, test for non-sexually transmitted infections and noninfectious causes.

Investigations In STDs

- **What should be included in the baseline testing of a patient with a genital ulcer or urethral/vaginal discharge?**
  - Patients who present with genital ulcers should undergo testing for common causes of genital ulcers, such as HSV 1&2 and syphilis.
  - Patients who present with urethral/vaginal or endocervical discharge should undergo testing for common causes of urethritis/vaginitis or cervicitis such as chlamydia and gonorrhea.
  - As well as other STIs (eg, HIV, hepatitis B, and hepatitis C).
- **What tests can you order for a patient presenting with urethral/vaginal discharge?**
  1. **Gram stain and culture of urethral (Men), Endocervical swab:**
     - The Gram stain should be examined for the presence of WBCs (specifically polymorphonuclear neutrophils [PMNs]) and any organisms.
     - The presence of PMNs without any visible organisms is consistent with NGU, whereas gonococcal urethritis may be diagnosed by the demonstration of **gram-negative intracellular or extracellular diplococci** in the urethral exudate.
     - A Gram stain has low sensitivity in women compared with men due to the possible presence of other non pathogenic gram-negative diplococci in cervical secretions.
  2. **In men First-void or first-catch urine:**
     - First-void urine: the initial portion of the first urinary stream after awakening.
       - We take first void urine because the discharge is more commonly occurring in the morning.
     - First-catch urine: the initial portion of any urinary stream. (ideally at least one hour after the previous micturition).
     - Both can be examined using the following:
       - Dipstick: positive leukocyte esterase (this is diagnostic of urethritis).
       - Microscopy: the presence of ≥10 WBC/hpf (this is diagnostic of urethritis).
       - Nucleic acid amplification testing (NAAT)/(PCR) for identification of the causative organism (Can detect: N.gonorrhea, Chlamydia t., Trichomonas vaginalis, Mycoplasma genitalium, and Ureaplasma urealyticum), There are several ways of amplification including polymerase chain reaction **(PCR)**, Strand displacement assay (SDA), or Transcription mediated assay (TMA).
  3. **In women**
     - Self- or clinician-collected vaginal swab or a clinician-collected endocervical swab or a urine sample (urine sample NAAT is less sensitive in women) can be examined for the following:
       - Nucleic acid amplification testing (NAAT)/(PCR) for identification of the causative organism.
     - **Women with reproductive potential and an STI should undergo pregnancy testing.**

Investigations In STDs

Investigations In STDs Cont..

- **Why is it important to identify the organism causing the urethral/vaginal discharge?**
  - For accurate diagnosis and notification to ministry of health in order to monitor the epidemiology of STIs.
  - For partner treatment.
- **What tests can you order to diagnose herpes simplex 1 or 2?**
  1. The lesion should be swabbed and directly tested for HSV.
     - Nucleic acid amplification methods (NAATs), including polymerase chain reaction (PCR) assays, are now commercially available and are the test of choice, as they have a higher sensitivity than culture or direct immunofluorescent antibody testing.
  2. If HSV PCR is not available, a viral culture of the base of the ulcer can be obtained. If a vesicle is present, vesicular fluid is preferred because of its higher diagnostic yield.

Syphilis Infection

- **What are the types of tests done to screen for or diagnose syphilis?**
  - There are serological tests and Direct methods:
    1. **Direct methods:** such as Darkfield microscopy and direct fluorescent antibody (DFA) testing, they are not routinely available in clinical settings because these methods require special equipment to perform the test, as well as considerable experience and expertise to properly interpret the results.
    2. **Serological tests** which are divided into:
       - A. **Nontreponemal tests (Indirect test):** rapid plasma reagin (RPR) test and the Venereal Disease Research Laboratory (VDRL) test. (Used in pregnancy to be safe from latent syphilis.)
       - B. **Treponemal test (Direct test):** Treponema pallidum hemagglutination assay (TPHA), T. pallidum enzyme immunoassay (TP-EIA), and Fluorescent treponemal antibody absorption (FTA-ABS)
  - Both tests have false positive so if you do one you have to do the other type.
  - The most concerning stage in diagnosis is primary (latent) syphilis.
  - We do test these tests for pregnant women and in occupational matters.
  - Algorithm test is doing indirect test then direct while the reversed algorithm is vice versa but all are ok, but most importantly is to do one test from each type For confirmation.
- **What is the difference between Treponemal and Nontreponemal tests?**

Treponemal Vs Non-Treponemal	
Treponemal	**Non-Treponemal**
Treponemal tests are based on the detection of treponemal antibody the antibody that attacks T. pallidum, the spirochete that causes syphilis in the blood.	Nontreponemal tests determine the presence of a nontreponemal antibody directed against cardiolipin antigens.

