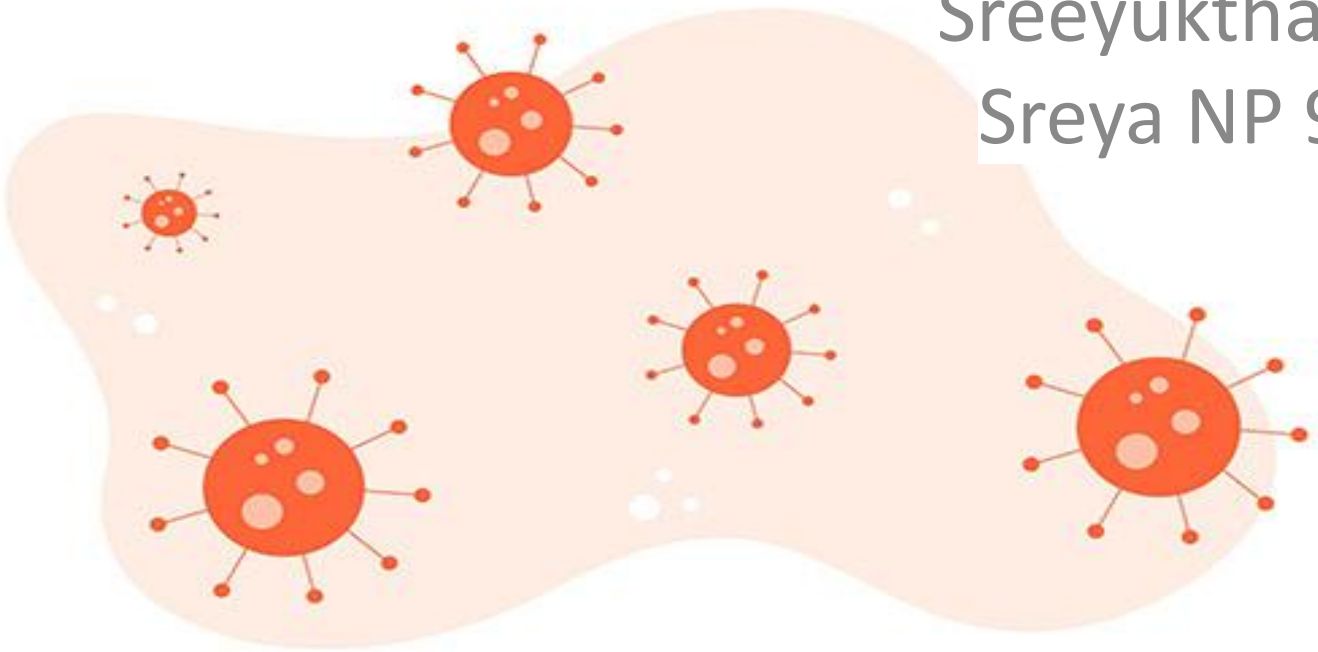
Sexually transmitted disease in female

Sreeyuktha 91
Sreya NP 92



Introduction

- Can lead to PID, infertility and ectopic pregnancy if fallopian tubes are involved
- Viral infections can cause vulval and cervical cancers
- Obstetric complications like recurrent pregnancy loss, intrauterine fetal death
- Vertical transmission in syphilis and HIV

Types

- Bacterial – syphilis, gonorrhoea, chlamydia, lymphogranuloma, chancroid
- Viral - Human papilloma virus, herpes simplex virus, HIV
- Protozoa - trichomonas vaginalis
- Fungal - candida
- Infestations- scabies, pediculosis

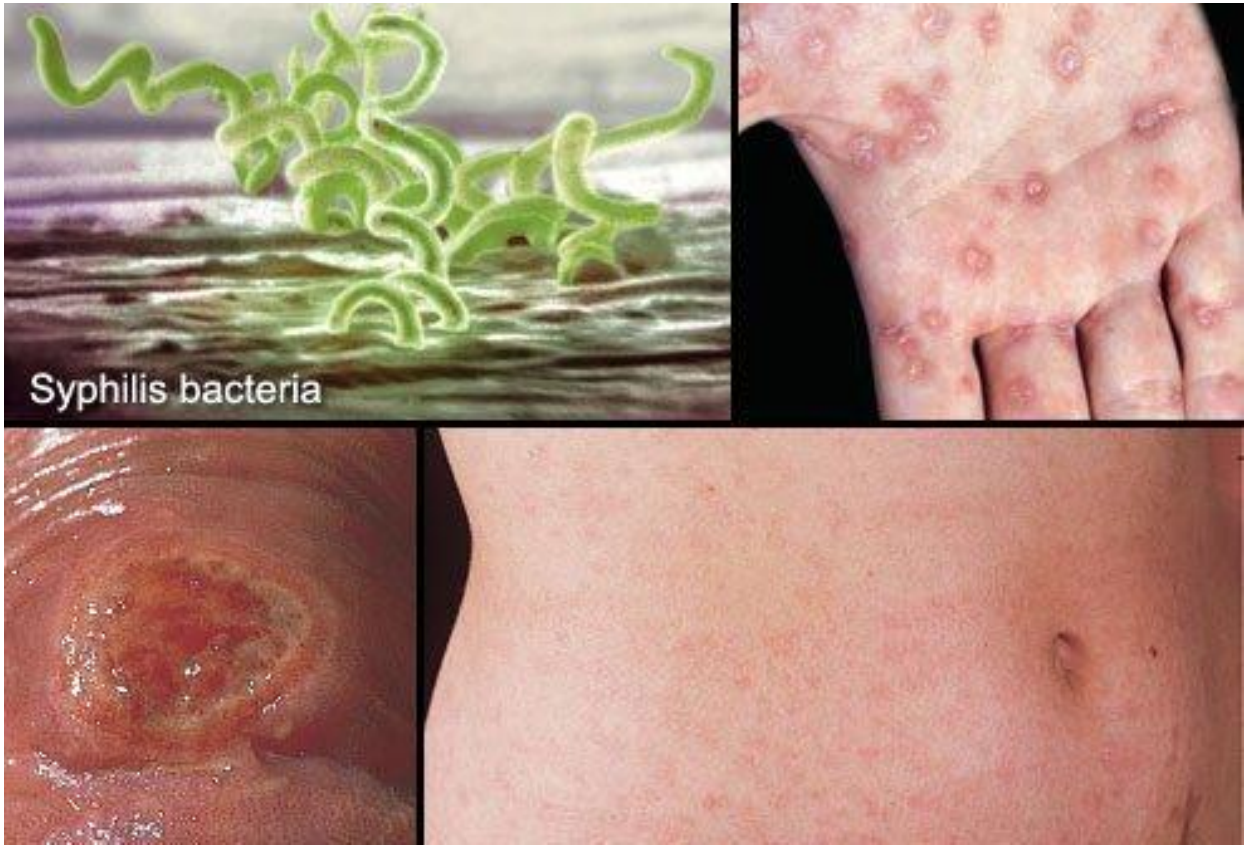
Syphilis

- Caused by motile spirochete Treponema pallidum
- STD, humans are natural hosts
- Spread by contact with broken skin/intact mucous membrane
- Most frequent entry sites in female-vulva, vagina, cervix

