

Sexually transmitted infections (STI)

- **I. classical – venereal diseases**

- 1) syphilis (lues)
- 2) gonorrhoea (clap, drip)
- 3) chancroid - ulcus molle
- 4) lymphogranuloma venereum
- 5) granuloma inguinale



- **II. non-venereal STDs**

1) Non-specific UGI - chlamydia,
mycoplasma, ureaplasma etc.
+ trichomoniasis

+ bacterial vaginosis

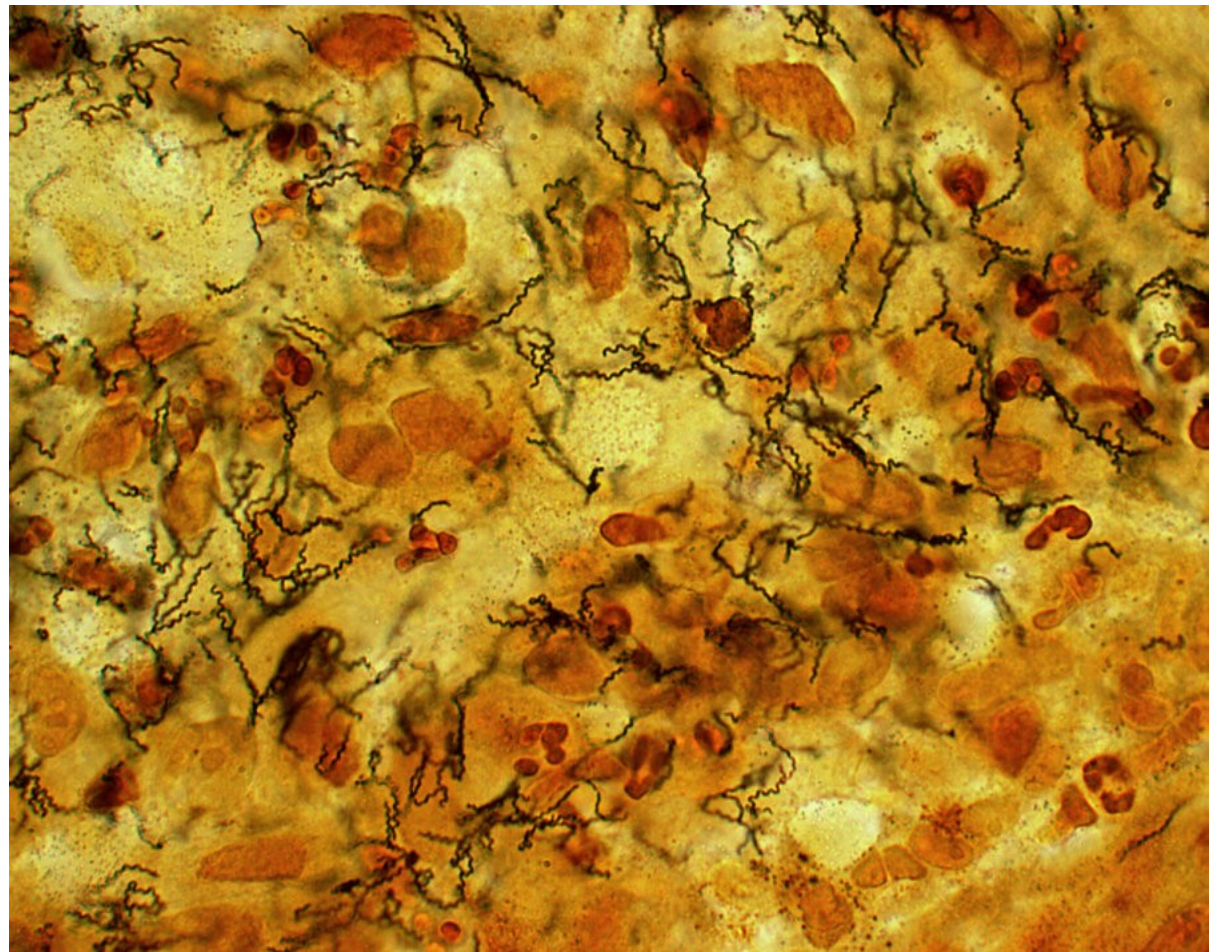
2) viral STD – HIV, hepatitis, genital herpes
genital warts, mollusca

3) parasitic – scabies, phthiriasis



1) Syphilis

Causative organism:
Treponema pallidum





Epidemiology

- transfer: sexual intercourse (acquired sy)
non-sexual transfer
(transfusion, injury)

from mother to child

(congenital sy)

- IP 21 days (9-90 d)



Primary syphilis

- after incubation period of 3 weeks
hard chancre – indurated base
sometimes atypical, multiple or
superficial (primary syphilitic lesion)
- after 4-5 days reg. **lymphadenopathy**
- after 2-3 w (within 8 w) chancre heals
with a scar
- sometimes latency follows

Typical chancre



Atypical multiple erosions



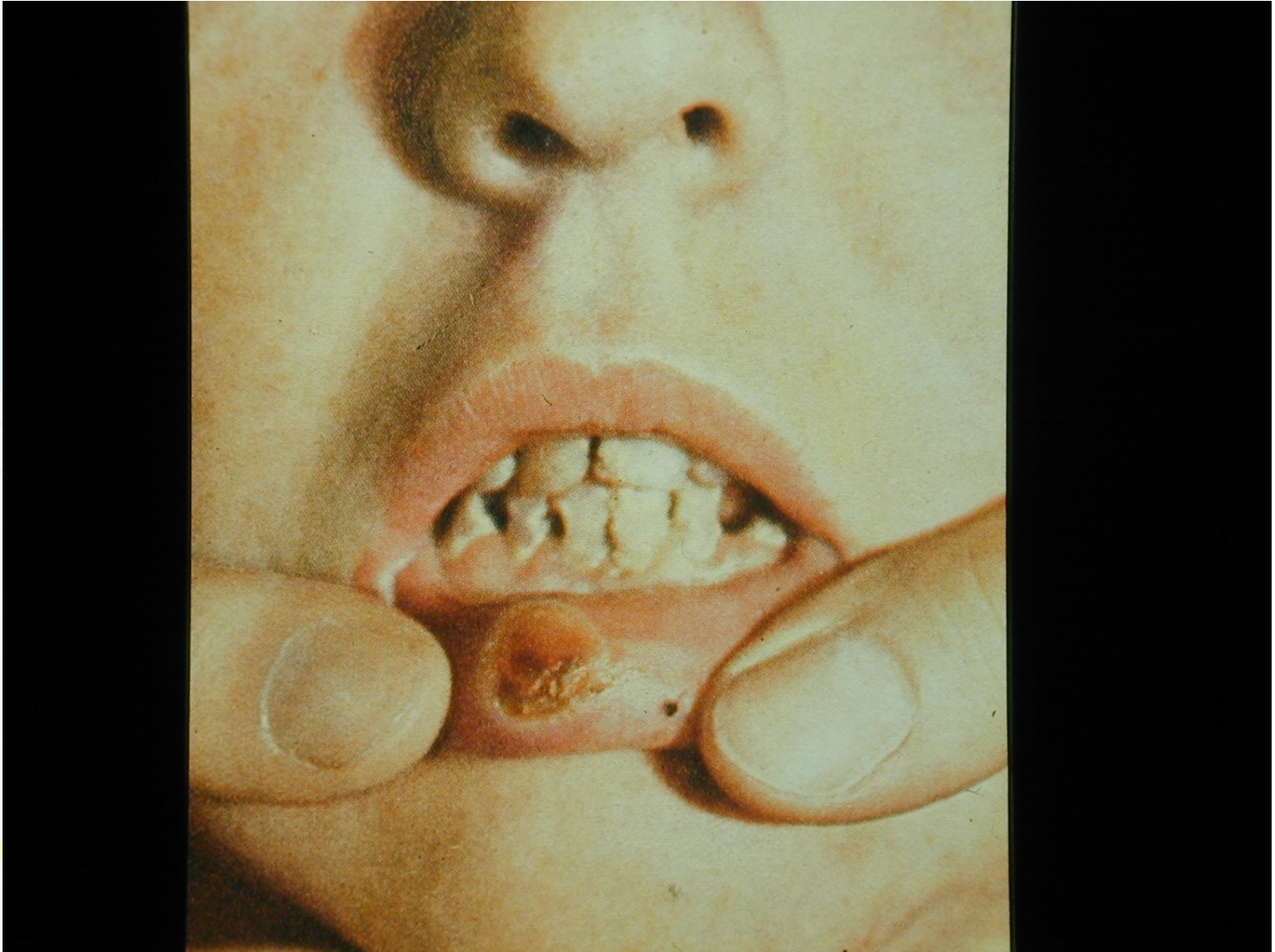
Multiple lesions



Primary syphilitis lesions in a female



Oral lesions



Oral lesions



Oral lesions





Perianal chancre





Secondary syphilis

- Starts usually after 9-10 th week,
 - untreated lasts for 5-6 months, then latency,
 - Recurrences are possible within 2-5 years
-
- Recurrent rashes (syphilids) - noninfectious
 - macular syphilid (roseola syphilitica)
 - papular/papulosquamous syphilid (lichen syphiliticus)
 - palmoplantar syphilid (clavi syphilitici)
 - papulocrustous, papuloerrosive syphilid, pustular syphilid
- 
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Roseola syphilitica