Syphilis

Syphilis Infection

- **In a patient with a suspected primary syphilis (chancre) which type of test should I order and why?**
  - The definitive method for diagnosing syphilis is visualizing the Treponema pallidum bacterium via darkfield microscopy of a swab from the ulcer. This technique is rarely performed today. It requires special expertise.
  - Serologic testing to diagnose syphilis should include the use of both nontreponemal and treponemal tests. Either type of test can be used as the initial screening test (please note that treponemal tests Becomes reactive earlier in primary syphilis than nontreponemal tests).
    - Confirmatory testing using the other type is necessary due to the potential for a false positive screening test result.
  - In other words if you use nontreponemal for screening, confirm with treponemal and vice versa.
- **Which type of serological syphilis tests can be used to follow up response to treatment?**
  - **Nontreponemal test** antibody titers might correlate with disease activity and are used to follow treatment response.
- **What if both nontreponemal and treponemal tests came back negative in a patient suspected to have primary syphilis?**
  - If there is a high clinical suspicion for primary syphilis, treat the patient and repeat serologic testing at a later time point (eg, two to four weeks later) in order to confirm the diagnosis.

An area for your notes

Stages Of Syphilis

Stages Of Syphilis

Stages Of Syphilis		
Stage	**Symptoms**	**Occurrence**
Primary	Chancre (painless ulcer), regional lymphadenopathy.	**7 to 90, median is 21 days.**
Secondary (The Great mimicker)	• Rash and flu-like symptoms, meningitis, headache, uveitis, retinitis, condyloma lata, mucus lesions, alopecia. • If primary syphilis is untreated 25% will develop 2ry syphilis.	• **2 weeks to 3 months following exposure.** • **1-8 weeks following resolution of chancre (primary syphilis).**
Latent	Asymptomatic	**Occur any time between 2ry and 3ry syphilis.**
Tertiary	• Neurologic, cardiovascular, and other complications. • 25-40% of untreated patients with syphilis will develop 3ry syphilis.	**May appear at any time from 1 to 30 years after primary infection.**

- **When can we say a patient has latent syphilis?**
  - Patients without a past diagnosis of syphilis who have both a reactive nontreponemal test (eg, rapid plasma reagin) **and** a reactive treponemal test
  - Patients with a prior history of syphilis (1ry or 2ry) who have a current nontreponemal test titer that demonstrates a fourfold or greater increase from the last nontreponemal test titer.
- **Latent syphilis is classified into 2 types, what are they and what is the difference between them?**
  - **Early latent syphilis**
    - Asymptomatic syphilis acquired within preceding year.
    - Infectious.
  - **Late latent syphilis**
    - Asymptomatic phase of syphilis acquired > 1 year previously.
    - Not thought to be infectious.

Empiric Treatments

Empiric Treatment For Genital Ulcers?

- **When should you consider empiric treatment for a patient presenting with a genital ulcer?**
  - **A known exposure to an STI;** The choice of agent depends upon the pathogen.
  - **Genital ulcers suggestive of HSV;** Since **antiviral therapy** can lessen the severity and duration of symptoms compared with untreated disease.
  - **Genital ulcers suggestive of syphilis** (single or painless ulcer) in patients who are at high risk for infection, such as:
    - Sexually active men who have sex with men (MSM).
    - Commercial sex workers.
    - Individuals who exchange sex for drugs
    - HIV patients.
    - The treatment is a single dose of Penicillin.

Infection	Medication	Dose	Frequency	Duration	Route	Note
Syphilis	penicillin G benzathine	2.4 million units	One dose		IM	-Don't forget to order serological tests prior to giving therapy, use nontreponemal tests to follow up response.
HSV 1&2	acyclovir	400 mg	three times daily	7-10 days	Oral	-Ideally antiviral therapy should be started ASAP after lesion appearance & within 72 hours. -Antivirals will decrease duration and severity of symptoms.
	famciclovir	250 mg	three times daily			
	valacyclovir	1000 mg	twice daily			

Empiric Treatment For Urethral Discharge?