Primary syphilis – clinical features

- Classic lesion is chancre, appears within 9-90days from first exposure
- Macular lesions become papular and then ulcerates
- Painless, firm ulcer with punched out base and rolled edges
- Painless, discrete inguinal lymphadenopathy

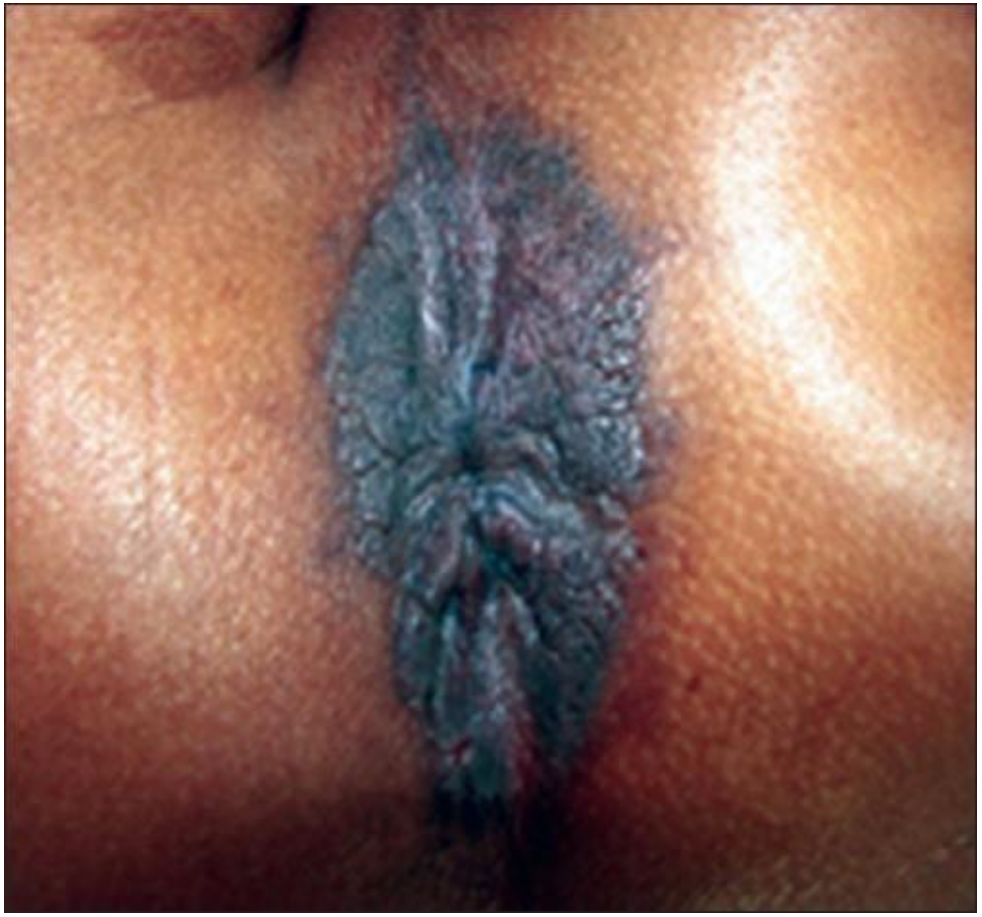
- Heals spontaneously in 3- 6 weeks



Secondary syphilis

- Widespread dissemination of spirochete
- Systemic manifestations like malaise, head ache, loss of appetite, sore throat
- Generalised symmetric asymptomatic maculopapular rash on palms and soles
- Generalised lymphadenopathy in 50 % cases

- Condyloma lata - classic finding
- Highly contagious exophytic broad outgrowth that ulcerate, seen in vulva, perianal area and upper thigh
- After 2-6 weeks passes into latent syphilis



Condyloma lata

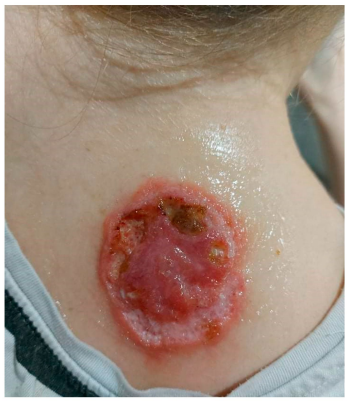
Latent syphilis

- No clinical manifestation present
- Serological test is + ve
- Lasts for 2-10 weeks
- Early latent: <1 year
- Late latent: >1 year
- May progress to tertiary syphilis

Tertiary syphilis

- Syphilis if untreated, leads to complications in a third of affected patients, 5-20 years after chancre has disappeared
- Manifestations of diffuse organ involvement

1. Neurosyphilis - meningitis, tabes dorsalis or paresis, mental disease
2. Cardiosyphilis - valvular disease, aortitis, aneurysm
3. Skin manifestations like gumma

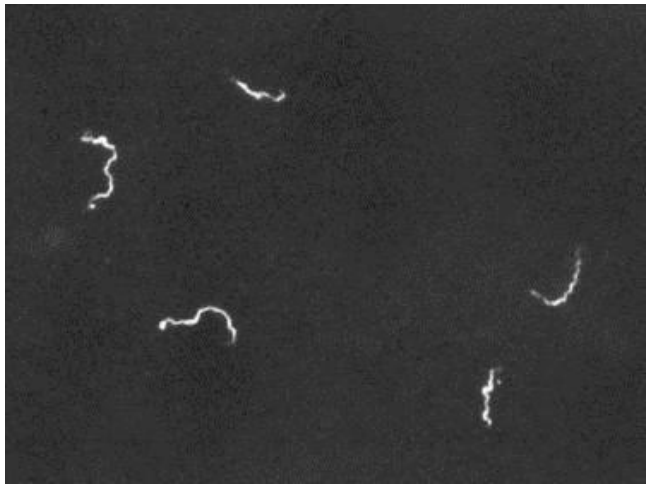


Lab investigations

- Primary syphilis -

Dark field microscopy of chancre scrapings reveal spirochetes

VDRL –ve



- Secondary syphilis -

Dark field microscopy of scrapings from condyloma lata reveal spirochetes

VDRL +ve

Immunofluorescent technique available

- Tertiary syphilis -

VDRL +ve

Lumbar puncture and examination of CSF in neurosyphilis

- Confirmatory tests - Flourescent titre antibody absorption test (FTA), Treponema pallidum microhaemagglutination assay(MHA-TP)
- Biopsy to rule out tubercular and cancerous ulcer
- PCR is available