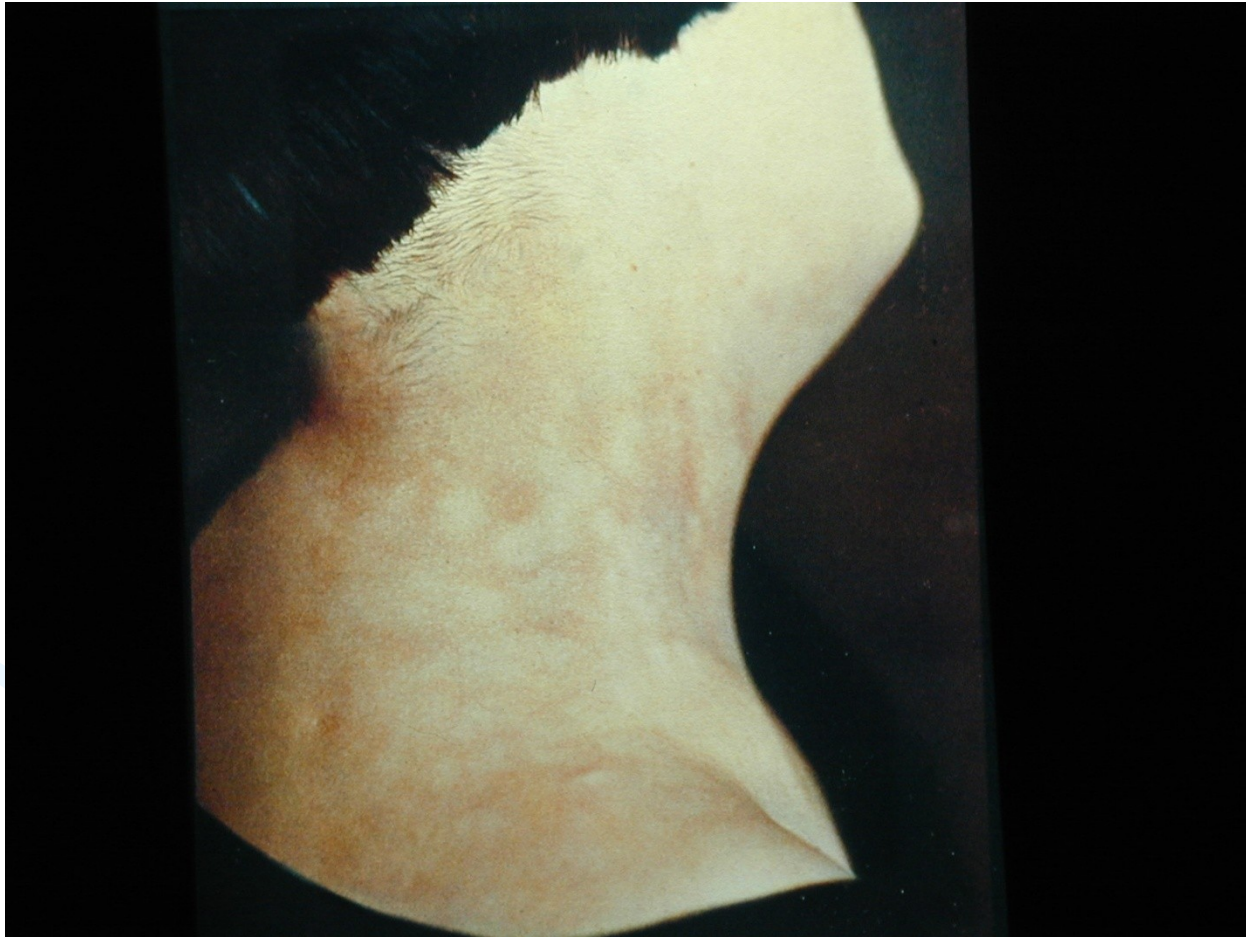
Lichen syphiliticus



Palmoplantar syphilid



Leucoderma syphiliticum

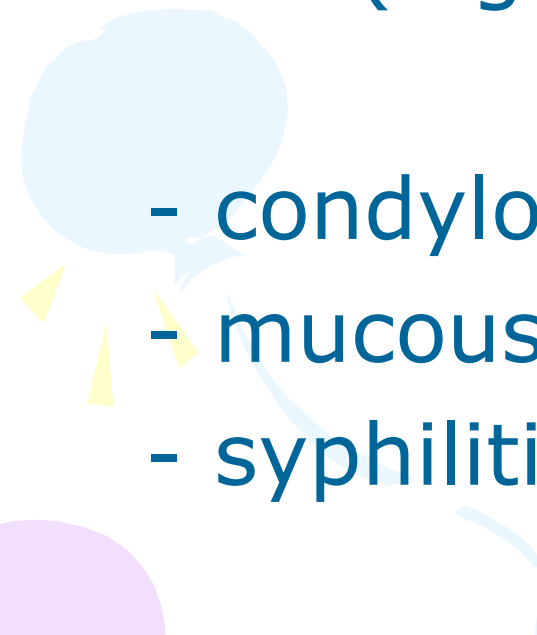


Alopecia areolaris





- Mucous membranes lesions
(highly contagious !!!!)