- **What treatment should be offered for patients suspected to have an STI causing urethritis/vaginitis or cervicitis?**

A. In patients with symptoms of urethritis/vaginitis or cervicitis who have laboratory evidence of gonococcal infection or high clinical suspicion of gonococcal infection (eg, known or suspected N. gonorrhoeae exposure, extramarital sex), treatment for N. gonorrhoeae is indicated.

- For patients with gonococcal infections, dual therapy with ceftriaxone plus azithromycin is recommended at the following doses:
  - **Ceftriaxone** 250 mg intramuscular in a single dose for treatment of gonococcal infection **PLUS Azithromycin** (1 gram for the chlam in a single oral dose) for possible additional activity against N. gonorrhoeae and for treatment of potential chlamydia coinfection. And for resistance.
  - A common Side effect of one gram azithromycin is abdominal pain.

B. Treatment for NGU, in which there is no microscopic, laboratory, or clinical evidence of N. gonorrhoeae, is usually targeted against C.trachomatis as the most likely pathogen.

- First-line treatment for chlamydia is either a single oral dose of **azithromycin** (1 gram) or a course of **doxycycline** (100 mg orally twice daily for seven days)
  - **Remember this "A gram for the chlam!**

Complications of STIs

Treatment Options For Anogenital Warts

- **What are the treatment options for anogenital warts?**
  - **First-line patient-applied therapies include:**
    - Topical Imiquimod.
    - Topical Podophyllotoxin.
  - **First-line clinician-administered therapies include:**
    - Cryotherapy.
    - Surgical removal (excision, electrosurgery, or laser).

Common Complications Of Common STIs:

Infection	Gender	Complications
Chlamydia and gonorrhea	Men	urethral strictures, epididymitis, infertility
	Women	Pelvic inflammatory disease (PID), infertility, ectopic pregnancy, perinatal infection, chronic pelvic pain
	Both	reactive arthritis or Reiter syndrome (arthritis, uveitis, and urethritis), increased risk of acquiring and transmitting HIV
Genital Herpes (HSV-1 and -2)	Both	Recurrent episodes, vertical transmission to the baby during delivery, increased risk of acquiring and transmitting HIV (If there's an active lesion she should have a C-section)
Syphilis	Both	2ry, latent, & 3ry syphilis, congenital syphilis (mother to baby transmission), increased risk of acquiring and transmitting HIV
HPV	Women	Cervical, vulvar, and vaginal cancer.
	Men	Penile cancer
	Both	Rectal cancer

Management Of STIs:

- **How long should a patient treated or suspected to have an STI abstain from sexual activity?**
  - All patients should be advised to refrain from sexual activity while awaiting test results and, if empiric therapy was initiated, for at least 7 days after both the patient and his/her partner are treated.
- **What should be included in your counseling to a patient with an STI?**
  - Counseling regarding partner/contact testing and treatment.
  - If the patient was exposed to an STI during an extramarital relationship, he/she should be advised to avoid extramarital sexual activity as it is strictly prohibited in Islam and to avoid getting another STI.
- **When should follow up be scheduled for a patient with an STI?**
  - Within one week of the initial visit to assess the clinical response to therapy and review results of diagnostic testing. (For HIV and hepatitis takes months to follow up)

Retesting:

- A repeat testing to confirm cure is recommended for all pregnant women with an STI.

Instruction:

- Avoid sexual contact at least for 7 days after starting treatment and until symptoms have resolved.

Prevention of STIs

Prevention

- **Behavior:**
  - **Abstinence:** it is the only way to avoid STIs 100%. (When advising in OSCE this should be your main point not the use of condoms)
  - Condom use reduce STI transmission significantly but not 100% effective.
  - Avoiding alcohol and illicit drug use: These affect mental status and might lead to risky sexual practices.
  - Avoid suspicious places during travel, massage parlors, night clubs, sex workers…ect
- **Vaccines:**
  - Hepatitis A & B.
  - HPV vaccine.