Management

- Screen for other STDs and HIV
- Counselling of expected course of disease, risk of fetal transmission and its sequelae in case of pregnancy-Spontaneous abortion, IUFD, Preterm labor, Hydrops fetalis, Stillbirth
- Treat all sexual partners

- Specific treatment- 2.4 million units of benzathine penicillin IM
- If latent disease is present for over a year, dose of penicillin is repeated weekly for 3 weeks
- Barrier contraception

Gonococcal vulvovaginitis

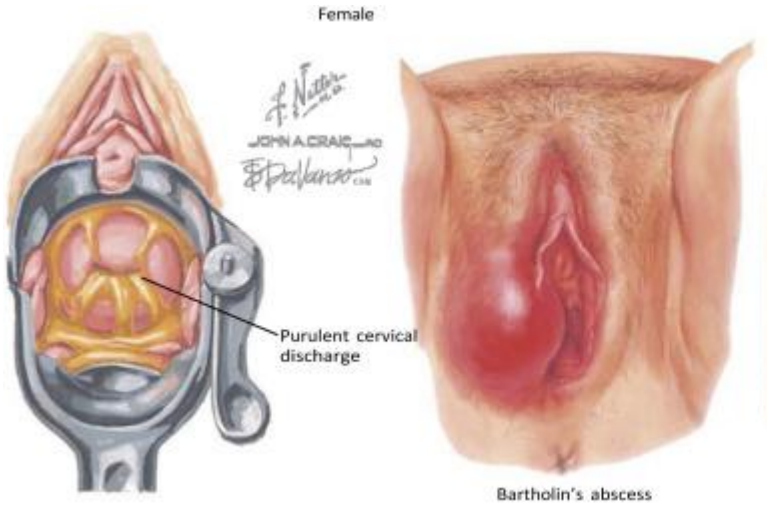
- Caused by gram –ve intracellular diplococci, Neisseria gonorrhoea
- Incubation period is 2-10 days
- Vaginal squamous resistant to gonococcal infection
- Principal sites of invasion-
    - columnar epithelium of genital tract
    - transitional epithelium of urethra
    - Bartholin’s gland

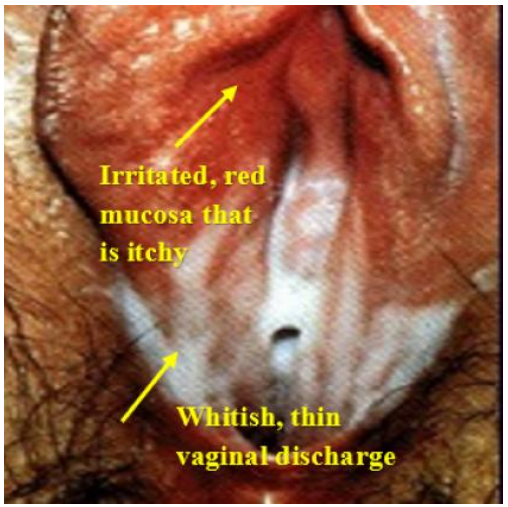
- Gonococci ascends in a piggy back fashion attached to sperms to reach fallopian tube

Early clinical findings

- Asymptomatic infection in pharynx, cervix, anal canal and rectum
- Vulvovaginal and perineal infection-
  inflammation, discharge, irritation causing pruritis, urinary frequency and dysuria, dyspareunia, rectal discomfort

- O/E - swollen painful external genitalia, purulent vaginal discharge, erythema around external urinary meatus, opening of Bartholin's duct, vaginitis and endocervicitis





Late clinical findings

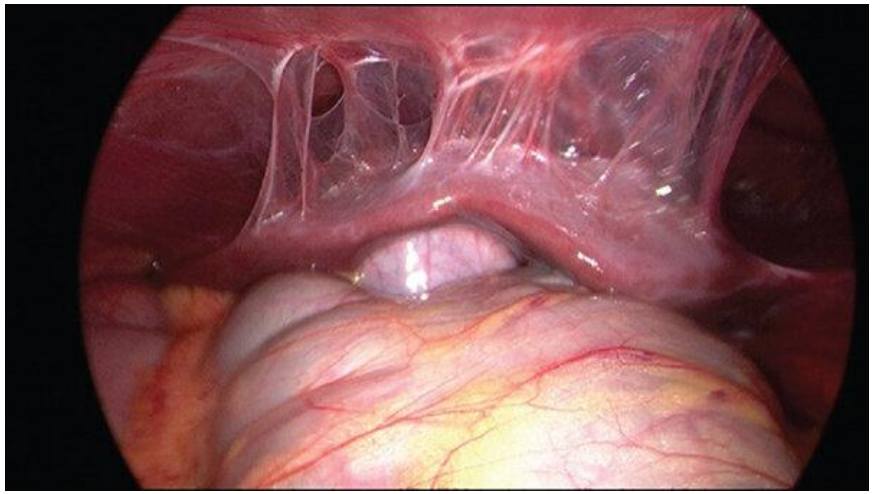
- Bartholinitis, Bartholin's abscess, Bartholin's cyst
- Tuboovarian abscess, pyosalpinx, hydrosalpinx
- Disseminated infection – polyarthralgia, tenosynovitis, dermatitis, pericarditis, endocarditis, meningitis, ophthalmologic manifestations- conjunctivitis, uveitis

- c/c pelvic pain, dysmenorrhoea, menorrhagia, infertility, fixed retroversion, dyspareunia
- Neonatal ophthalmitis in newborns of infected mothers

Lab investigations

- Gram staining of smear from suspicious discharge- terminal urethra and endocervix
- Culture from urethra and cervix on Thayer-Martin medium or blood agar and McLeod chocolate agar in 5% CO2 moist atmosphere
- Complement fixation tests, PCR staining

- NAAT from urine and endocervical discharge- 95% sensitive
- Laparoscopy reveals tubal disease and band of fibrous tissue on right side stretching from fallopian tube to under surface of liver(Fitz Hugh Curtis syndrome)



Complications

- PID
- Pyosalpinx
- Tuboovarian abscess
- Pelvic abscess
- Infertility
- c/c pelvic pain
- Dyspareunia
- Dysmenorrhoea
- Menstrual disturbances

Treatment

- Inj. Cefoxitin 2gm IM+ probenecid 1gm orally followed by T. Doxycycline 100mg bid x 14 days
- Oral ciprofloxacin, levofloxacin or ofloxacin 400 mg bid followed by oral clindamycin 450mg qid or metronidazole 500 mg bid x 14 days
- Treat the partner
- Surgery for drainage of abscess, excision of cyst

Chlamydia

- Common in young sexually active women
- Account for 1% of all abortions, can cause preterm labour, IUGR
- Incubation period 6-14 days
- Small gram – ve bacteria, obligate intracellular parasite
- Often silent , asymptomatic infection
- Salpingitis, tubal damage and infertility