- 
- condylomata lata
 - mucous patches
 - syphilitic angina



condylomata lata



condylomata lata



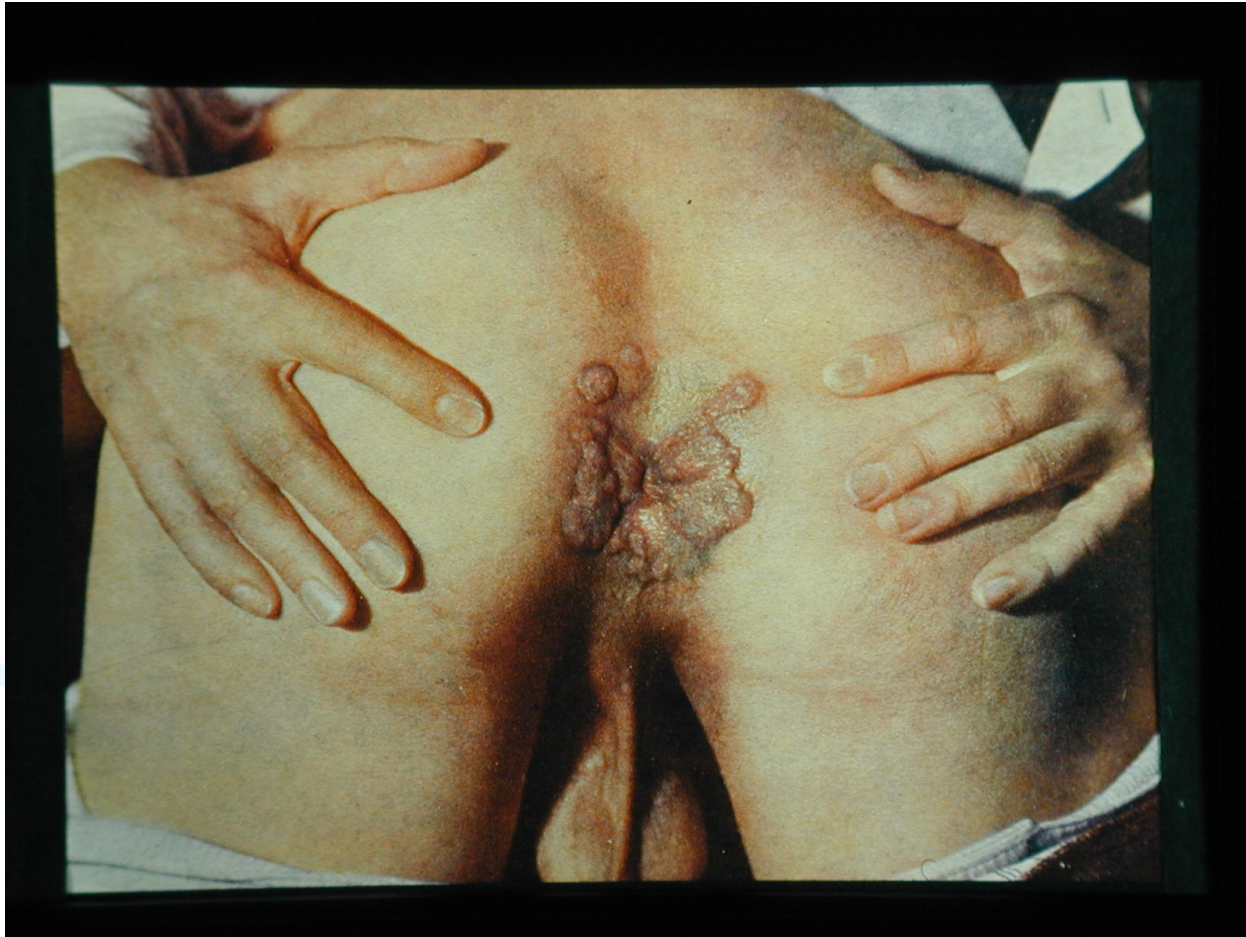
condylomata lata



condylomata lata



condylomata lata



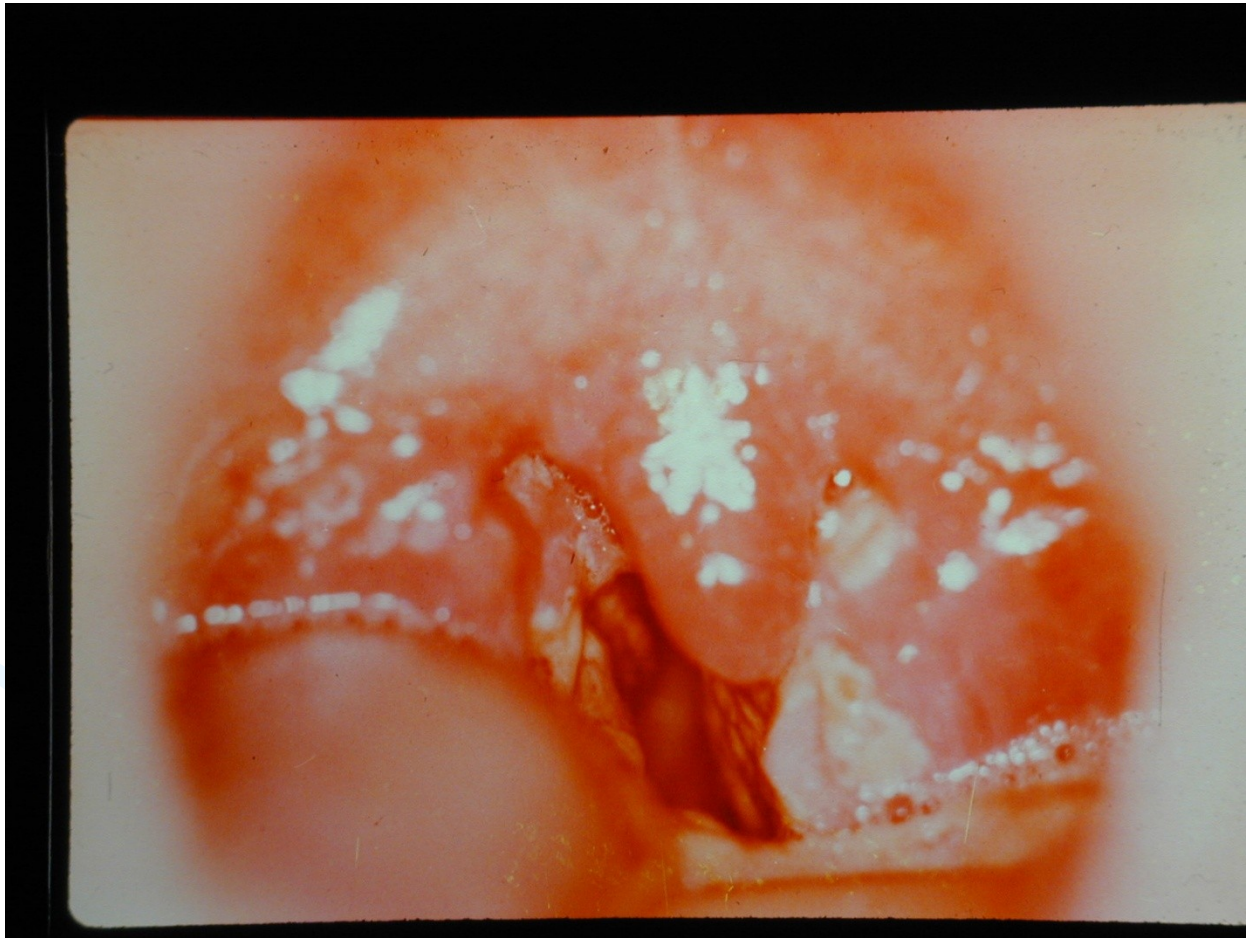
condylomata lata



mucous patches



syphilitic angina





Latent Syphilis

- No clinical features (either on the skin, mucous membranes or in internal organs)
- just positive serology
- longest between 2th and 3rd stage
- after 3-5 but even 10-15 years in 1/3 patients with untreated syphilis progression to 3rd stage



Tertiary Syphilis

- Noninfectious, lesions not containing viable treponemas
- Clinics:
 - 1) tubercous syphilis
 - 2) gummata : skin (specif. granuloma)
: organs
tongue, bones- hard palate,
nose and parenchymal
organs – liver, lungs etc.

tuberous syphilis



Gummata



gumma of the hard palate with perforation





3) Visceral sy : bones

syphilitic periostitis, osteomyelitis

: parenchymal organs

interstit. inflammation- liver, parotides, testes...



4) KV syphilis : mesaortitis --> aneurysma

endarteritis of coronary vessels
insufficiency of aortal valve





neurosyphilis

- Meningovascular damage

- intracranial hypertension

- focal symptoms similar to cerebral stroke

- Degeneration of neurons

- **general paresis of the insane**

- disturbances of memory, intellect, attention, discernment, moods, depressions, agitation, demented states with megalomaniac delirium, trembling, dysarthria



neurosyphilis

- **tabes dorsalis**

sclerosis of the posterior columns of spinal chord



Progressive ataxia (specific walk, + Romberg sign)

Absent deep tendon reflexes (but positive Babinski sign)

Argyll-Robertson pupils – no reaction to light

Shooting pains

Sphincter disorders, impotence

Charcot's joints – damaged due to a lack of sensation



Trophic defects - malum perforans



Congenital Syphilis

- Transplacental transfer conditions - mother has TP in the blood
 - permeable placenta
- (rarely before the end of 1st trimester)

implications: treated sy – healthy child

non- treated early sy - abortion in 6-7 m

non treated late sy – early congenital sy

- late cong. syphilis

- healthy child



Early congenital Sy

- atrophic newborn
- yellow-grey colour (anemia, jaundice)
- hepatosplenomegaly
- pneumonia alba
- general. lymphadenopathy
- pemphigus syphiliticus blisters on palms & soles
- papulosquamous lesions