Partner Management:

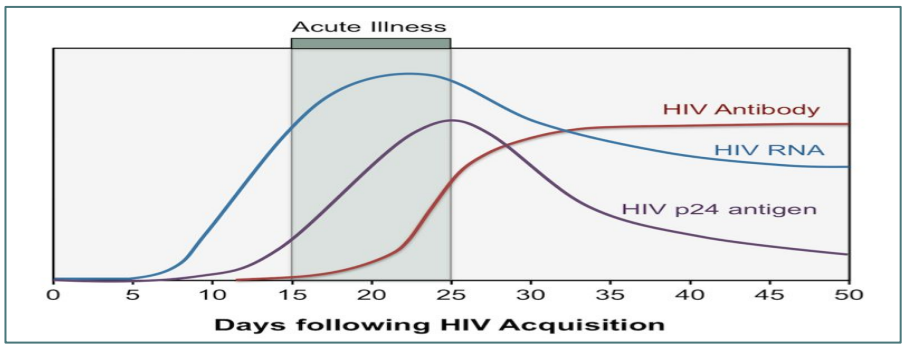
- All individuals who have had sexual contact with patients diagnosed with N. gonorrhoeae, or C. trachomatis within the 60 days prior to the diagnosis should be evaluated and treated if appropriate.
- Contacts of a patient with primary syphilis within the preceding 90 days, even if their serologic test for syphilis is negative.
- Contacts of a patient with chancroid within the preceding 10 days.
- No need to empirically treat contacts of patients with genital herpes simplex virus (HSV). However, such patients should be counseled and educated about the symptoms and presentation of HSV Type-specific antibody testing (IgM & IgG) can be offered to contacts to assess their HSV status and potential risk for HSV transmission.

Follow Up

- **Follow up should be scheduled within 1 week** of the initial visit:
  - To check for resolution of symptoms.
  - To see results of tests.
- **Please note that it is important to report all sexually transmitted infections using the contagious diseases notification form available at your institution.**
- **If a patient has an STI it is common that he has another STI. Hence, we should utilize this opportunity for testing.**

Natural History Of HIV

- **What is the window period in HIV infection?**
  - Time between infection and development of anti-HIV antibodies; when serologic tests (ELISA, Western blot) are negative.
  - It may give a false insurance.



Indications For HIV Testing

- In KSA it is part of pre-marital screening and some pre-employment screening (for eg. Health care providers)
- **In case of suspected exposure and a symptomatic manifestations of an early HIV infection** (fever, lymphadenopathy, sore throat, rash, myalgia/arthralgia, diarrhea, weight loss, and headache) also called (retroviral syndrome):
  - Perform the most sensitive screening immunoassay available (ideally, a combination antigen/antibody immunoassay) in addition to an HIV virologic (viral load) test using PCR.
- **In case of suspected exposure and no symptoms (This is the common scenario) anti-HIV antibodies detectable after a median of 3 weeks, virtually all by 3 months (therefore 3 months window period).**
  - **Initial screening test** (3rd generation antibody test): enzyme linked immunosorbent assay **(ELISA)** detects serum antibody to HIV; sensitivity >99.5%
  - Increasingly, combination **p24 antigen/HIV antibody tests (4th generation)** used for screening; improved sensitivity in early or acute infection and sensitivity/specificity approach 100% for chronic infection.
  - **Confirmatory test:** If positive screen, an **HIV-1/HIV-2 antibody differentiation using western blot or line immunoassay** is performed; specificity >99.99%
  - Combo test: (HIV Antibody + p24 antigen) if its negative for 42 days we exclude HIV
  - HIV RNA (Assessing the viral load) is used if the patient have symptoms (Should have strong history).

Indications For HIV Testing

	Enzyme linked Immunoassay (3rd or 4th gen)	Confirmatory test (western blot or line immunoassay)	viral load (PCR)	Interpretation
Scenario 1	Negative	No need	No need if asymptomatic	HIV negative
Scenario 2	Positive	Negative or intermediate	Negative	-If the patient is at low risk for HIV, he or she should be reassured that HIV infection is very unlikely. -if the patient is not at low risk or you are not sure about his risk level repeat viral load after 1-2 weeks
Scenario 3	Positive	Negative or intermediate	Weakly positive (RNA level <1000 copies/mL)	may rarely represent a false positive viral test and the viral load test should be immediately repeated on a new blood specimen
Scenario 4	Positive	Negative or intermediate	positive	HIV positive
Scenario 5	Positive	Positive	Not needed	HIV positive

