

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

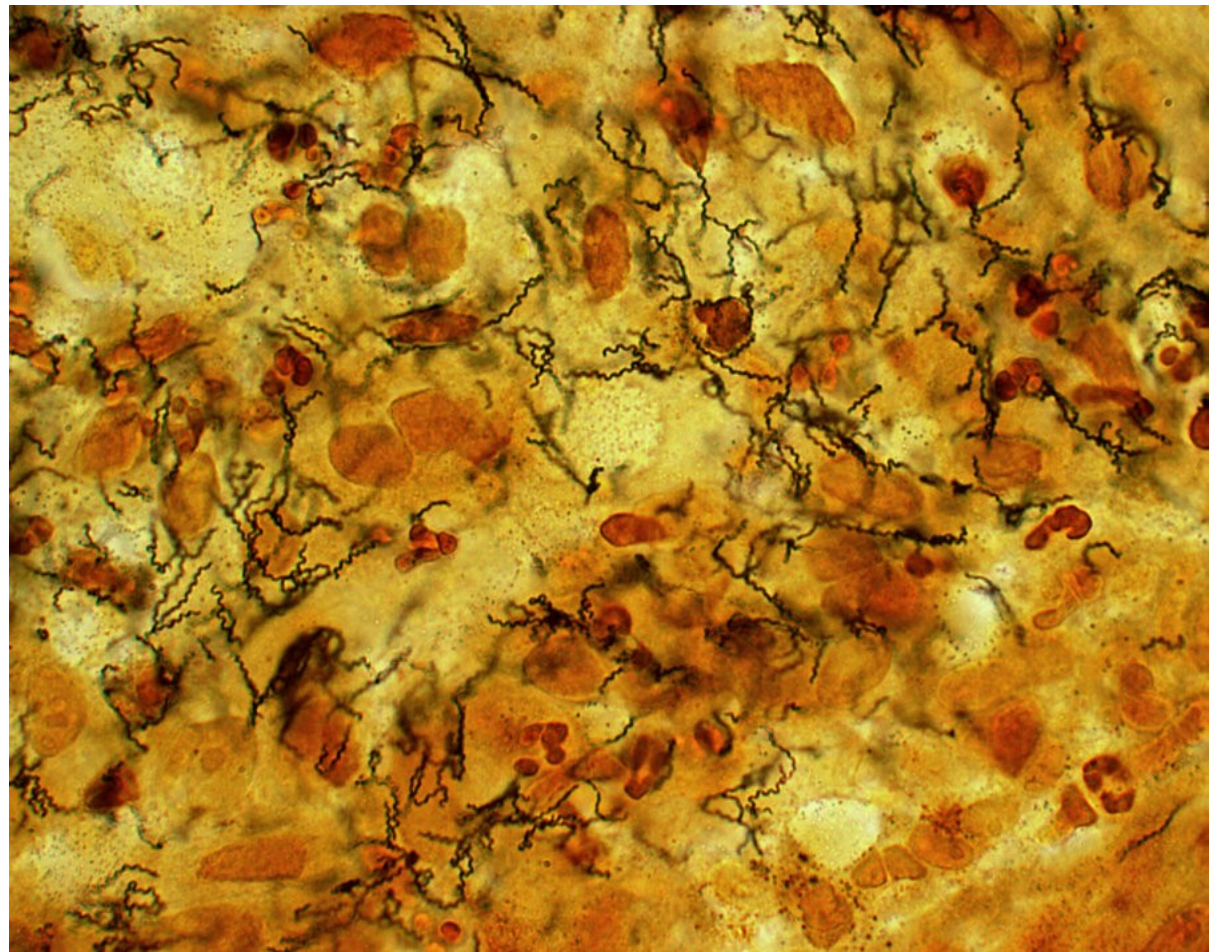
2) viral STD – HIV, hepatitis, genital herpes
genital warts, mollusca