pemphigus syphiliticus



Papuloerrosive lesions, coryza syphilitica

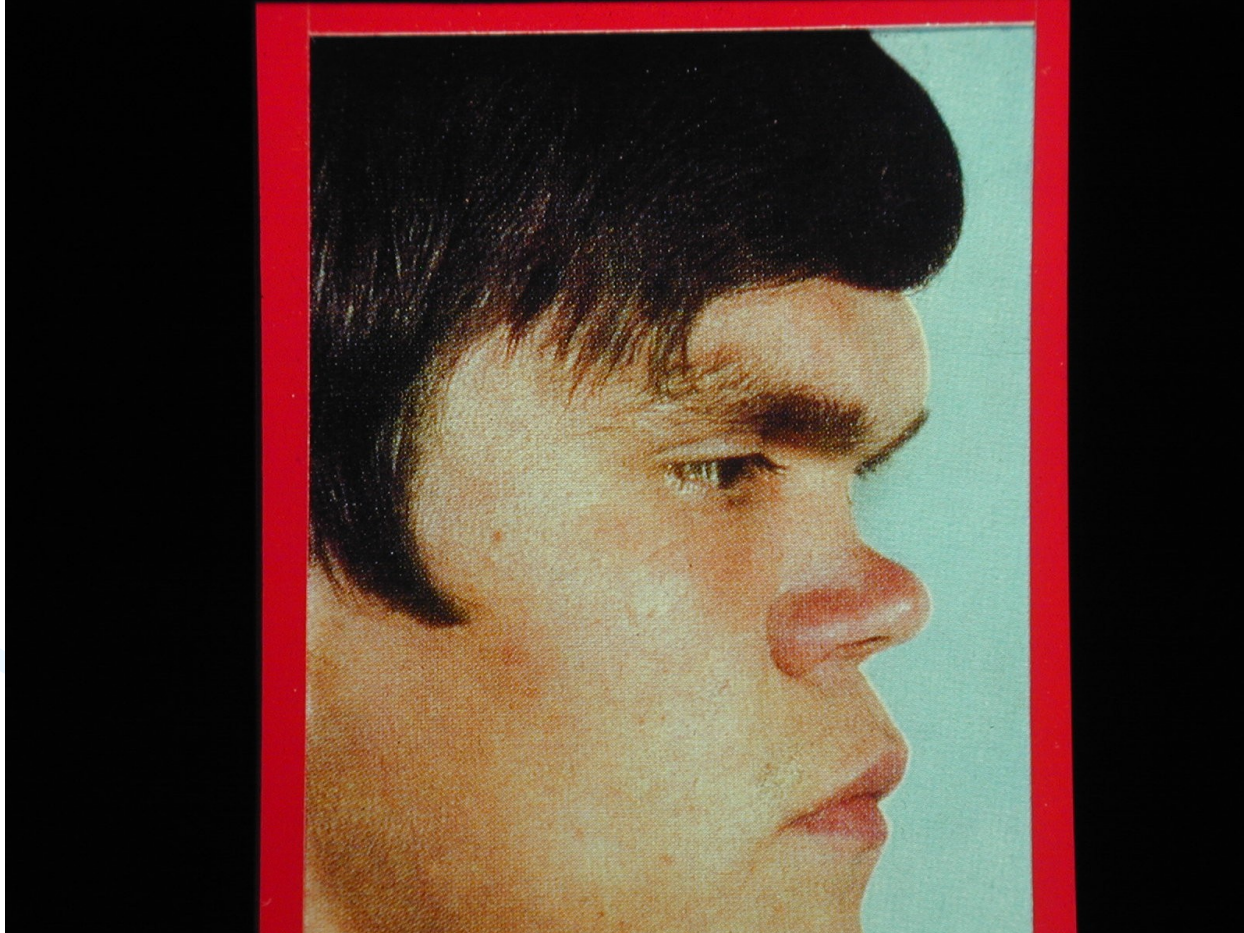




Early congenital Sy

- coryza syphilitica rhinitis
- Parrot lines – rhagades--> scars around mouth
- 30% mucous patches
- condylomata lata
- Bone damage: saddle nose
palate perforation
frontal bossing
sabre shins

saddle nose





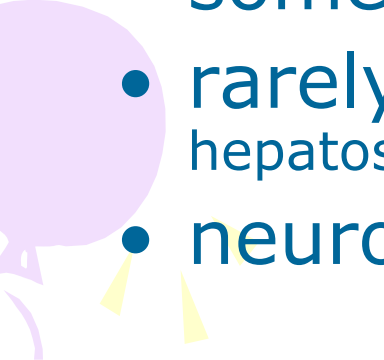
Late congenital Sy

after 2 years of age

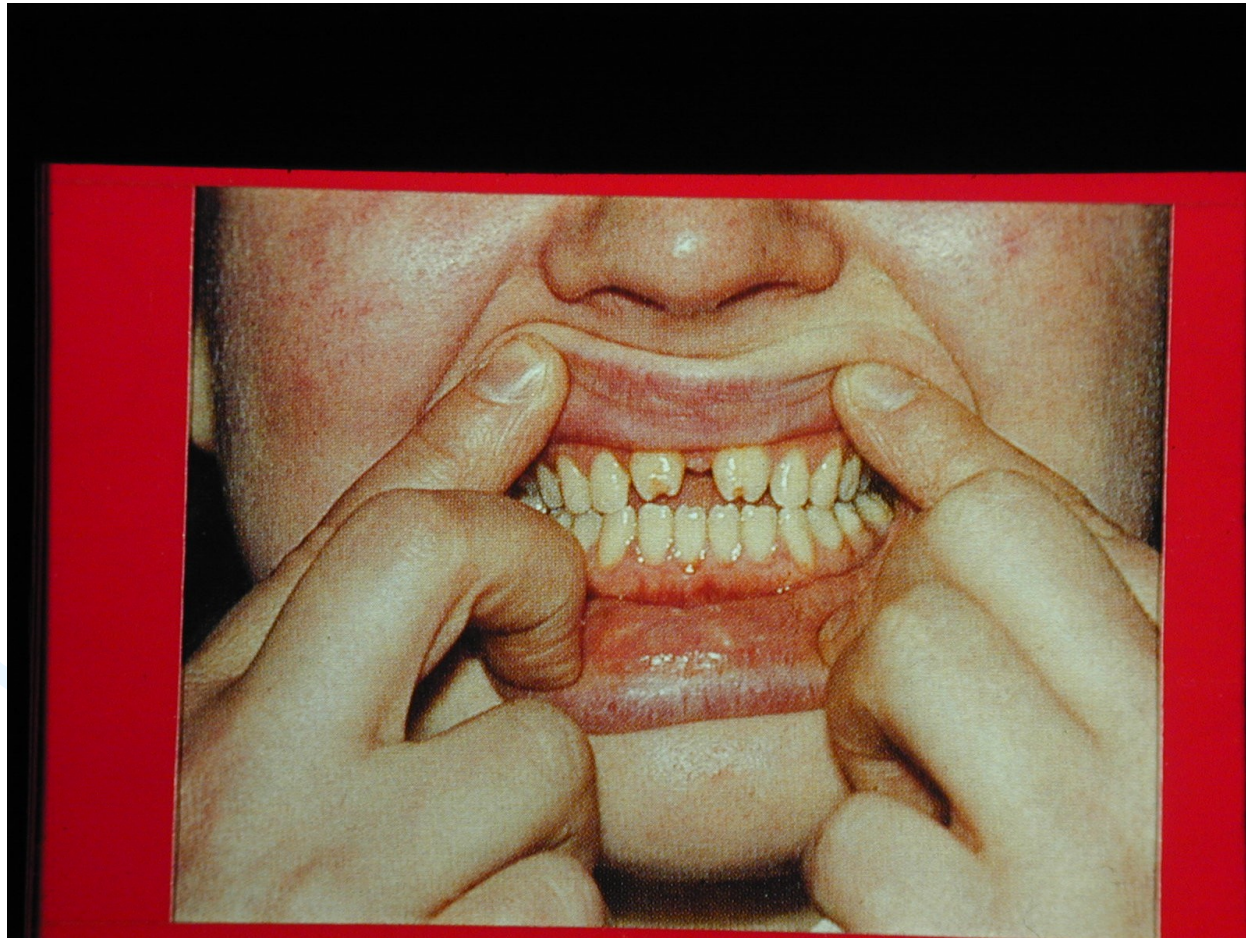


- **Hutchinsons trias:**

- barrel incisors
- interstitial keratitis
- 8 th nerve deafness

- 
- saddle nose, frontal bossing, sabre shins
 - effusions to joints /Clutton joints/
 - sometimes gummata on the skin
 - rarely internal organs involvement:
hepatosplenomegaly, KV syphilis- mesaortitis
 - neuro sy – disorders of speech and intellect