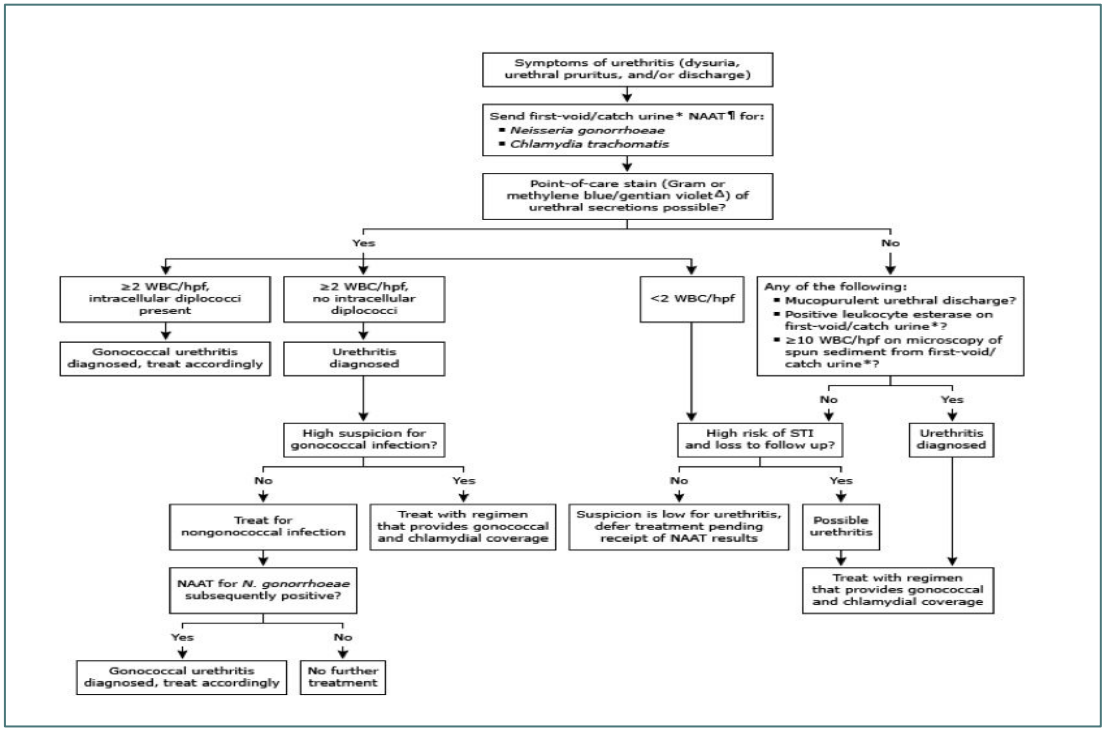
- **What about rapid HIV screening tests?**
  - Rapid HIV screening tests are designed to provide results in less than 20 minutes. Although these tests can be performed in the laboratory (using serum or plasma), they can also be performed in community-based settings supervised by trained personnel, or at home, using whole blood or oral secretions.
  - The accuracy of most rapid tests is quite high (>99% sensitivity and specificity) for patients with chronic infection.
  - In one study, rapid antibody tests missed approximately 12 percent of acute HIV infections.
  - In addition, testing on oral fluids appears to be less sensitive than testing on finger stick blood samples.
  - It is used for chronic infection.
- **How to manage a patient with a positive HIV screening test?**
  - Breaking bad news.
  - MOH notification. Most important.
  - Referral to infectious diseases specialist.
  - Screening of sexual contacts and family member.