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



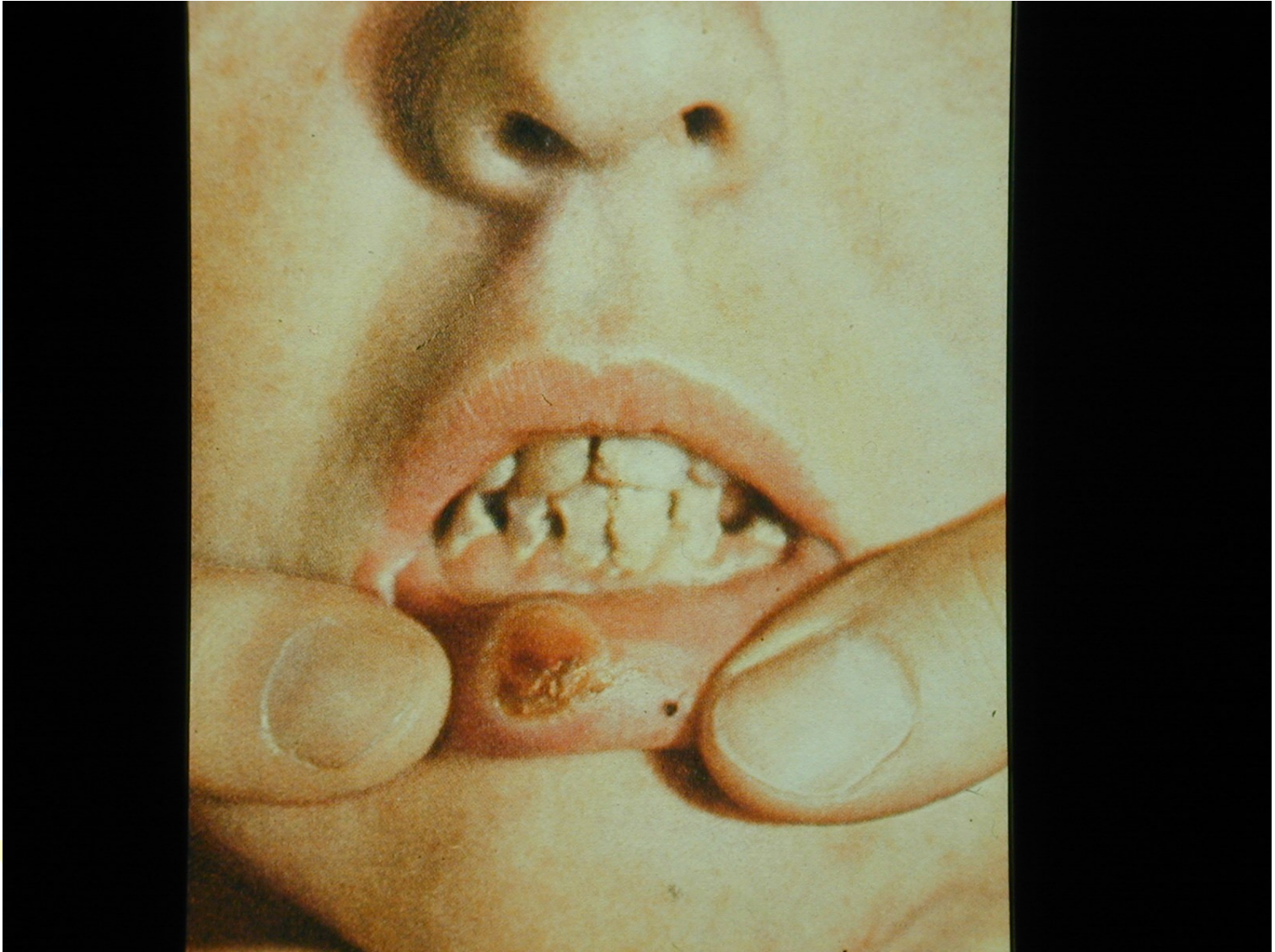
Multiple lesions



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



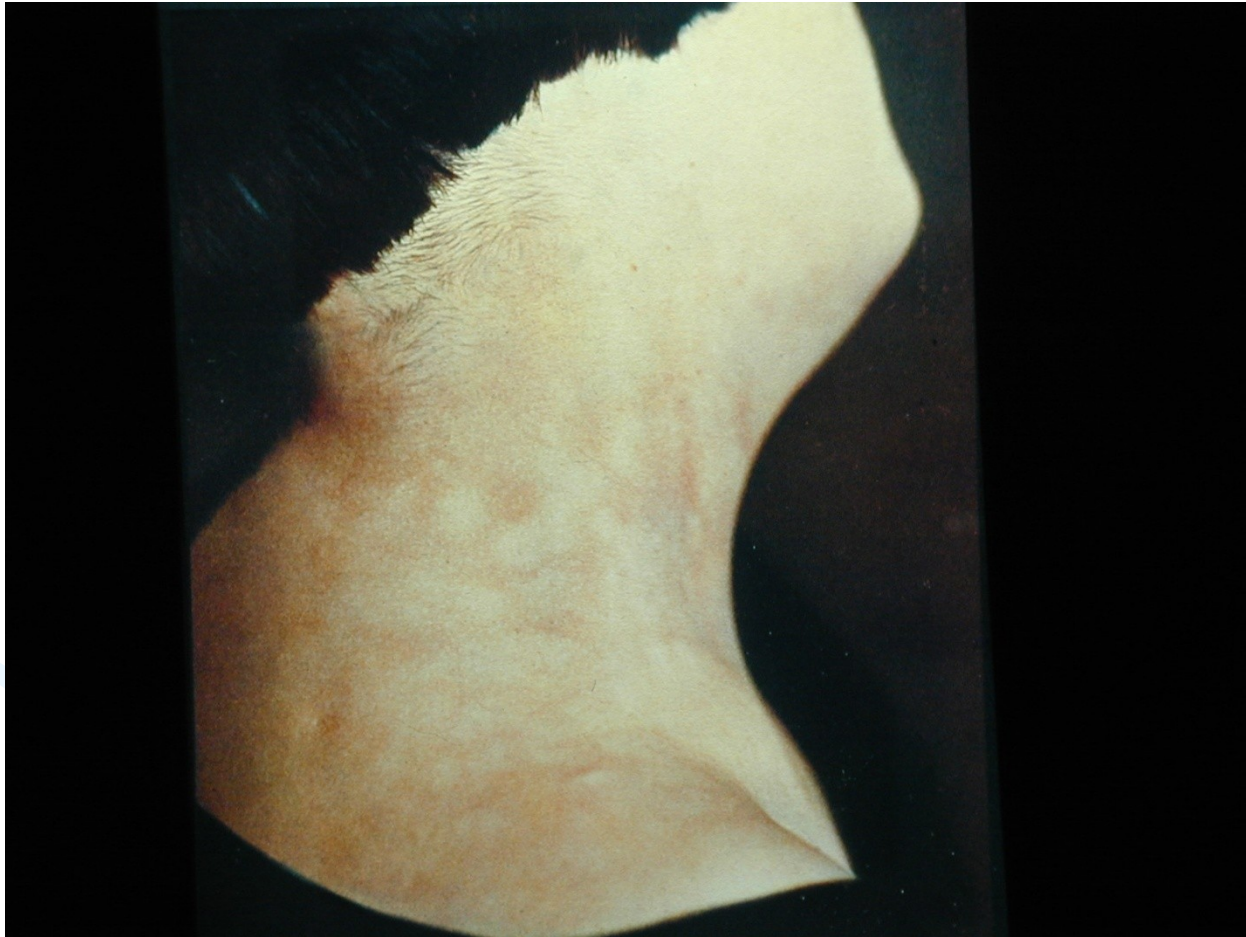
Lichen syphiliticus



Palmoplantar syphilid



Leucoderma syphiliticum