Barrel incisors, diasthema



Barrel incisors, diasthema



saddle nose



Diagnosis of syphilis

- **Direct examination**

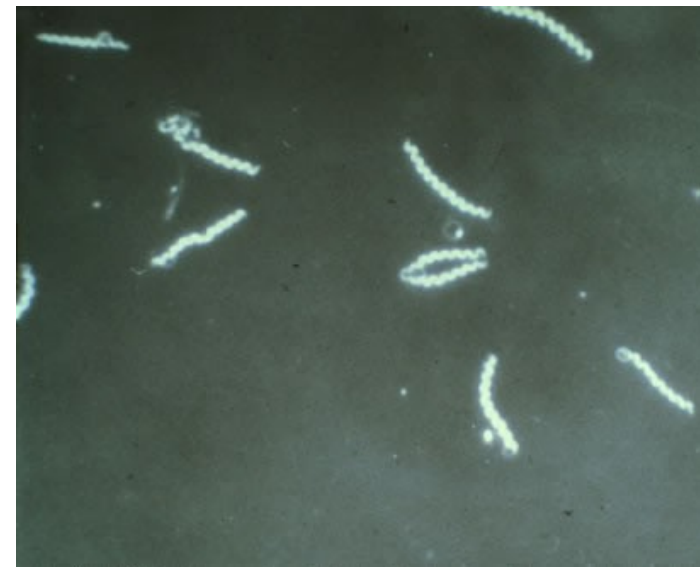
- **Ulcer or other mucous membranes lesions**

- I) **dark field microscopy** Technique:

- Massage of the ulcer with a plastic loop,
 - Picking up the fluid with the loop to a drop of saline solution
 - Put on a slide
 - Slowly moving shining spiral structures
 - in dark field /5 to 15 um, 10 to 20 spirals/
 - differentiation from non pathogenic treponemas/T. macro,microdentium etc./

- II) **DFATP** (DIF – Ab against TP),

- III) **PCR**






- **Serology**



- 1) nonspecific reactions** - antigen is cardiolipin

1906 Bordet Wassermann - KFR (BWR)
flocculation reactions (RRR ,VDRL)

- screening reaction
 - positive since 5th week after infection
 - sometimes biologic false positivity
 - Acute (< 6 months) gravidity, spirochetal infections (leptospirosis), viral infections (mononucleosis, rubella, chicken pox)
 - Chronic (> 6 months) - chronic infections (leprosy, TBC, malaria), autoimmune disorders(SLE), malignancies, drug abuse
- 

2) specific reactions – antigen is TP

1949 Nelson TPIT TP immobilization test, not performed now

- FTA-Abs. Test (IgM)(Fluorescent Treponemal Antibody)
 - Specific confirmation test, positive since 3rd week
 - TPHA Test (S-IgM SPHA)(Treponema Pallidum Haemagglutination) *sheep ery coated with TP antigens*
- Screening and confirmation test, positive since 4th week
- ELISA IgM, IgG - confirmation test, early positivity
 - Westernblot - confirmation test, more accurate than ELISA

screening – RRR, TPHA, **confirmatory** – ELISA, WB, FTA ABS



Treatment of syphilis

- **Recent sy:** P-PNC G 1,5 -3 mil U im.
1 week, at the end 1 application of benzathin PNC 2,4 mil U im.
- **Late sy :** P-PNC G 1,5-3 mil U. 2 weeks ,
then benzathin PNC 3 x á 1 week
- **Neurosyphilis:** crystalic PNC 18-24mil U/d iv
- allergy : TTC, macrolids – not so effective!
cephalosporins

A decorative graphic on the left side of the slide features three overlapping speech bubbles in light green, light blue, and light purple. From the top of each bubble, several yellow triangular rays emanate, resembling a sun or a starburst effect. The overall style is clean and modern.

Complications of treatment of syphilis

- Jarisch – Herrxheimer's reaction
- Rupture of the aneurysma of aorta





2) Gonorrhoea

- pathogen: *Neisseria gonorrhoeae*
- G- diplococcus, 0,8-1,6 μm
- Acute purulent inflammation of the mucous membranes of urogenital tract (but also rectum,conjunctiva...)
- no immunity develops!
- transfer: sexual intercourse,
rarely during delivery
exceptionally via objects
- IP: 2-6 days (1-14 d)



Clinical picture

Acute go in men

- Discharge and dysuria
 - complications: balanitis, balanoposthitis, phimosis, paraphimosis
Tysonitis, Littreitis, periurethritis, cavernitis, cowperitis
 - Ascending infection
prostatitis, epididymitis, seminal vesiculitis
cystitis, ureteritis, pyelonephritis,
sepsis, metastatic complications
- 
- 

Acute go in men





Gonococcal sepsis

- Epizodic fever, polyarthritits,
 - Hemorrhagic ,pustular rashes
 - Metastatic complications
 - mostly knee - gonarthritits
 - (empyema, perforation, ankylosis),
 - less often other joints – sterno-clavicular
 - Pneumonia
 - Endokarditis,myositis
- 
- 



Chronic gonorrhoea in men



Gonococci hidden in small glands
or in prostate,

Spare milky discharge- 'bonjour drop'

- consequences: stricture of urethra,
fimosi, sterility
- 



Acute gonorrhoea in women

- Urethritis
- Cervicitis
- Complications: Bartholinitis, paraurethritis, cystitis, endometritis, salpingitis, adnexitis, peritonitis, perihepatitis, pyelonephritis, sepsis, metastatic complications



Chronic gonorrhoea in women

mostly asymptomatic course

inf. hidden in small glands

after intercourse, menses, alcohol intake
egestion of cocci and infection of sexual
partner

consequences: sterility, risk of ectopic pregnancy,
chronic PID /pelvic inflam. disease/

diagnostics

- **Microscopy**

taking of samples with a loop

- **smear** – spread on a glass slide, heat fixation and Gram staining

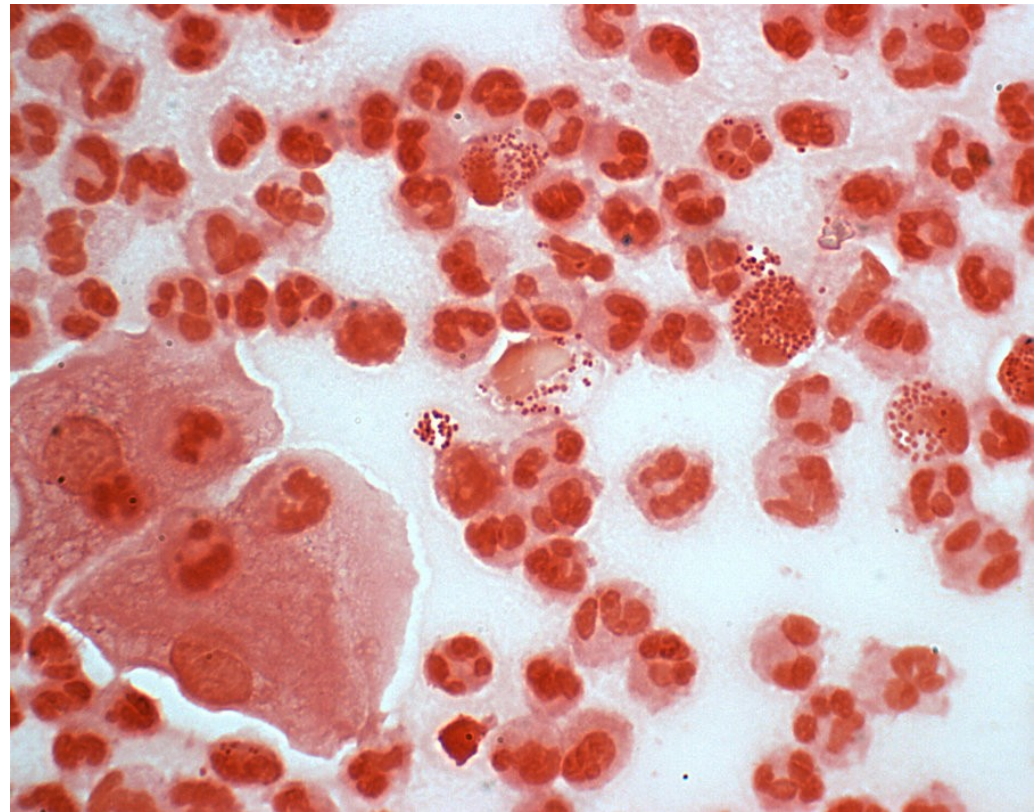
- **Culture** – blood agar
at 36 dC, CO₂ rich atm.
gray colonies