Hepatitis B Infection

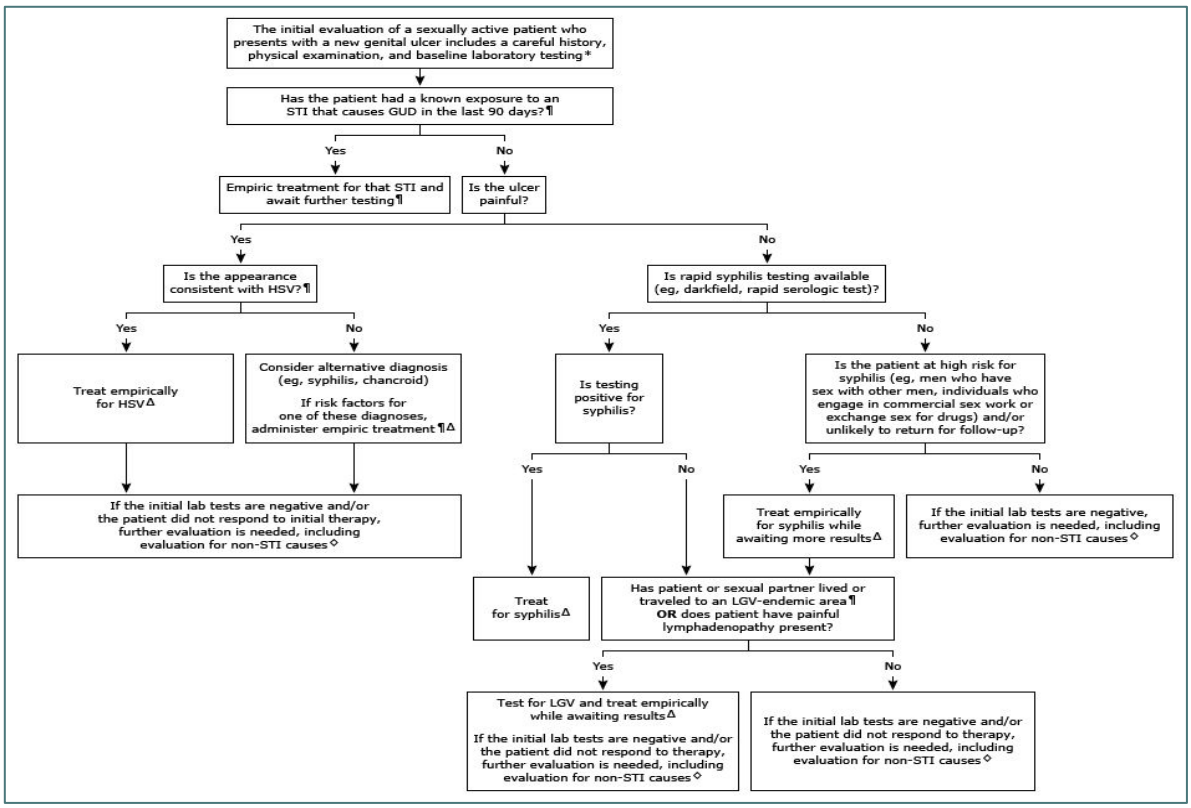
- **A patient who is a HBsAg +ve married or planning to marriage came to you asked you is it safe to have sexual intercourse with his/her partner?**
    - Yes, people who are HBsAg +ve can have sexual intercourse with their partners.
    - If the partner is immune they can have normal sexual intercourse without need for condom.
    - If the partner is not immune.
    - They can have sexual intercourse using condom.
    - The partner should receive a hepatitis B vaccination series (3 doses at 0, 1 month, & 6 months), then 1-2 months after finishing the series he/she should be tested for immunity against Hep B, if immune they can have intercourse without condom.
- **When we say the patient is immune after vaccination?**
    - Anti-HBs ≥10 milli-international units/mL.

An area for your notes

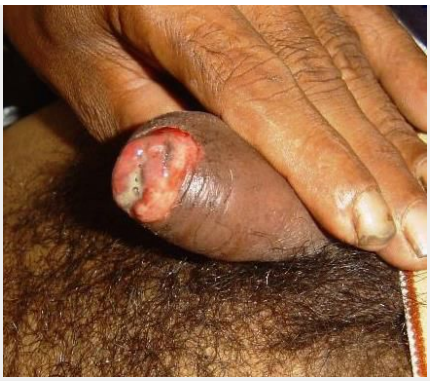
Approach To A Male Patient With Suspected Urethritis



Approach to a Patient with a Genital Ulcer

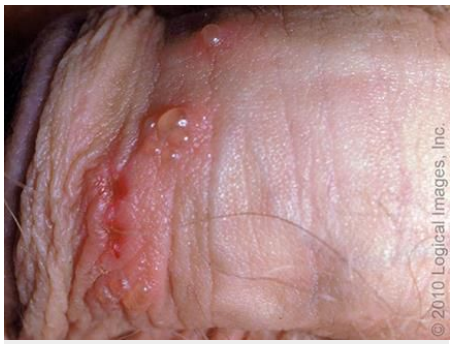


Pictures & Notes

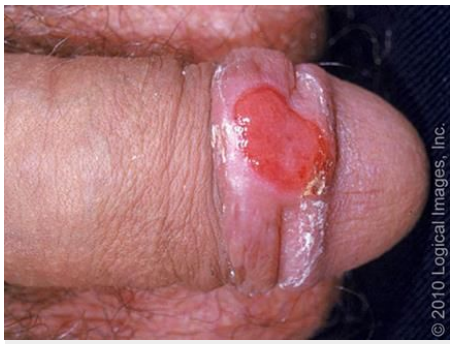


Purulent penile discharge

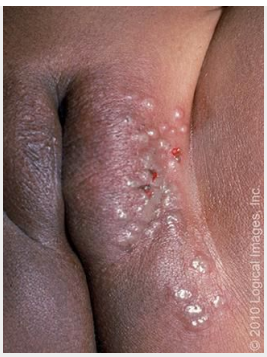
N. gonorrhoeae



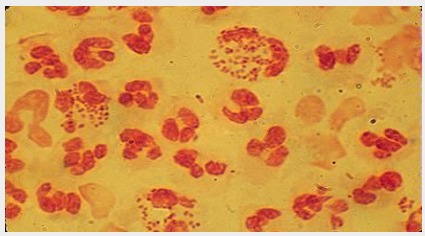
Genital herpes simplex virus, male
Herpetic lesions classically begin as one or more grouped vesicles on an erythematous base