- Rarely vaginal discharge, dysuria, frequency of micturition and at times cervicitis
- Rarely Reiter's syndrome with arthritis, skin lesions, conjunctivitis
- Causes perihepatitis and Fitz Hugh Curtis syndrome
- Newborn suffers conjunctivitis, nasopharyngitis, otitis media, pneumonia

Diagnosis

- Use of fluorescein conjugated monoclonal antibody in immunofluorescence tests on smears prepared from urethral and cervical secretions allows direct diagnosis of infection
- ELISA to detect antigen
- Chlamydia can be cultured from cervical tissue in 5 -15 %

- Polymerase and ligase chain reaction are fast, highly sensitive and specific(96%) – gold standard for diagnosis
- Uripath UK is simple rapid and near patient test
- Urine culture
- Urine for PCR
- NAAT

Treatment

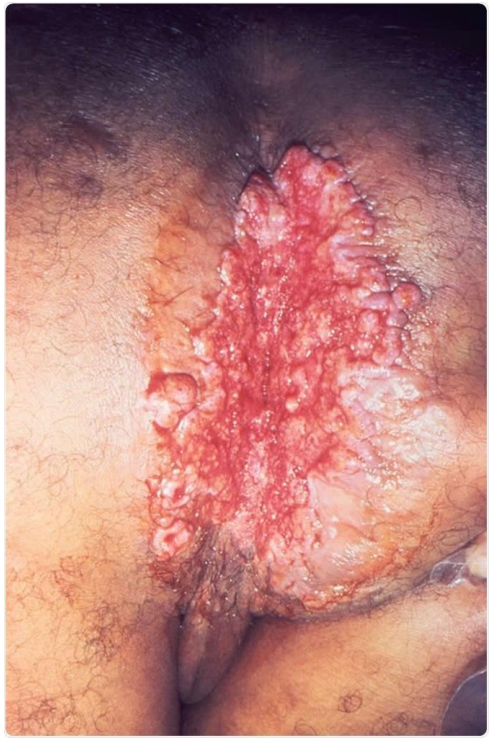
- Tetracycline 500mg and clindamycin 500mg 6h for 14 days
- Cefoxitin + doxycycline 100mg bd x14 days
- Amoxycillin 500mg tid x 7 days
- Erythromycin 500mg tid x15 days
- Azithromycin 1gm orally single dose

Granuloma inguinale

- Or Donovanosis
- Causative organism is Calymmatobacterium granulomatis
- Gram –ve bacillus
- Highly contagious
- Incubation period is 1-12 weeks

Clinical features

- Painless nodule which later ulcerates
- Forms beefy red multiple painless ulcers that tend to coalesce
- Vulva is progressively destroyed
- Minimal lymphadenopathy can occur



Diagnosis

- Microscopic examination of smears from lesion / biopsy reveals pathognomonic intracytoplasmic Donovan bodies and clusters of bacteria with a bipolar (safety-pin) appearance
- Blue-black staining organisms seen in cytoplasm of mono-nuclear cells

Treatment

- Tetracycline 500mg Q6h x2-3 weeks or
- Chloramphenicol 500mg tid x 21 days
- Excision may be required if medical treatment fails

Lymphogranuloma venereum

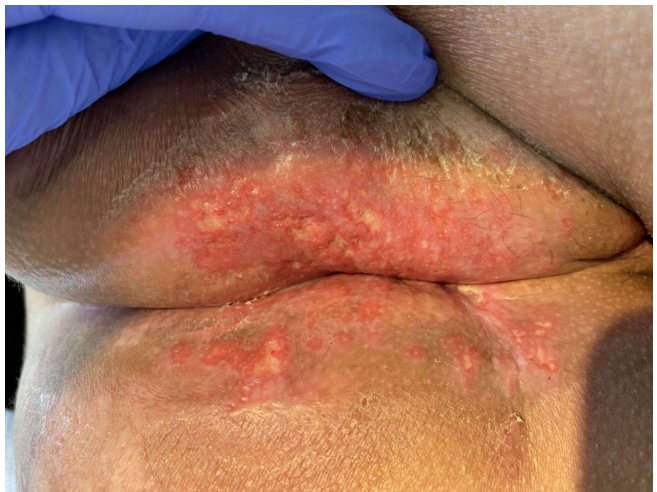
- Affects men more than women
- Incubation period 7-21 days
- Causative organism is Chlamydia trachomatis
- Gram negative intracellular bacteria
- Organism is carried by lymphatic drainage from genital lesion to the perirectal , both inguinal and pelvic lymph nodes

LGV

- Rectal involvement is common
- Proctocolitis and rectal strictures common
- Drainage is primarily to inguinal nodes leading to bubo formation
- This may burst, ulcerate or cause sinus
- Affects urethra, perineum cervix

Clinical features

- Painless vesiculo pustular eruption that heals spontaneously
- After some weeks , sequelae of lymphatic spread begins with hardly any clinical manifestations
- Fever, headache, malaise, arthralgia



Diagnosis

- Mainly a clinical diagnosis
- Frei test
  delayed skin hypersensitivity to the antigen
  becomes +ve 2-8 weeks after primary infection
- Complement fixation test – more sensitive
- Culture
- Inclusion bodies in the smear can be detected
- DNA probing specific

Complications

- Due to scar tissue formation
- Proctitis
- Severe stricture formation leading to intestinal obstruction
- Rectovaginal fistula following stricture formation
- Vulvar cancer

Treatment

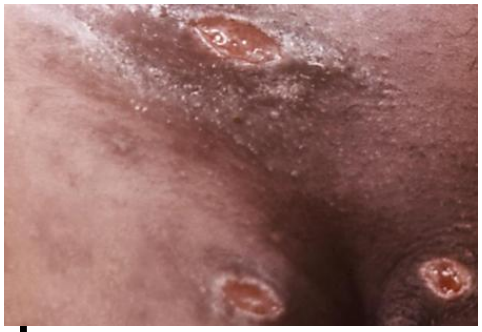
- Tetracycline 500mg Q6h or doxycycline 100mg bid x3 weeks
- Erythromycin 500mg Q6h x 3-6 weeks
- Aspiration of fluctuant bubo and palliative surgical intervention may be required
- Partner should be treated