- identification – *oxidase* reaction and others

- ATB sensitivity (PNC, cefalosporins, TTC)

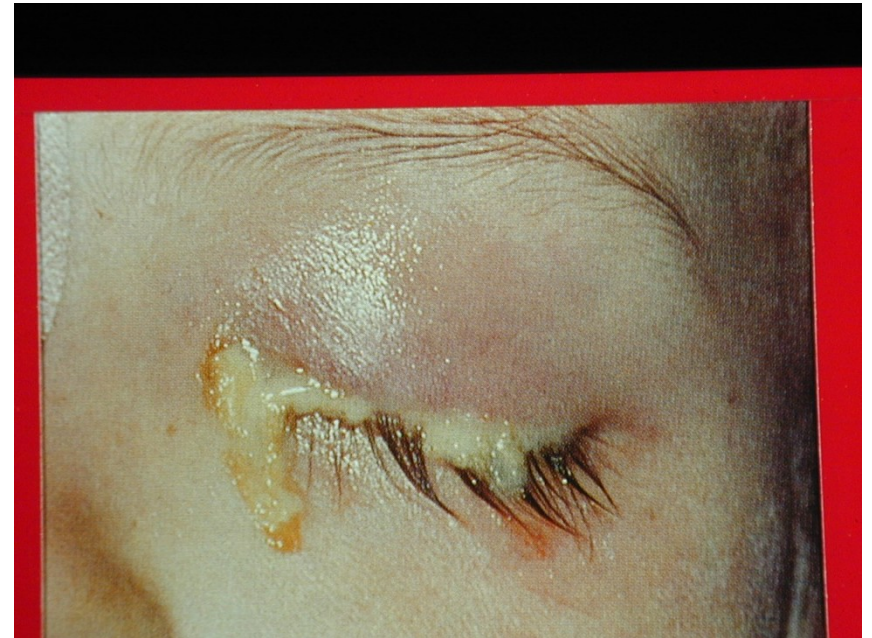
- Serology: unreliable

- PCR



Extragenital go

- Go conjunctivitis
neonatal
adult
- Rectal go
primary
secondary
- Pharyngeal go





Treatment of gonorrhoea

Acute non complicated go:

- ceftriaxone 1g i.m.
(+ azithromycine 2g (single dose)
- doxycycline 7-10 days 2x100 mg
spectinomycine 2g i.m.



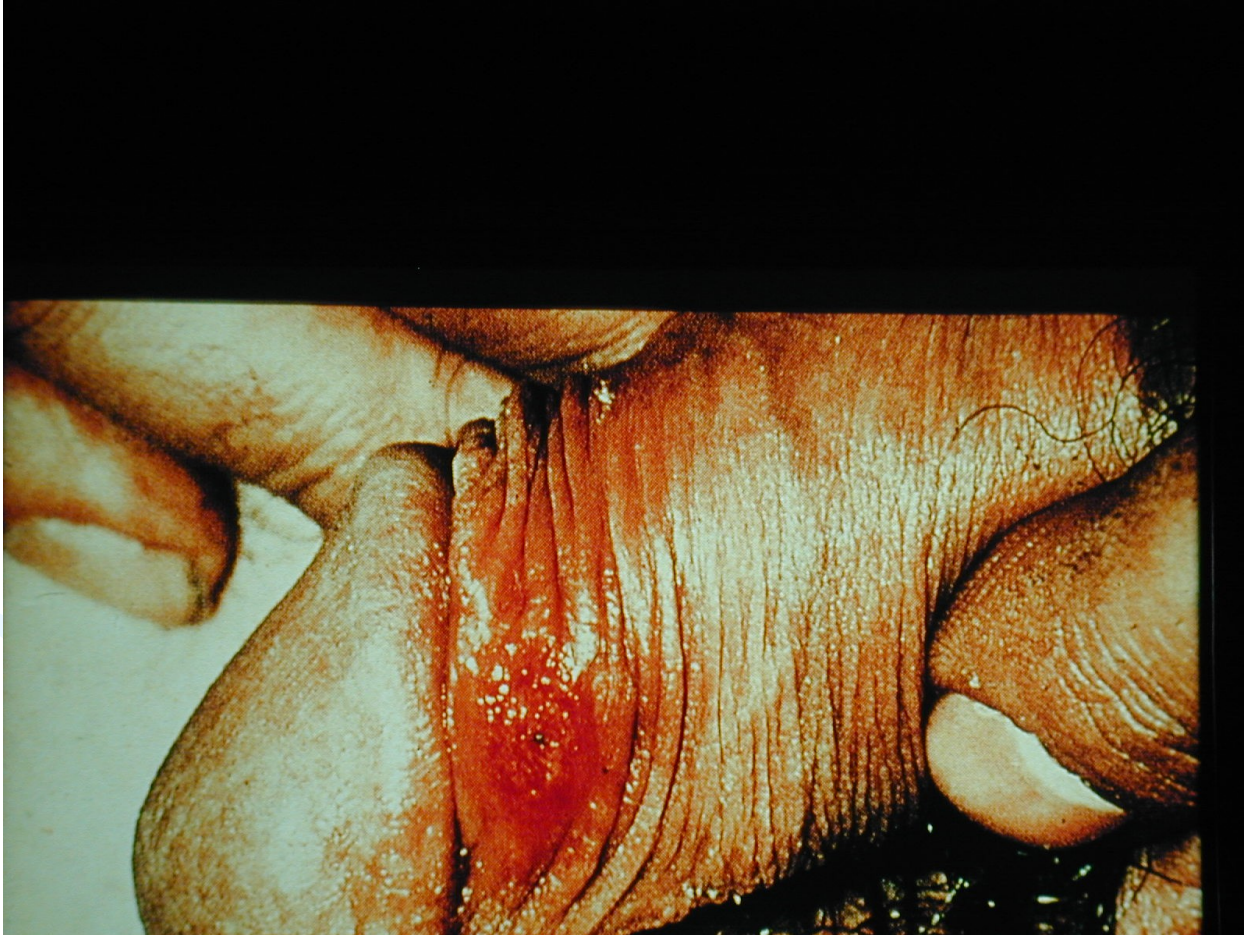
Complicated, chronic go:

better to treat during hospitalization

ceftriaxone 3-7 days 1g i.m.



3) Chancroid





Chancroid - Ulcus molle

- Causative org.: Hemophilus Ducreyi
- short G- rod
- IP: 3-5 days (1-14 days)
- epidemiology: Africa, India, Carribean
- No immunity
- Clinics: painful ulcer with undermined border, mostly innner aspect of the foreskin
- Within 3 weeks lymphadenopathy(bubo) colliquation, fistulas



Chancroid

- **Dg: microscopy**

described as schools of fish

culture : blood agar enriched with
vancomycine and 1% izovitalex

- **Th:** Azithromycine 1g 3 days

Cephalosporins – ceftriaxone 1 g i.m.

Ciprofloxacin 2 x 500 mg 1 week

4) Lymphogranuloma venereum

- cause: chlamydia - serovars L1-3
- IP: 1-3 weeks (3-30 days)
- Epidemiology: Asia, Africa, India, South Am.
- Venereal disease affecting lymphatics
- Clinic: small ulcer
- Healed within 1 week
- After 1-6 weeks regional lymphadenopathy, colliquation, fistulas, healing with scars
- consequences: lymphoedema of penis, vulva

Lymphogranuloma venereum



Lymphogranuloma venereum





Lymphogranuloma venereum

- Dg: – serology KFR (titer > 1:64 or 4 x increase and higher)
 - microimmunofluorescence
 - culture - expensive
 - PCR
- Th: doxycycline 2x100mg 3 weeks, ery 4x500mg 3w, azitro 1g 3 w surgery of abscesses



5) Granuloma inguinale

- Cause: Klebsiella - formerly:
Calymmatobacterium granulomatis
- G- small oval microorganism
grows intracellularly in macrophages
- epidemiology: SE India, N. Guinea,
Caribbean, South Africa, Australia
IP: 2 weeks – 2 months
- clinics: chronic ulcerative vegetating
often large ulcers