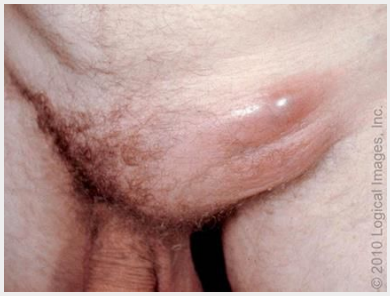
Penile chancre of primary syphilis
The syphilitic chancre is classically a single, indurated, well-circumscribed painless ulcer.



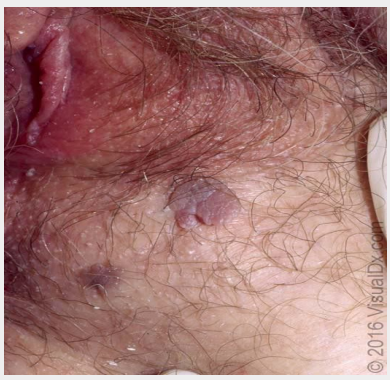
Female genital herpes simplex virus
Herpetic lesions classically begin as one or more grouped vesicles on an erythematous base



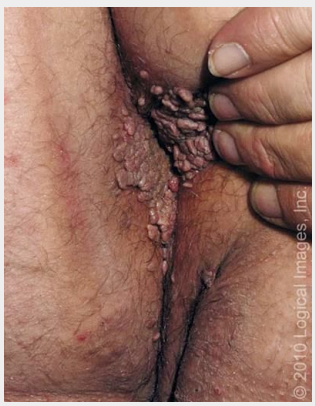
Gram stain of gonococci in urethral discharge.
Gram stain of purulent exudate from the male urethra (x1000) shows polymorphonuclear leukocytes containing numerous intracellular gram-negative diplococci. As expected, Neisseria gonorrhoeae grew from this specimen.



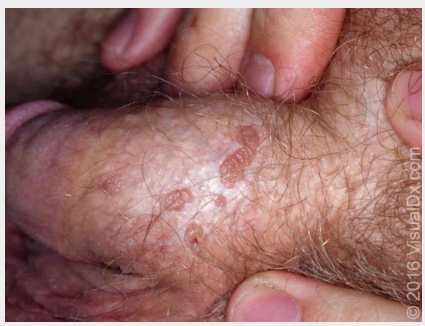
Inguinal lymphadenitis



Condyloma acuminatum on the vulva.

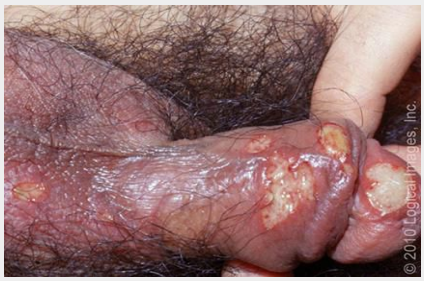


Perianal condyloma acuminatum

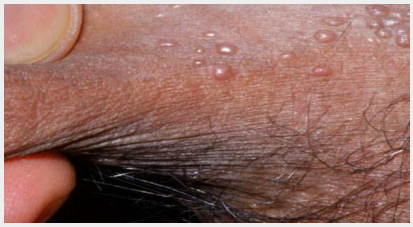


Verrucous papules and plaque at base of penis.
Condyloma acuminatum

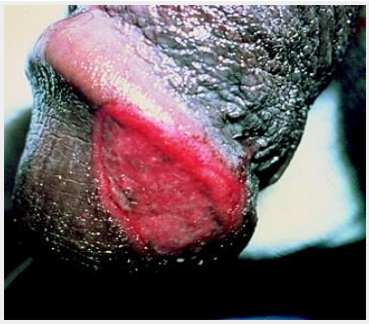
Pictures & Notes



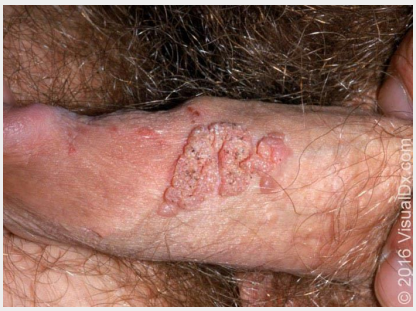
The genital lesions of chancroid
The ulcers associated with chancroid begin as papules that go on to ulcerate. The ulcers are characteristically deep and ragged with a purulent, yellow-gray base, and an undermined, violaceous border.