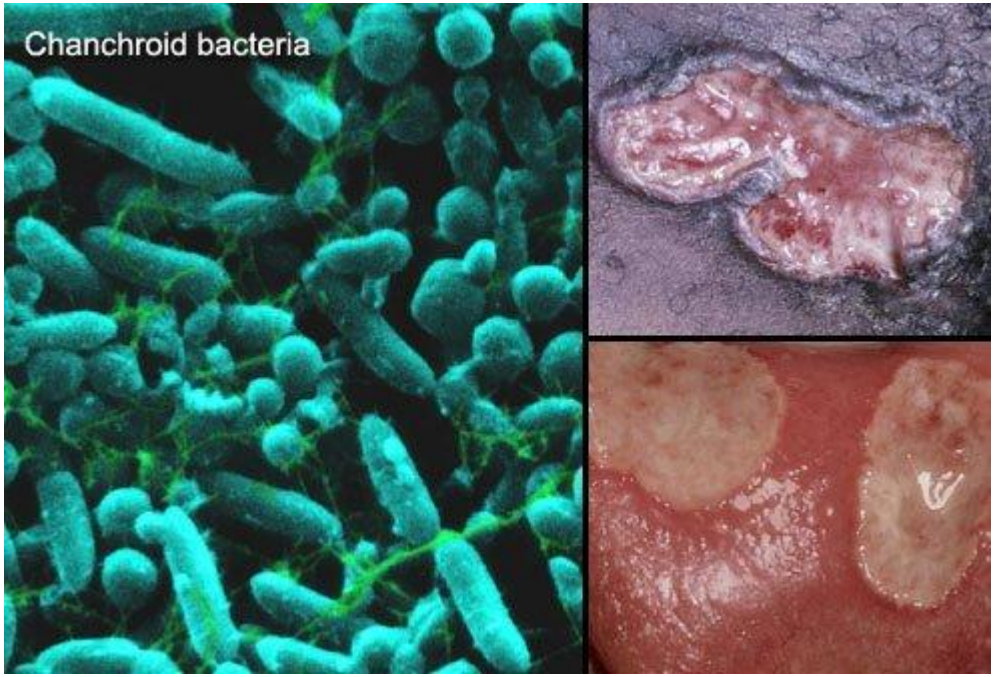
Chancroid (soft sore)

- Caused by gram negative bacilli Haemophilus ducreyi
- Affects males more than females
- Facilitates spread of HIV infection
- Highly contagious
- Needs broken or traumatised skin for entry
- Incubation period is 3-6 days

Clinical features

- Small papule that develops into a painful pustule that ulcerates
- Multiple lesions of various stages of development seen
- Ulcers are shallow, ragged and painful
- U/L inguinal lymphadenopathy in 50 %
- Ulcers are sharply demarked without induration
- 10 % associated with syphilis or herpes





chancroid

Diagnosis

- Gram staining of purulent discharge from the lesion or aspirate from lymph node - shows typical extracellular school of fish appearance
- Culture
- ELISA
- PCR staining

Treatment

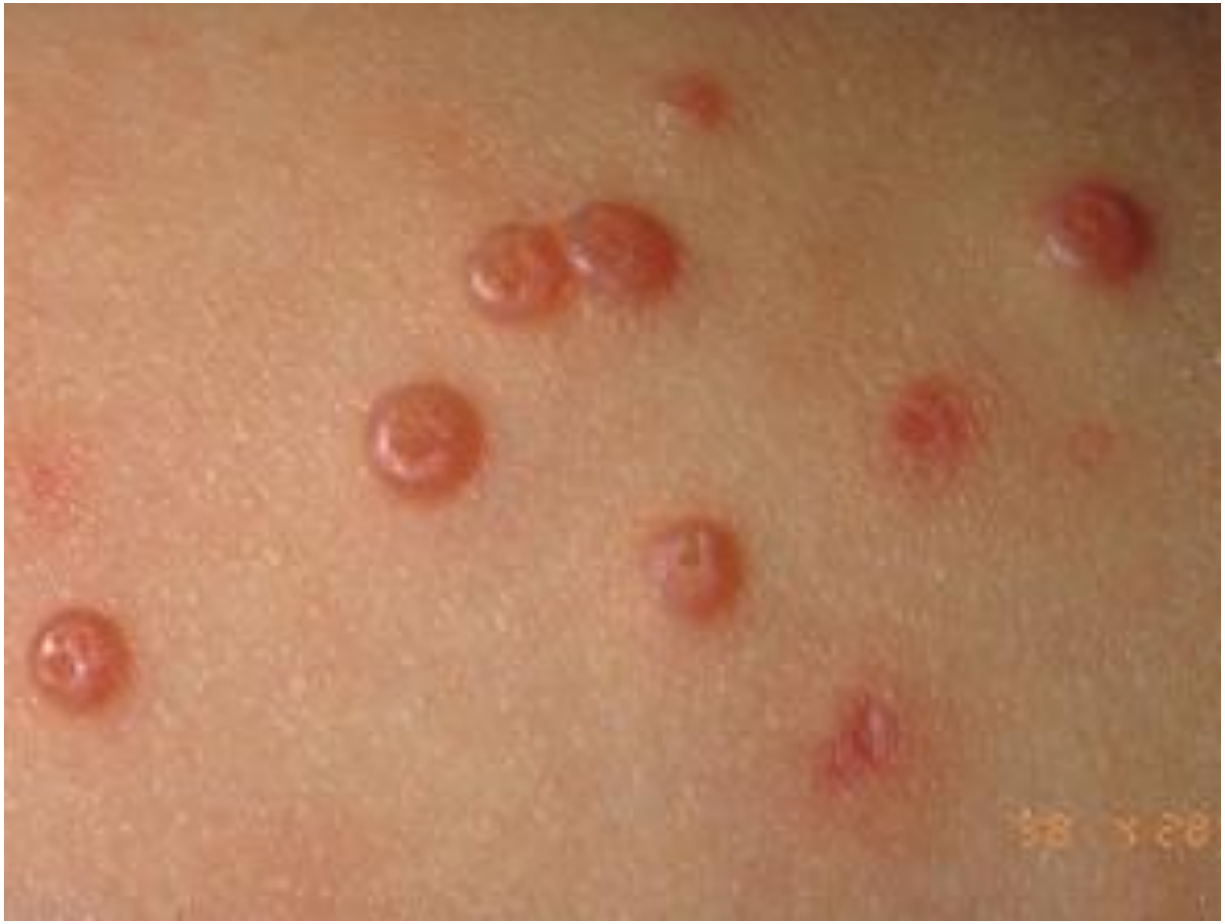
- Azithromycin 1 gm orally
- Erythromycin 500mg Q6hx 7 days
- Screen for other STDs