Granuloma inguinale

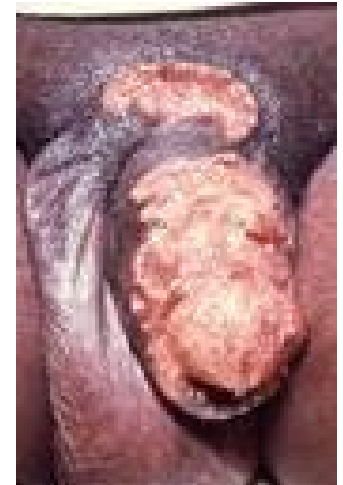


Granuloma inguinale

- Dg:

- microscopy- Wright or Giemsa staining:
G-oval bodies inside macrophages,
- culture – difficult
- serology (x Kl. Rhinoscleromatis)
- PCR



- Th: streptomycine 1g im. 2-3w
azithromycine 1g weekly 4w
doxycycline 2x 100mg 3 w





II) Other STDs

1) non-specific UG infections

- **Most common agents:**
 - **Chlamydia trachomatis (D - K) 50%**
 - **Mycoplasma, Ureaplasma 20-30%**
 - Trichomonas vaginalis < 5%
 - Bacterial urethritis < 2%
 - Candida < 2%
 - Herpes simplex < 2%
 - Unknown 10 %
- 
- 

Chlamydia

G- immobile bacteria, round-shaped
obligate intracellular parasites
lack cytochromes
IP 10-20 days





Serovariants :

- serovariant: A-C trachoma
- serovariant :L1-L3....lymph. vener.
- serovariant :**D-K** ... urog. infections



women: cervicitis (50% asymptom.)

urethritis (mostly asymptomatic)

proctitis

endometritis, salpingitis

PID, infertility





- Men:

- Mucopurulent urethritis (10-50% symptomatic)
- Epididymitis, prostatitis
- Reiter sy:
 - starts as urethritis or balanitis circinata
 - after 10 -30 days .: arthritis (95%)
conjunctivitis 25-50%)
rashes (10%)
lesions similar to pustular psoriasis or EEM



diagnostics

- **Chlamydia trachomatis** (D-K)
microscopy- Giemsa stain
direct IF with monoclonal. Ab,
culture on cell cultures (Mc Koy)
PCR, LCR
- serology - ELISA, KFR, IIF
(unreliable, follow the Ab titre dynamics)

Treatment of chlamydial infections

- Doxycycline 2x100 mg 7-10 days
- or azitromycine 1g mg 1-3 days
- or chinolones 2x 250 mg 5 days

/ofloxacine,ciprofloxacine/

pregnancy : erythromycine

PID: clindamycine+ gentamycine

or ciprofloxacine+ metronidazole



Mycoplasmata, ureaplasmata

- M. genitalium, (hominis, fermentans)
- (Ureaplasma urealyticum)
- Lack cell wall, immobile, ectoparasites
- Dg: culture, mycoplasma agar, PCR
- Clinical picture:
 - men: 70 % symptomatic chron. urethritis, serous discharge, sterile leukocyturia compl. prostatitis, pyelonephritis, Reiter sy
 - women : mostly asymptomatic infection: urethritis, vaginitis, cervicitis, endometritis, spontaneous abortions
- Th: azitromycine 500 mg, then 250 mg until day 5

Trichomoniasis

Trichomonas vaginalis – flagellated protozoan

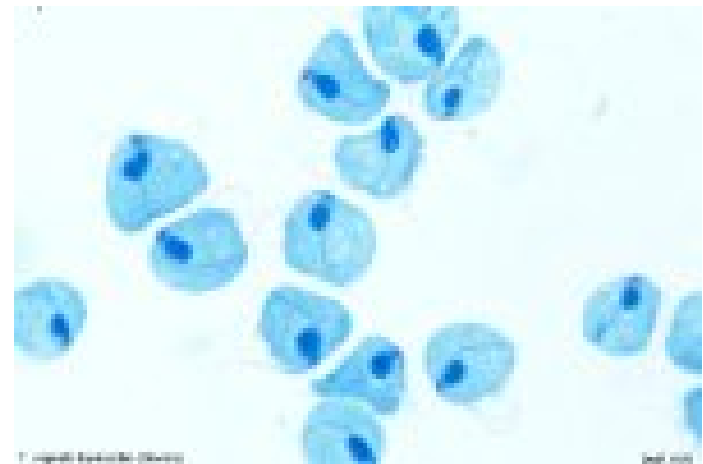
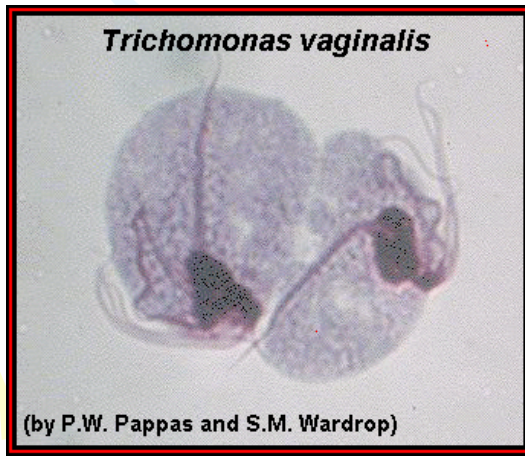
- transfer during sex but also via objects /sponges, wet towels/

clinics: women – vaginitis – foamy vaginal discharge
dysuria , dyspareunia

men – mostly asymptomatic course or mild dysuria

dg: mikroskopy -native preparate
culture

th: metronidazole 1x2g or 2x500mg 1 week





2) Viral STDs

- **genital herpes** – HSV 1,2
- **genital warts** – HPV (6,7,11,16,18)
- **molusca contagiosa** – poxvirus



a) Genital herpes

- Causative agent HSV II : 70-90%,
HSV I : 10-30%

- Clinical picture:

primoinfection :herpetic blisters-->polycyclic erosions, very painful, enlarged lymphnodes, healing 2 to 6 weeks

recurrent infection: approx. 80%,
in women more severe course

asymptomatic infection – carriers

! Infection in pregnancy !

Genital herpes





Genital herpes

- Dg: clinical appearance
serology : KFR, ELISA, WB
(culture) (PCR)

Th: according to the extent- iv. ACV 5mg/kg
p.o. ACV 200-400 mg 5xd
or valacyclovir, famciclovir
cidofovir

Recurr. infection: prolonged suppressive th:
ACV 3x200 or 2x400 mg at least 3months

b) Genital warts

- Cause: HPV
> 200 types
- 83% HPV 6 and 11,
- 6% HPV 16 a 18
- IP 1-6 months
- Some related to cervical carcinoma
- vaccination



Genital warts

- Dg:
- Clinical appearance
- PCR
- Histology
 - akantosis,
 - papilomatosis,
 - koilocytes =
(hyperchromic nucleus,
perinuclear halo)



Genital warts

- Th:
- excision, abrasion
- Cryoth., electrocoag.
- podophylin tct
podofylotoxin
(Wartec crm)
- Imiquimod 5% crm
(Aldara)