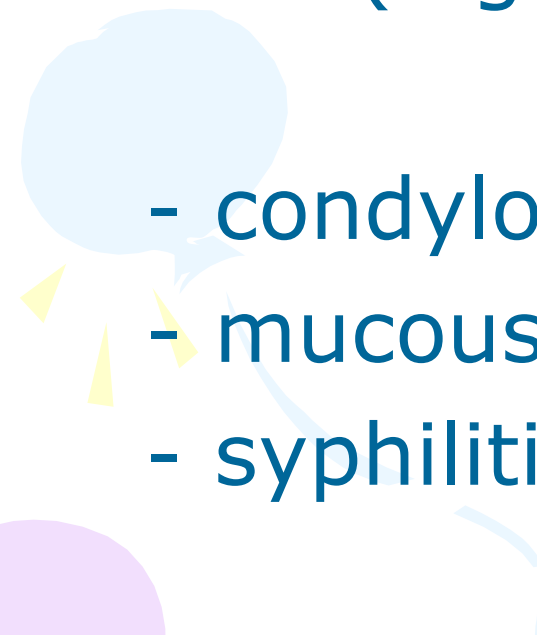


Alopecia areolaris





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

- 
- condylomata lata
 - mucous patches
 - syphilitic angina



condylomata lata



condylomata lata



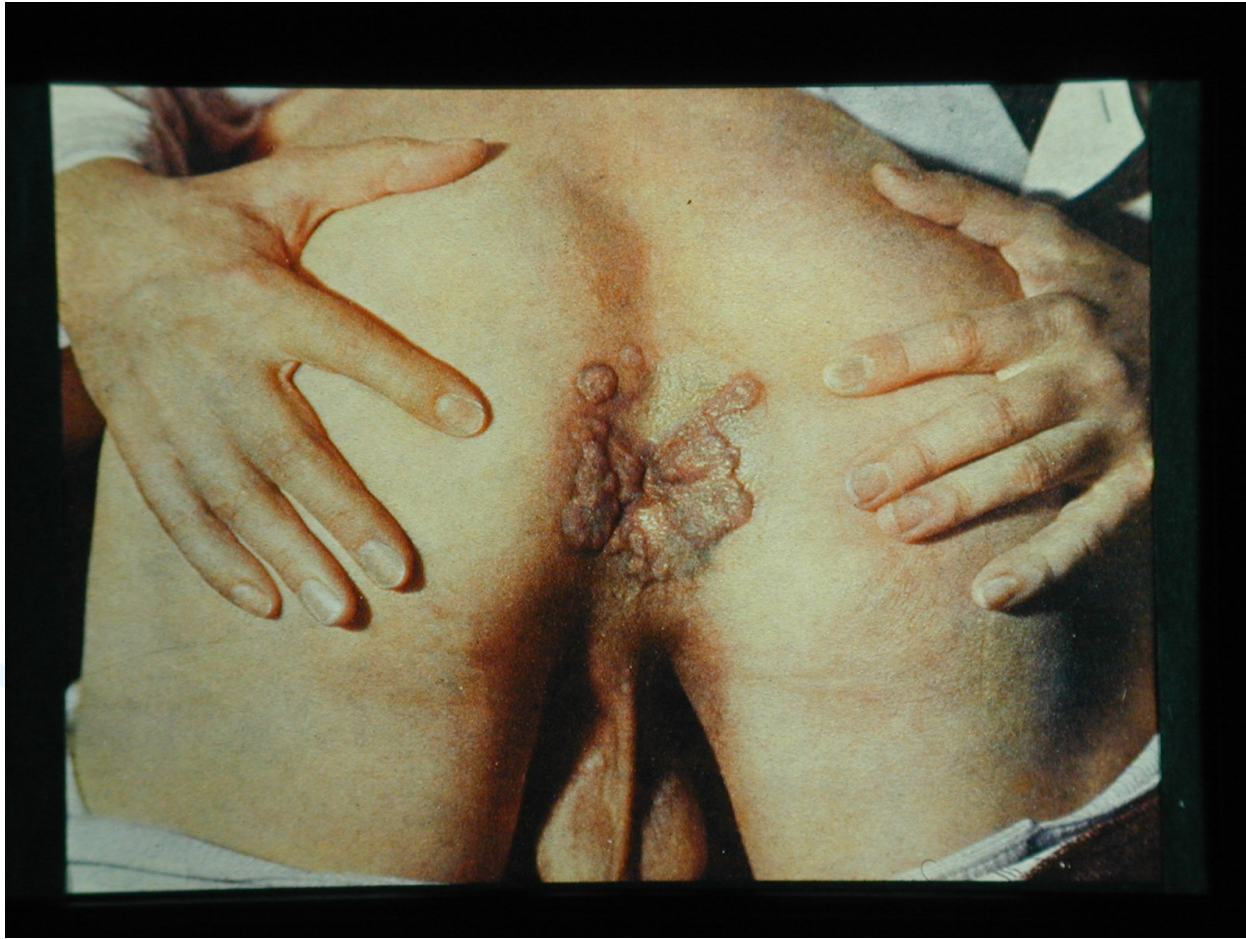
condylomata lata



condylomata lata



condylomata lata