Molluscum contagiosum

- Benign viral infection caused by pox virus
- Spreads by sexual ,nonsexual contact or by autoinoculation
- Incubation period is several weeks to months
- Clinically –

  crop of small domed vesicles with central umbilication measuring 1-5 mm

  white waxy material can be expressed from it



Molluscum contagiosum

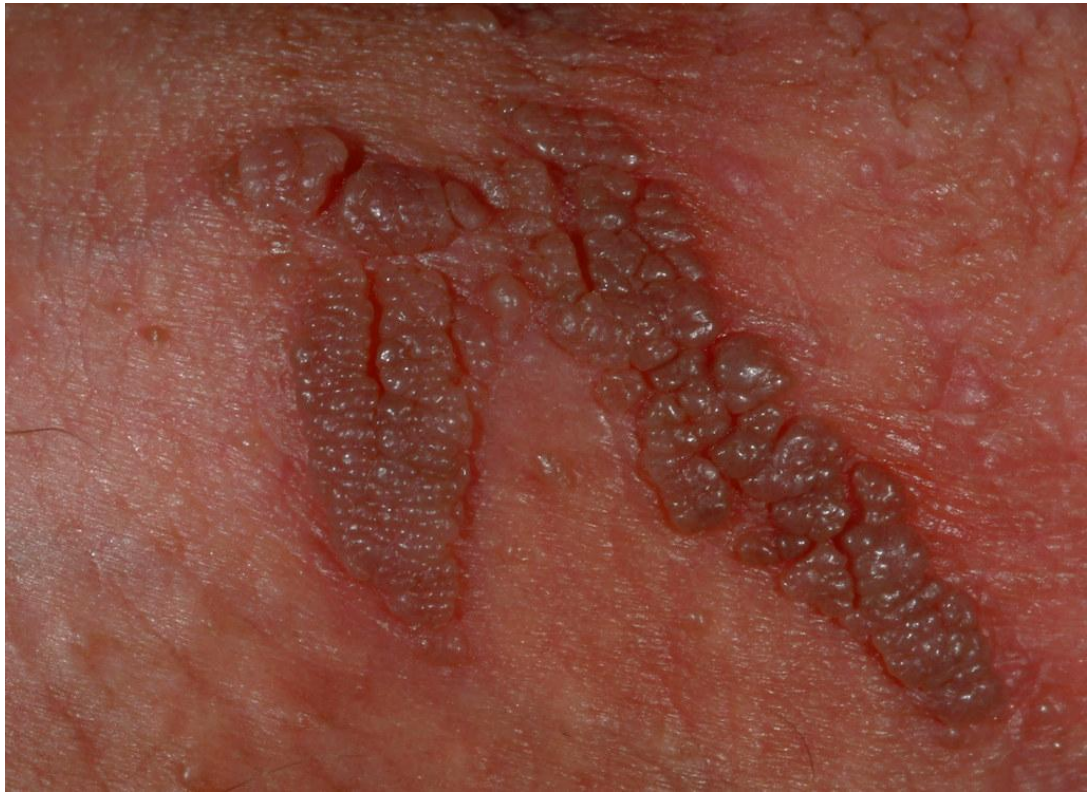
Diagnosis and treatment

- Giemsa staining of discharge reveals intracytoplasmic molluscum bodies

- Treatment – evacuation of white material , excision of nodule with a dermal curet and treatment of base with Monsel's solution or 85 % trichloracetic acid
- Cryotherapy and electrocoagulation can be considered

Condyloma acuminata

- Also called venereal warts
- Caused by HPV, small DNA double ended virus
- Warts over vulvar area
- Verrucous growths may appear discrete or coalesce to form large cauliflower like growths
- Affects skin of labia majora, perineum, perianal region and vagina
- Vaginal discharge , OCP and pregnancy favour growth



Condyloma acuminata

Condyloma acuminata contd…

- HPV 6, 16. 18 are implicated in the development of condyloma acuminata and cancers of cervix and vulva
- Presence of koilocytes – histological marker of virus
- Perinuclear halo, organophilic cytoplasm acanthosis, c/c inflammatory infiltrate are other histologic features
- Dysplasia may be seen in warts of elderly women

Natural course

- In young women , infection is transient in 90% and disappears without alteration of DNA
- In older women it often persists and progresses to carcinoma in situ in 30% in 1-3 years and cancer of cervix , both adenocarcinoma and squamous cell cancer
- Condyloma is associated with vulval, vaginal and cervical cancers in 20% cases

Diagnosis

- Vulva is first smeared with water soluble KY jelly and then treated with dilute acetic acid. Vascular pattern studied
- Then stained with 1% toluidine blue. Abnormal nuclei retains blue dye while normal skin allows the dye to be washed off
- Biopsy taken from abnormal areas

Diagnosis contd …

- Colposcopy

  when acetic acid is applied to cervix, condylomas appear as patches of raised projection of acetowhite epithelium with speckled appearance

Diagnosis contd…

Cytology – koilocytes with perinuclear halo, multinucleation and organophilic cytoplasm

Histology –acanthosis, c/c inflammatory infiltration, dysplasia cells

Viral tests –DNA test, hybridisation, PCR staining,CD4 count shows immune functioning

Treatment

- Young women with flat condylomas – observed for 6 months especially during pregnancy. Lesions often resolve spontaneously
- Local application of podophyllin 25% in alcohol or podophyllin 20 % in tincture benzoin for 6 hours daily or 25% trichloracetic acid plus 5% fluorouracil causes sloughing of small condyloma warts in 3-4 days in 70-80 % cases

Treatment contd…

- Treatment repeated weekly as warts recur at 3-6 weeks interval
- Local podophylline cream is also available
- Contraindicated in 1st trimester of pregnancy as drug is cytotoxic causing abortion and peripheral neuropathy
- Contraindicated in vaginal and cervical lesions because of severe inflammatory reaction

Treatment contd..

- Larger lesions removed by diathermy loop or laser ablation
- Surgical excision of localised growth is another alternative
- Associated syphilis or malignancy excluded
- Husband should be treated simultaneously or protected from infection (use of condoms)
- Vulval or vaginal wart during pregnancy mandates CS to avoid papilloma laryngitis in neonate

Treatment contd…

- Interferon local ointment or cream or intralesional injection
- Interferon inhibits viral and cellular growth
- Warts can be removed by cryosurgery, diathermy or laser
- Biopsy is mandatory to rule out malignancy
- Pap smear to rule out cervical malignancy

Treatment contd…

- Vaccines to adolescent girls and boys before exposure to sexual activity are available
- Cervarix- bivalent vaccine against HPV 16 & 18 given at 0, 1, 6 months
- Gardasil- quadrivalent vaccine against HPV 6, 11, 16, 18 given at 0, 2, 6 months
- Expensive

HIV

- First appearance in 1981
- Virus discovered in 1983
- AIDS is the clinical end stage of HIV infection resulting in severe irreversible immunosuppression, acquisition of various opportunistic infections and cancers
- HIV – small RNA retrovirus
- HIV I and 2 are members of lentivirus subfamily

HIV contd…

- Virus gains entry into cell through CD4 receptor on surface of T cells, transcribes genomic RNA into DNA and then integrates into the DNA of host cell.
- It replicates within host cell
- When cell death occurs, HIV viral load is released in large numbers
- HIV 1 is more severe, HIV 2 is slow progressive

HIV contd…

- Following initial infection , antibodies develop in 2-3 weeks and the person becomes seropositive
- At times it may take as much as 6 months (window period)

Clinical features

- Asymptomatic phase lasting for 8-10 years
- Median time from acquiring infection to full blown AIDS is 10 years
- Clinical features –