Vaccination

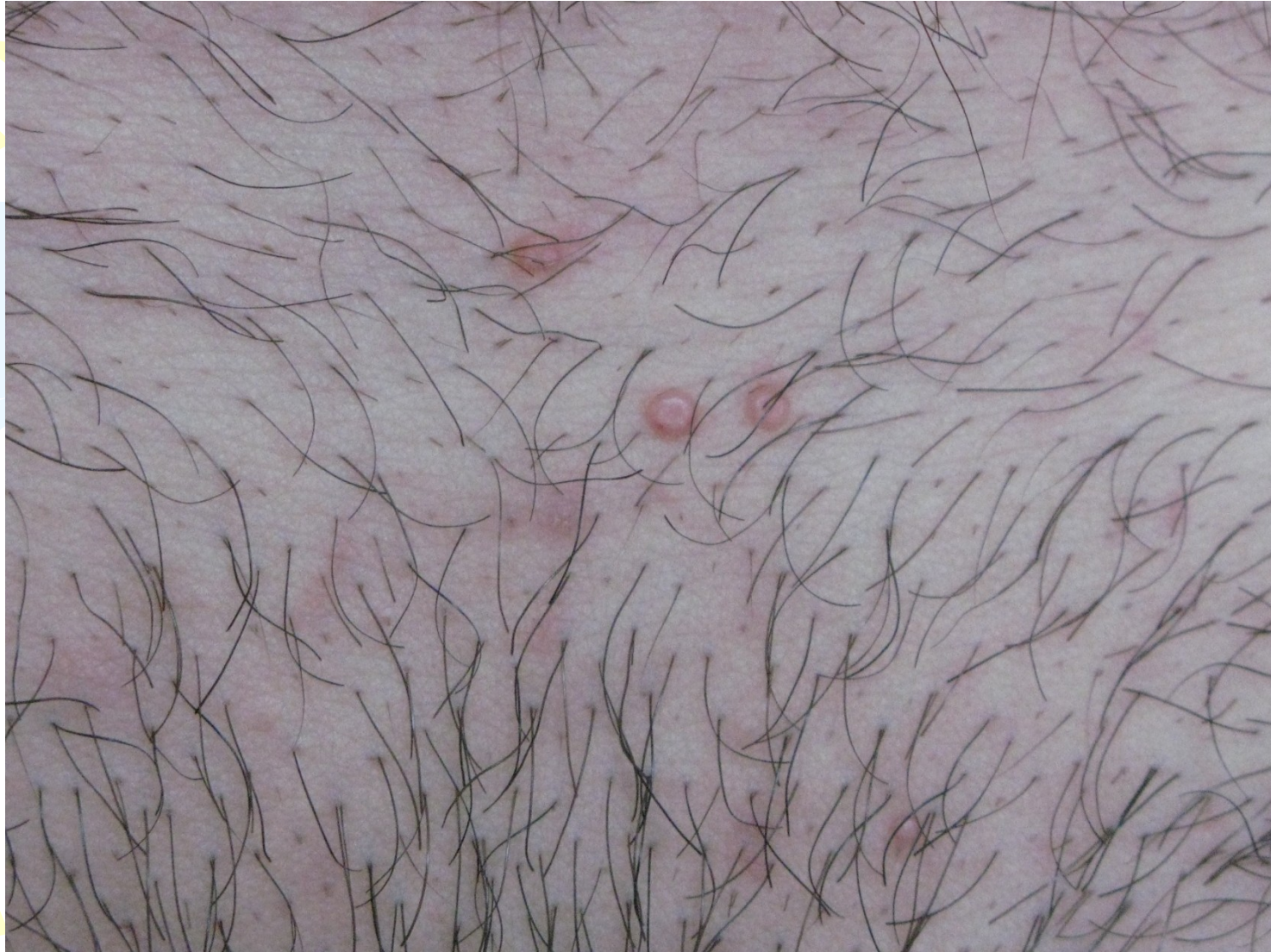


c) Moluscum contagiosum

- cause: poxvirus
MCV1,2
- transfer:
 - direct contact - among children
 - during sex. intercourse- in young adults around 20 y
- No itch, spontaneous regression
- Dg: clinics, (histology)
- Th: excision, abrasion
cryotherapy
iodine



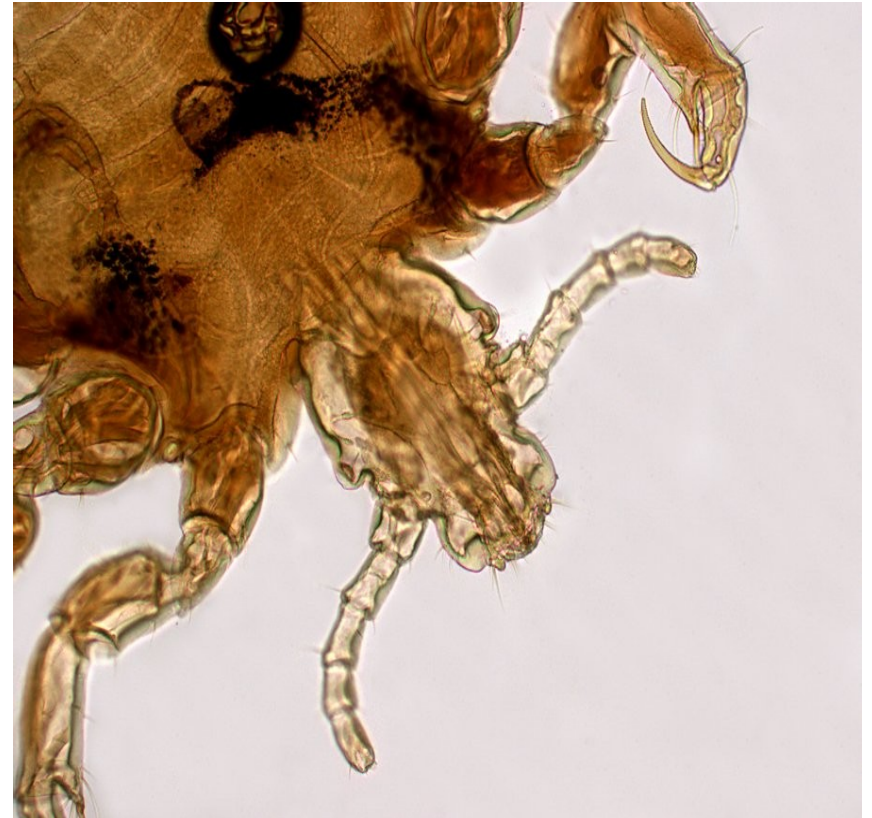
Moluscum contagiosum



3) Parasitic STD

1) Phtiriasis (crabs)

- cause: phtirus pubis
= pubic louse (crab)
- Size: approx 2mm
smaller than head or
body louse
- IP approx. 30 days



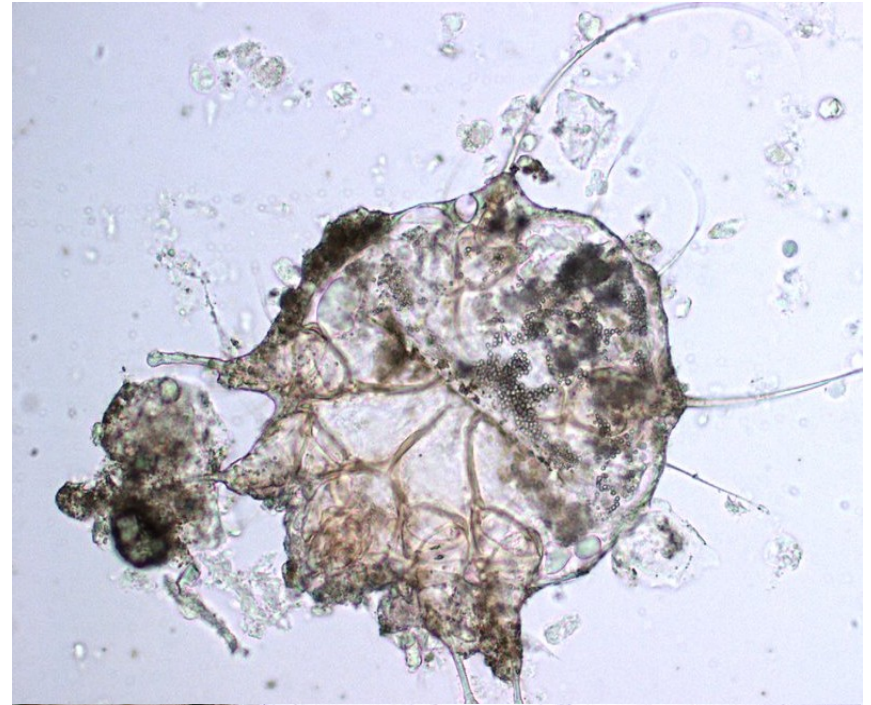
a) Phtiriasis

- itching in pubic region (or in axillary hairs)
- Nits attached to the hairs just as head lice
- Maculae coeruleae = violaceous macules result from the bite
- Dg: clinical picture
- Th: ivermectin 0,5%
malathion 0,5%
- top. dimethicon



b) Scabies

- Causative agent:
Sarcoptes scabiei
(scabies mite)
- Makes burrows in stratum corneum
- Feeds with tissue fluid
- Size: cca 0,3 mm
- IP: 2-6 weeks
- Transfer: direct contact indirectly
via linen, underwear,
in cheap hotels, lodging-houses
hospices, retirement houses
among homeless people ,
even health-care workers !



Scabies

- clinics: small papules, doubled pruritus at night
 - Predilection: interdigital spaces - fingers, anterior axillary fold, around umbilicus, genitalia
 - Dg: clinical appearance
microscopy
 - Th: topical - permethrine (Infectoscab)
sulphuric ointment
systemic: ivermectin
- !!! Hygienic measures !!!