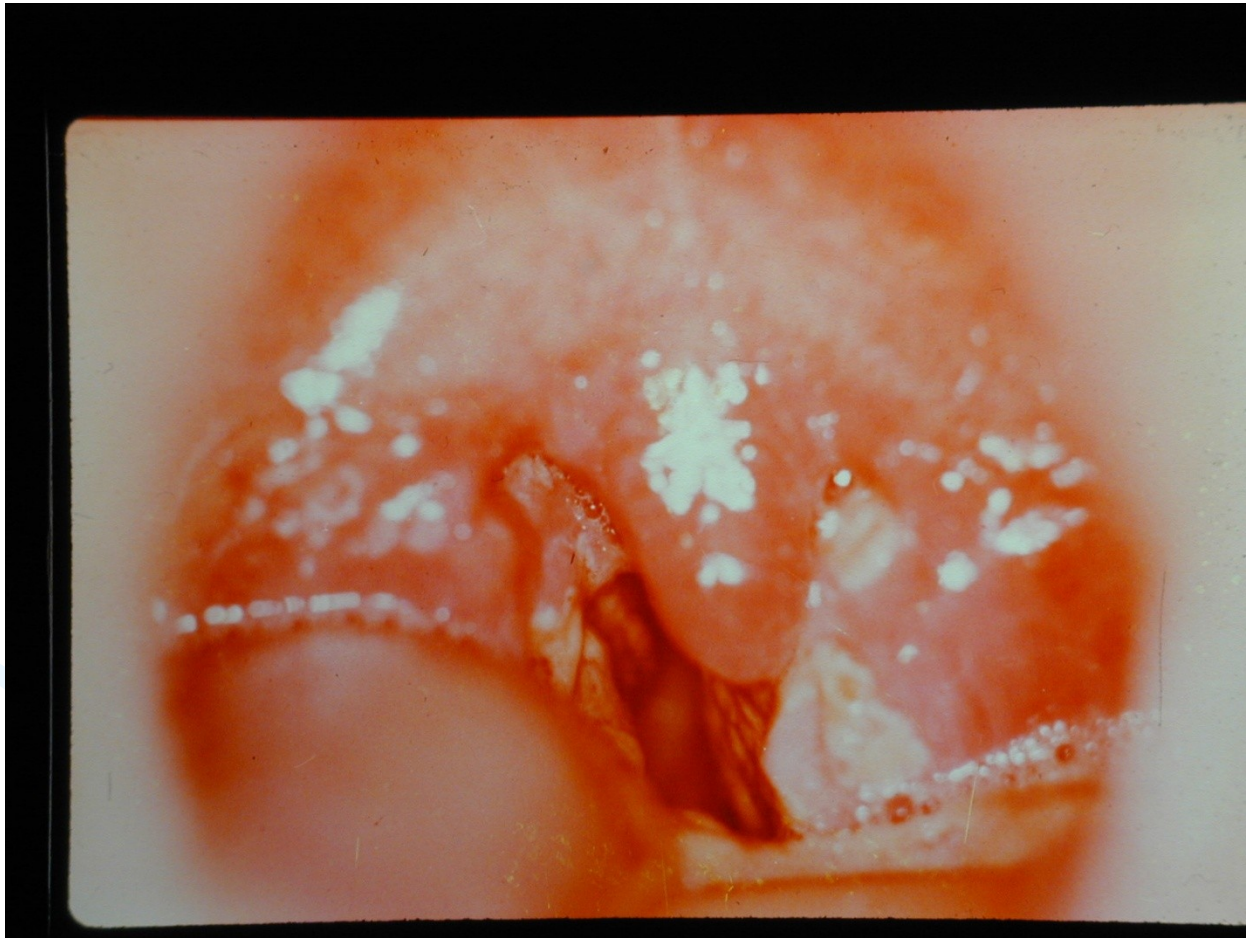
condylomata lata



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

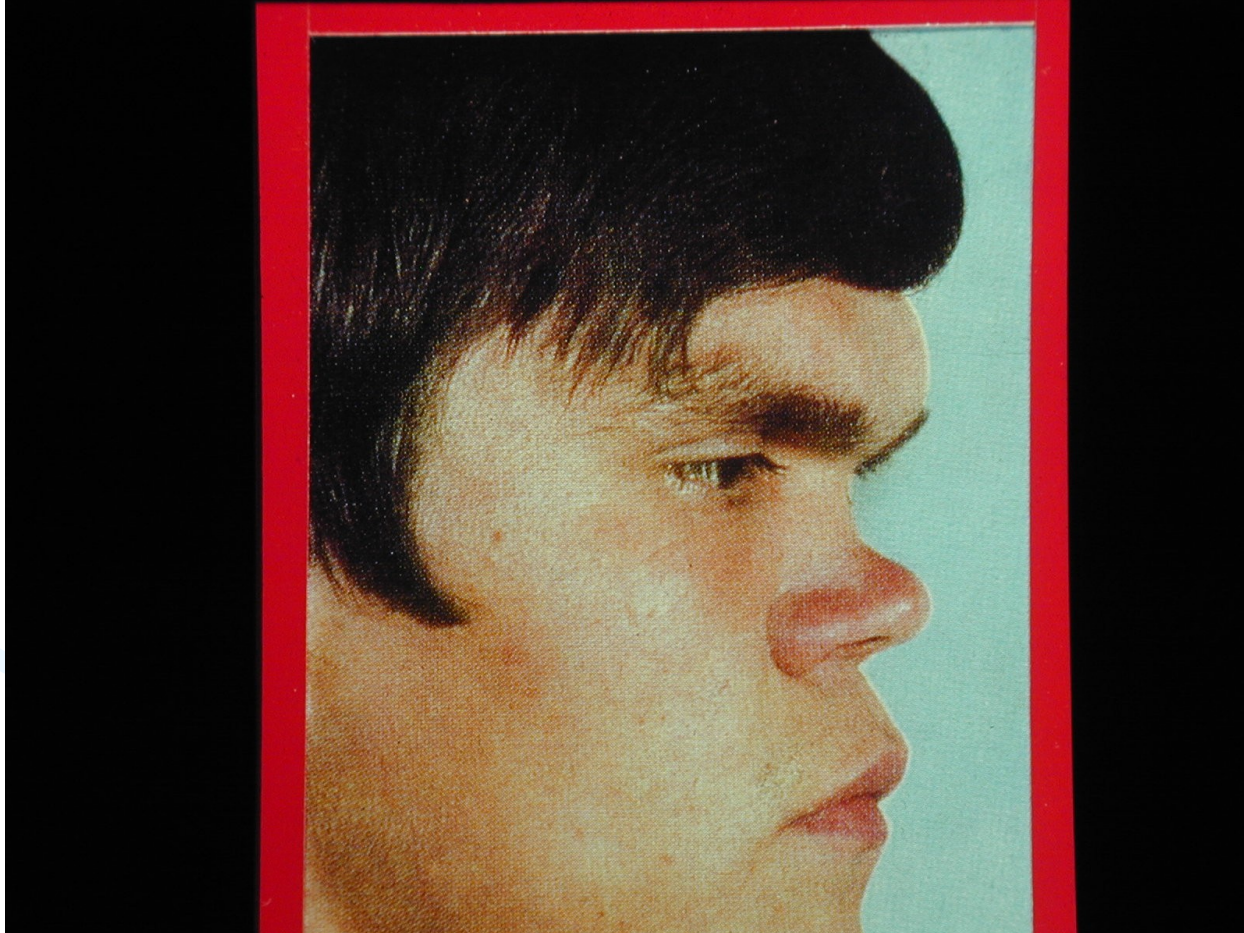




Early congenital Sy

- 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





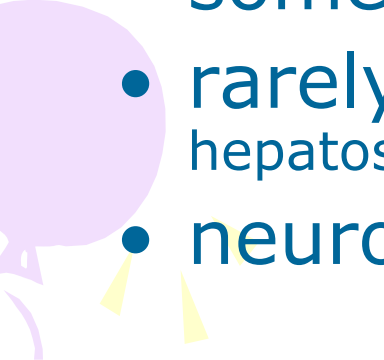
Late congenital Sy