  Generalised lymphadenopathy

  Unexplained fever

  Malaise, fatigue , arthralgia, weight loss,

Clinical features contd…

- Oral lesions
- Reactivation of herpes zoster
- Recurrent oral and genital herpes, candidiasis, skin infection
- Thrombocytopenia
- Molluscum contagiosum, condyloma acuminata, basal cell carcinoma

Clinical features contd…

- Opportunistic infection like Pneumocystis carinii pneumonia, toxoplasmosis, cytomegalovirus infection
- Tuberculosis
- Peripheral neuropathy, encephalopathy, meningitis, myopathy, dementia
- Kaposi’s sarcoma, ca cervix
- Perinatal transmission

Diagnosis

- ELISA to detect specific antibodies against core or envelope antigen
- Confirmation by western blot
- Clinical progress monitored based on CD4 counts

  CD4 counts >500/ml no evidence of immunosuppression

  CD4 counts 200-500/ml – likely to develop symptoms

  CD4 counts <200/ml – present with oral thrush , unexplained fever

Treatment - Drugs

Combined therapy- HAART

Zidovudine 300mg bd

Lamivudine 150 mg bd

one of the above drugs , plus one of the following

Tenofir 300mg daily

Nelfinavir 1250 mg bd

Lopinavir /ritonavir 3 capsules bd or indinavir 800mg daily

Treatment

- Successful treatment does not prevent transmission
- It definitely reduces the viral load and reduces risk of transmission

Treatment contd…

- Detect other STD diseases and treat them
- Prevent horizontal transmission using barrier contraceptives
- Avoid pregnancy and vertical transmission by dual (barrier + hormonal) contraception
- Regular Pap smear
- Vitamin A improves immunity
- Hepatitis B vaccination

Genital herpes

- Recurrent STD infection
- Double stranded DNA of herpes simplex virus
- 80 % type 2 infection
- Incubation period 3-7 days
- HSV type 1 in 30% vulval lesions

Clinical features

- Primary infection

constitutional symptoms, fever, malaise, vulval paresthesia

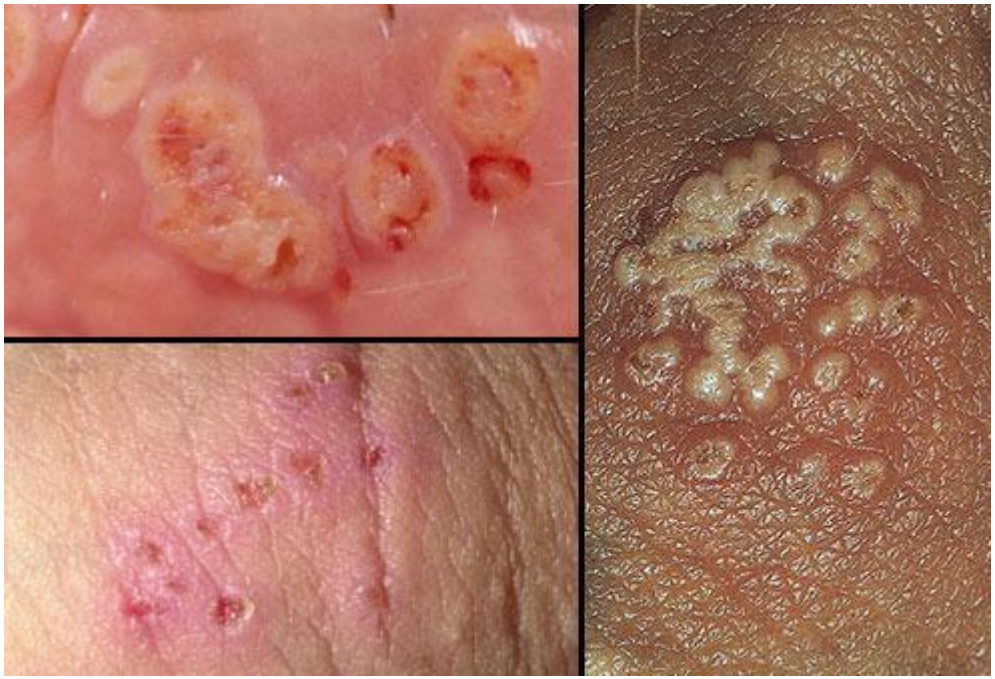
vesicles on vulva resulting in shallow, painful ulcers

multiple crops of vesicles and ulcers in 2-6 weeks

lesions peak in 7 days, lasts for 2 weeks

Clinical features contd…

- Outbreak self limited
- Lesions heal without scarring
- Viral shedding continue for weeks



Recurrent herpetic outbreaks

- Shorter duration, milder in severity
- Prodromal symptoms of burning and itching in affected area
- Systemic symptoms absent
- 50 % have first recurrence in 6 months
- Latent herpes virus residing in dorsal root ganglia of S2, S3, S4 may get reactivated when immune system is compromised

Complications

- Encephalitis
- Urinary tract involvement- retention of urine
- Severe pain

Diagnosis

- Clinical inspection of lesions
- Viral cultures from swabs from base of vesicles are +ve in 90% cases
- NAAT –greater sensitivity in 6 weeks
- Biopsy- ground glass appearance of cellular nuclei, numerous small intracellular basophilic particles and acidophilic inclusion bodies
- Cytology- multinucleated giant cells
- Antibody detection in serum, PCR staining

Treatment

Aim –

- shorten duration of attack
- prevent complications
- prevent recurrences
- diminish risk of transmission