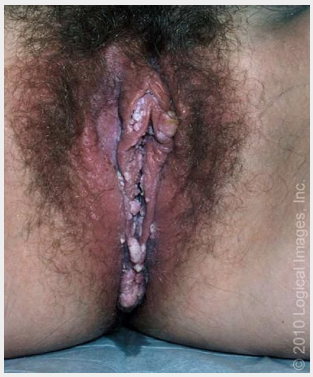
Multiple papules on the penis.



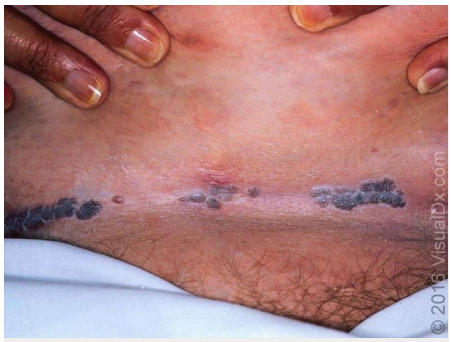
Fixed drug eruption. An oval erosion on the glans penis occurred in this patient who was taking minocycline. According to the patient, an identical lesion appeared when he was given minocycline previously.



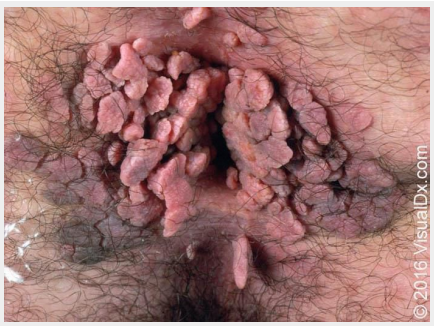
Verrucous plaque on the penis.
Condyloma acuminatum



Condyloma acuminatum involving vulva, vagina, and perianal region



Suprapubic condyloma acuminatum.



Perianal verrucous papules and plaques.
Condyloma acuminatum

Sample contagious diseases notification form

Speculum

Lecture Quiz

Q1: 28-year-old came to you to see the result of the HIV that he did last week, he had an outside marriage sex 4 months ago, the result came negative What is the next step?

A. Confirm using western blot test
B. Reassure the patient and no further test
C. Repeat the screening test after 3 months
D. Order viral load

Q2: Young male complaining of an ulcer (dissolved) on his penis shaft it comes when he traveled abroad what is the diagnosis?

A.Syphilis
B.Herpes
C.Chancroid
D.HIV

Q3: A 29-year-old man who travels frequently outside the kingdom and is sexually active presents with three days history of urethral discharge. What are the most likely diseases should be included in his management?

A. Chlamydia trachomatis and herpes genitalis
B. Neisseria gonorrhea and herpes genitalis
C. Neisseria gonorrhea and Chlamydia trachomatis
D. Syphilis and Chancroid

Q4: A 26-year-old single man presents to your office complaining of a painless ulcer that formed on his penis 3 months ago. The ulcer is healed but an erythematous rash on his palms and soles of feet has recently developed.
What is the most likely diagnosis?

A. Behcet's disease.
B. Chancroid
C. Reiter's syndrome
D. Syphilis

Q5: A 32-year-old man presents with recurrent oral and genital ulcers. He also had arthralgia. Recently he was administered a tetanus vaccination and developed a sterile abscess at the site of injection. Which of the following is your diagnosis:

A. Behcet's disease
B. Chancroid
C. Systemic herpes
D. Syphilis

Answers: Q1:B | Q2:B | Q3:C | Q4:D | Q5:A

THANKS!!

Obtained and edited from Team 437, by:

- Khayyal Alderaan
- Sultan Alsowiegh
- Abdulaziz AlGhamdi

Original creators:

Special thanks to..
437 team

Team Leader:
Raed Alojairy

Send us your feedback:
We are all ears!