after 2 years of age

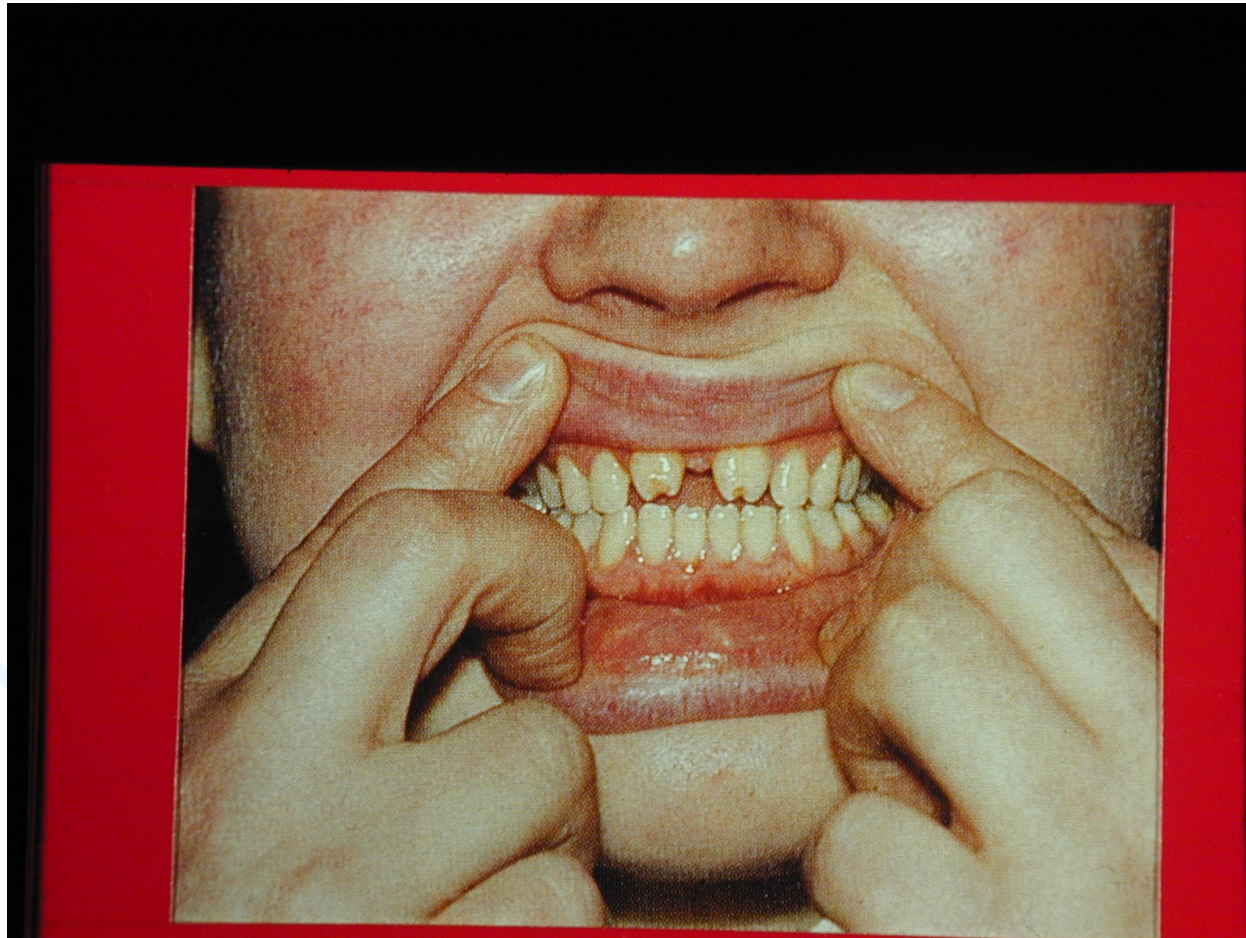


- **Hutchinsons trias:**

- 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



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

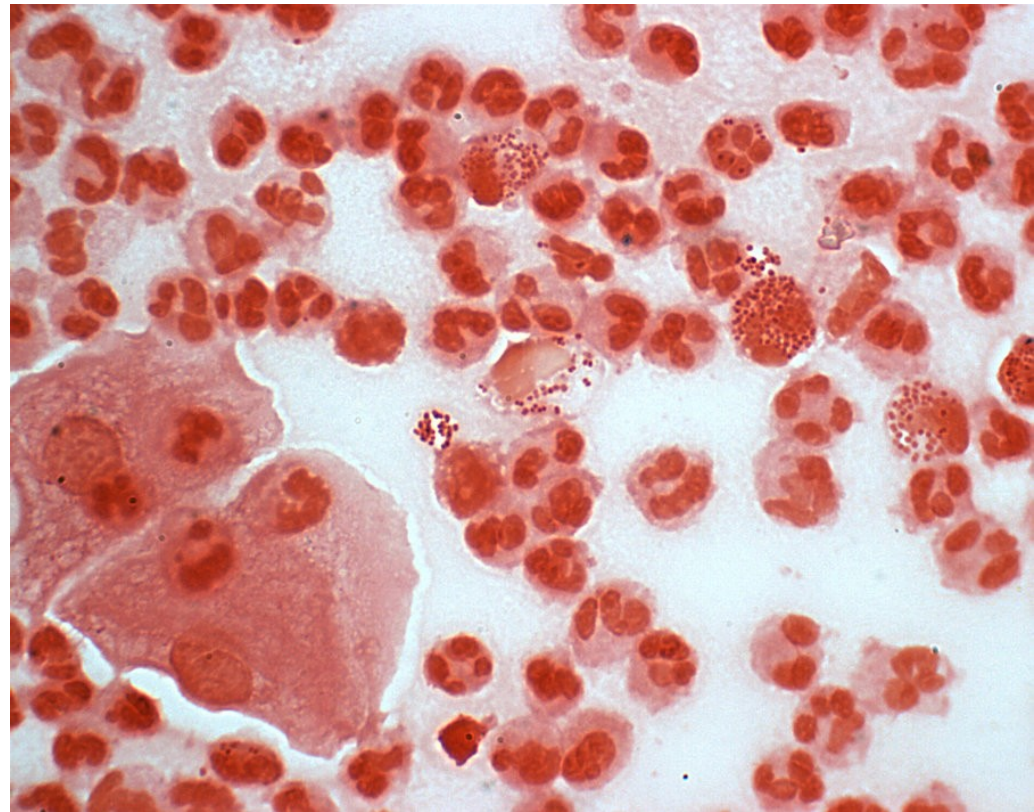
- **Culture** – blood agar
at 36 dC, CO₂ rich atm.
gray colonies