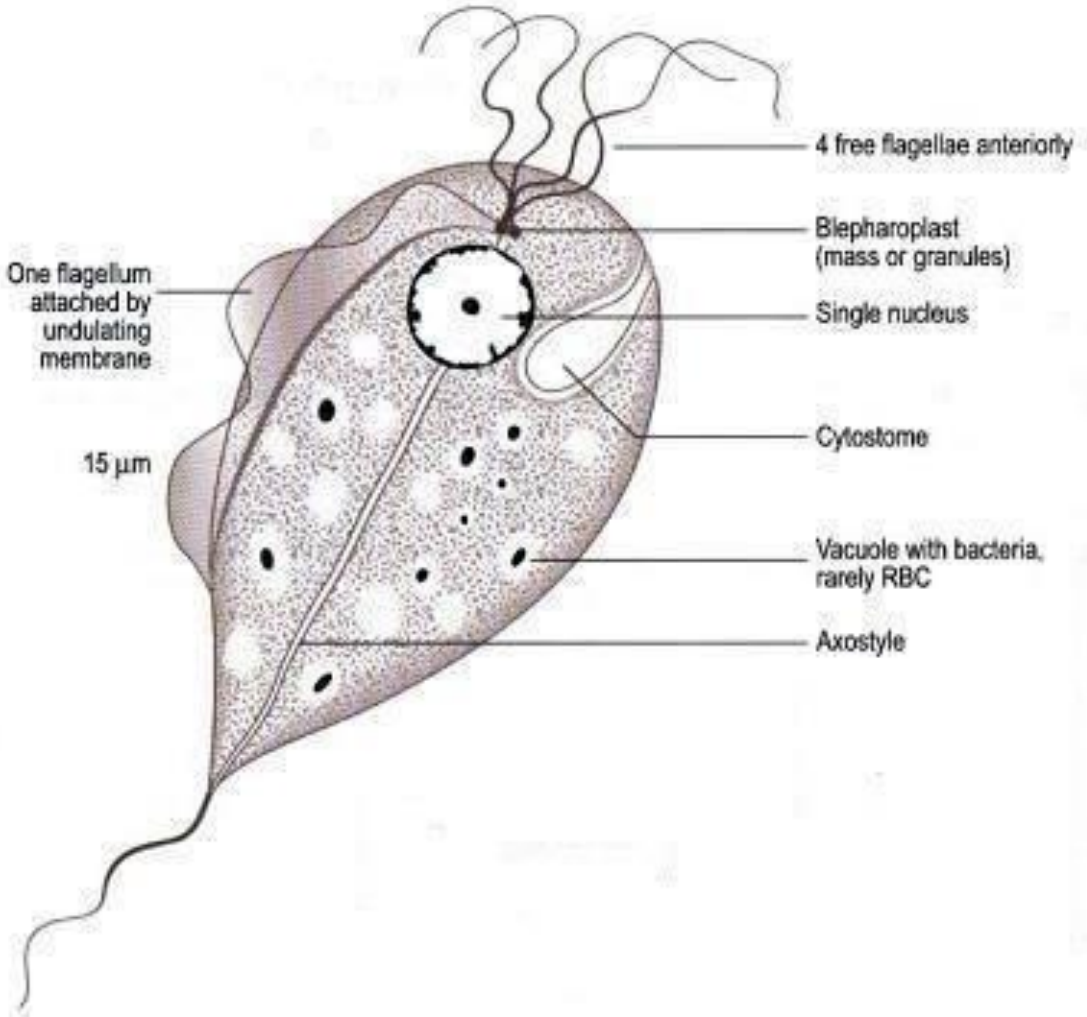
Treatment

- Virus cannot be effectively eradicated
- Primary outbreaks-
  oral acyclovir 200mg 5 times daily x 5 days
  local application of acyclovir cream
- Reduces duration and severity of attack
- Does not prevent latency or episodes of recurrence
- Abstinence till re-epithelialisation of lesion
- Caesarean section in presence of active lesion

Trichomoniasis

- Caused by Trichomonas vaginalis
- Actively motile anaerobic protozoan
- Has 4 anterior flagellae and 1 posterior flagella
- Posterior flagella is responsible for motility

Trichomonas vaginalis



Symptoms

- 20% asymptomatic
- Profuse, thin, creamy, or slightly green, irritating and frothy discharge
- Vaginal walls tender and angry looking
- Discharge causes pruritis and inflammation of vulva
- Multiple small punctate strawberry spots on vaginal vault and portio vaginalis of cervix (strawberry vagina)

Symptoms contd..

- Urinary symptoms – dysuria, frequency, low grade urethritis
- Abdominal pain , low back ache and dyspareunia if pelvic infection

Diagnosis

- Examination of fresh wet film preparation under microscope- motile trichomonas seen
- Gram staining
- Parasite can be cultured
- PCR and NAAT available
- Pap smear may show greyish blue pear shaped structure

Treatment

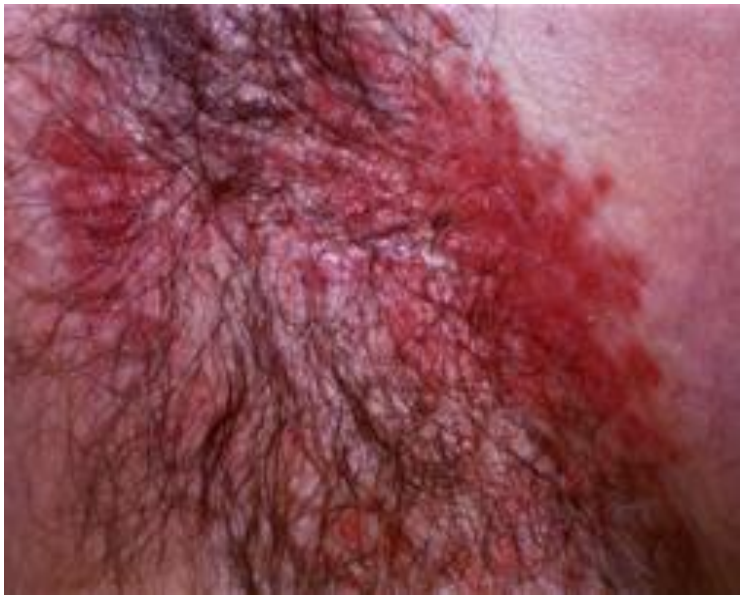
- Metronidazole 200mg tid x7 days for both partners
- Or 2gm metronidazole for 1 day only

Candidal (monilial) vaginitis

- Fungal infection caused by yeast like organisms called candida or monilia
- Commonest species is candida albicans which is gram +ve and grows in acid medium
- Risk factors- promiscuity, immunosuppression, HIV, pregnancy, steroid therapy, long term broad spectrum antibiotic therapy, OCP, DM, poor personal hygiene, obesity

Clinical features

- Pruritus vulva
- Vaginal irritation, dysuria
- Thick curdy white or flaky discharge
- P/S- vaginal wall congestion with curdy white discharge



Diagnosis

- Based on clinical findings
- M/C- smear of vaginal discharge treated with 10 % KOH solution – dissolves cellular debris , leaving mycelia and spores of candida
- Gram staining of discharge reveals candida
- Pap smear shows thick red stained hyphae and dark red spores
- Culture on Sabouraud’s agar or Nickerson’s media

Treatment

- Clotrimazole 100mg vaginal pessaries x7 days
- Or creams for 7-10 days
- Fluconazole 150 mg single dose
- Both partners should be treated
- Predisposing factor should be corrected
- Recurrent infection requires fluconazole orally 150mg every 72 hours x 3 doses and then weekly for few weeks

Infestations

Pediculosis pubis

caused by crab louse, intense itching in pubic area with vulvar rash

treatment – local application of 5 % permethrin cream, 2 applications 10 days apart or local application of gamma benzene hexachloride 1 % on 2 successive days

Infestations contd…

Scabies

- Affects flexure aspects of elbows, wrists, buttocks and external genitalia
- Intense burning with intermittent episodes of intense itching or burning
- May present as papules, vesicles or burrows
- Treatment –local application of 5% permethrin cream bd for 2 successive days

THANK YOU