- identification – *oxidase* reaction and others

- ATB sensitivity (PNC, cefalosporins, TTC)

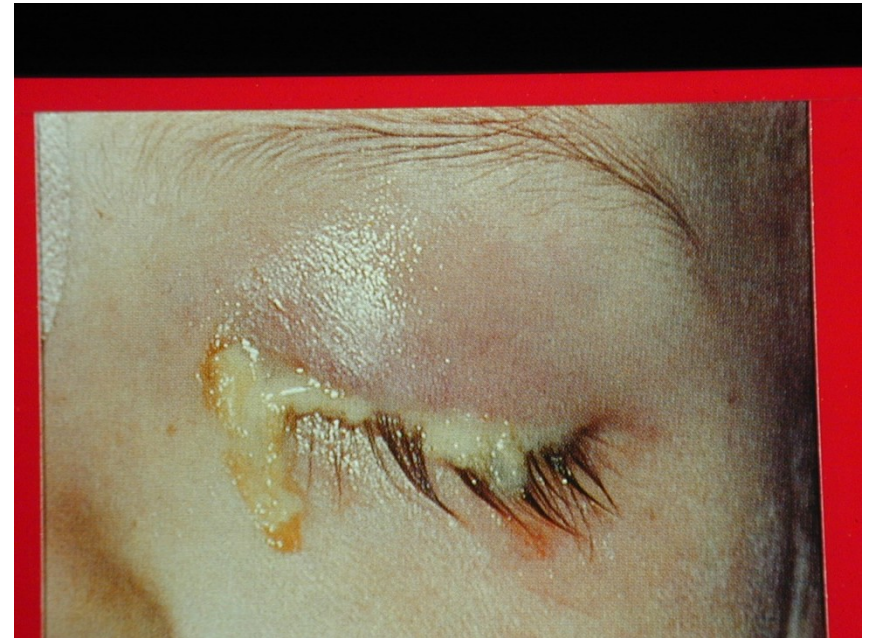
- Serology: unreliable

- 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.

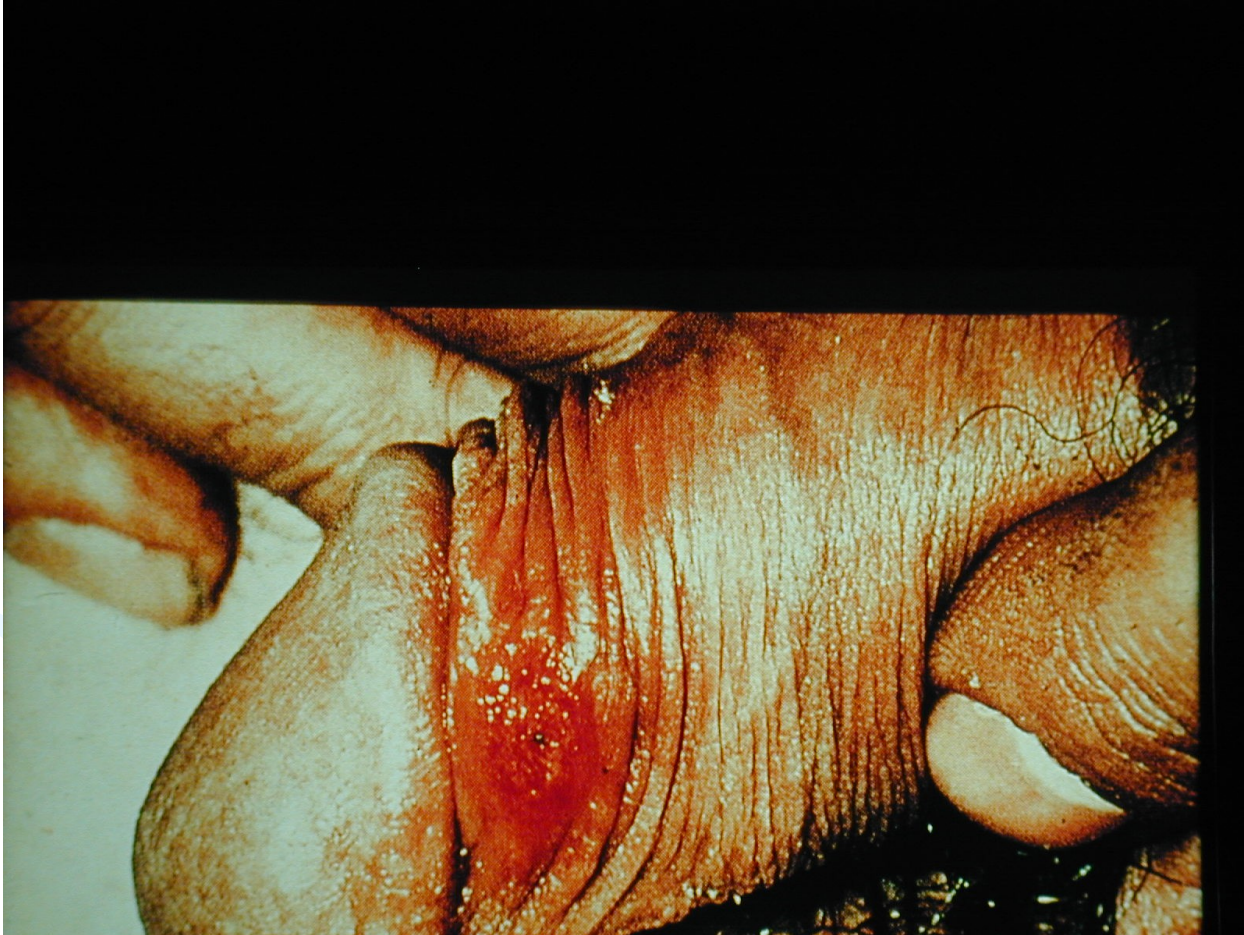
Complicated, chronic go:

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

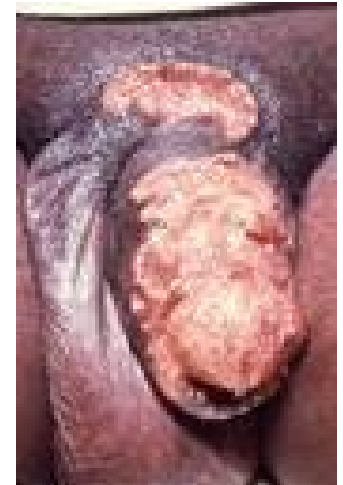


Granuloma inguinale

- 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

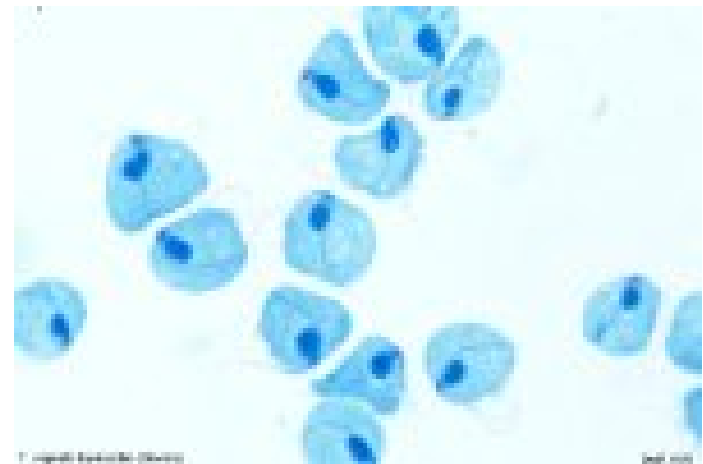
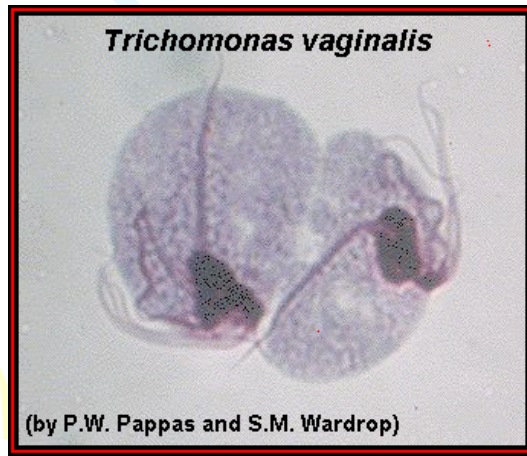
- transfer during sex but also via objects /sponges, wet towels/

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

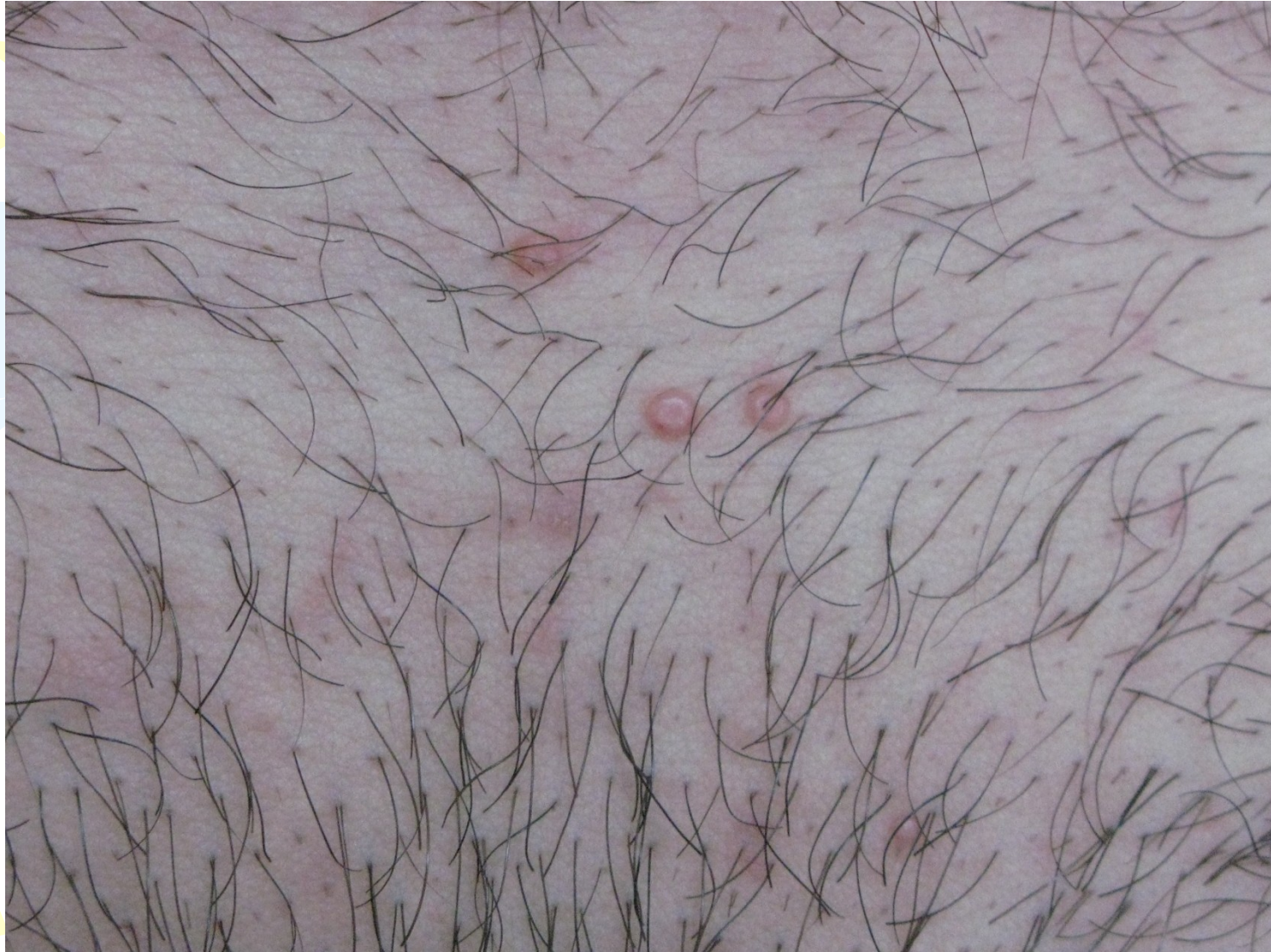


c) Moluscum contagiosum

- 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



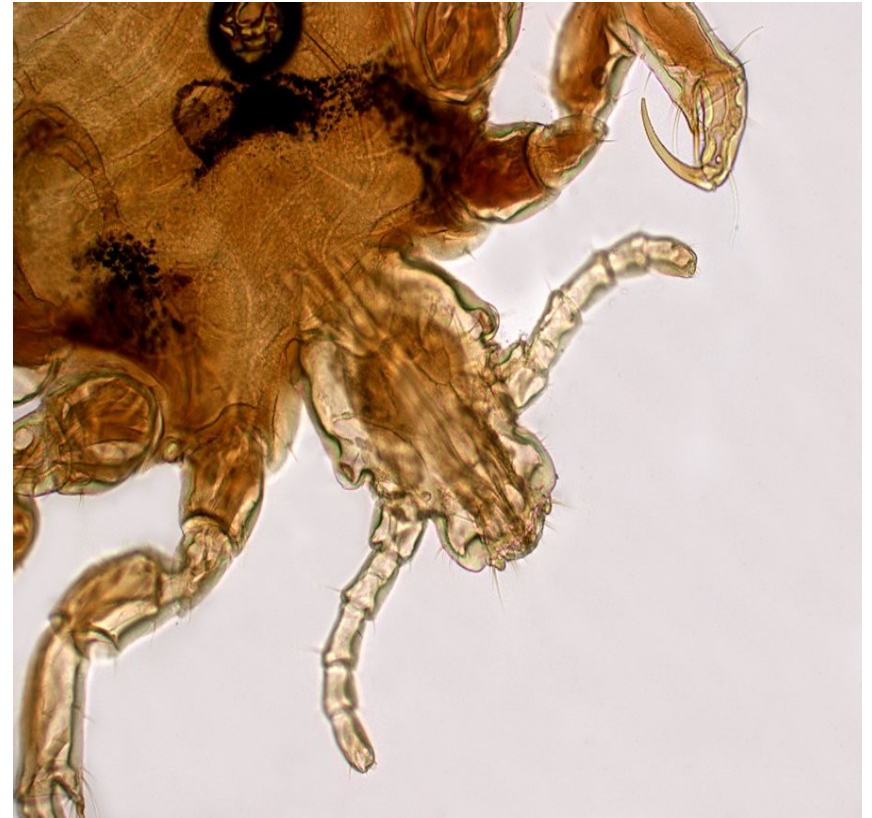
Moluscum contagiosum



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



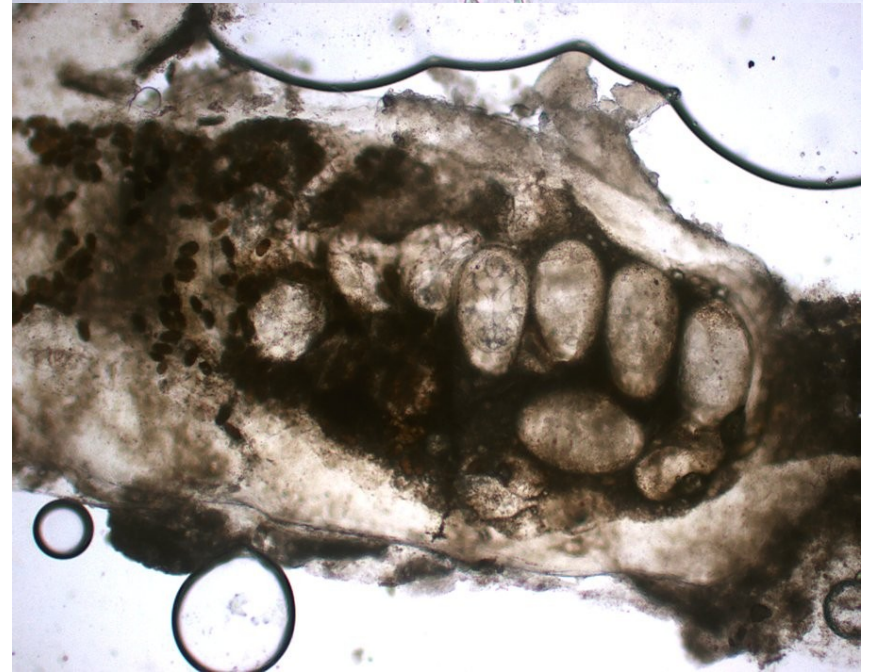
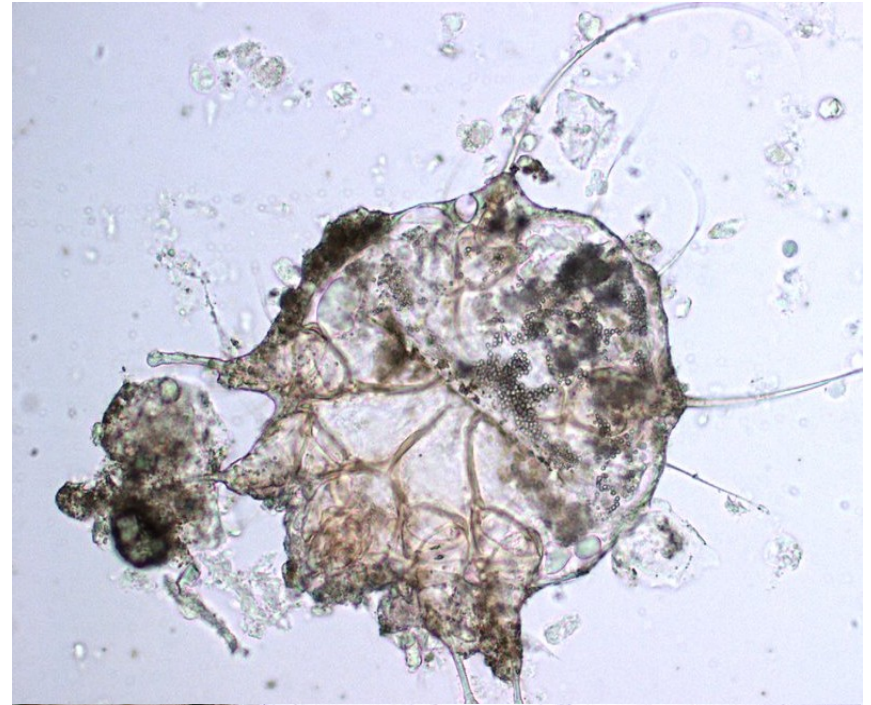
a) Phtiriasis

- 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 !!!

