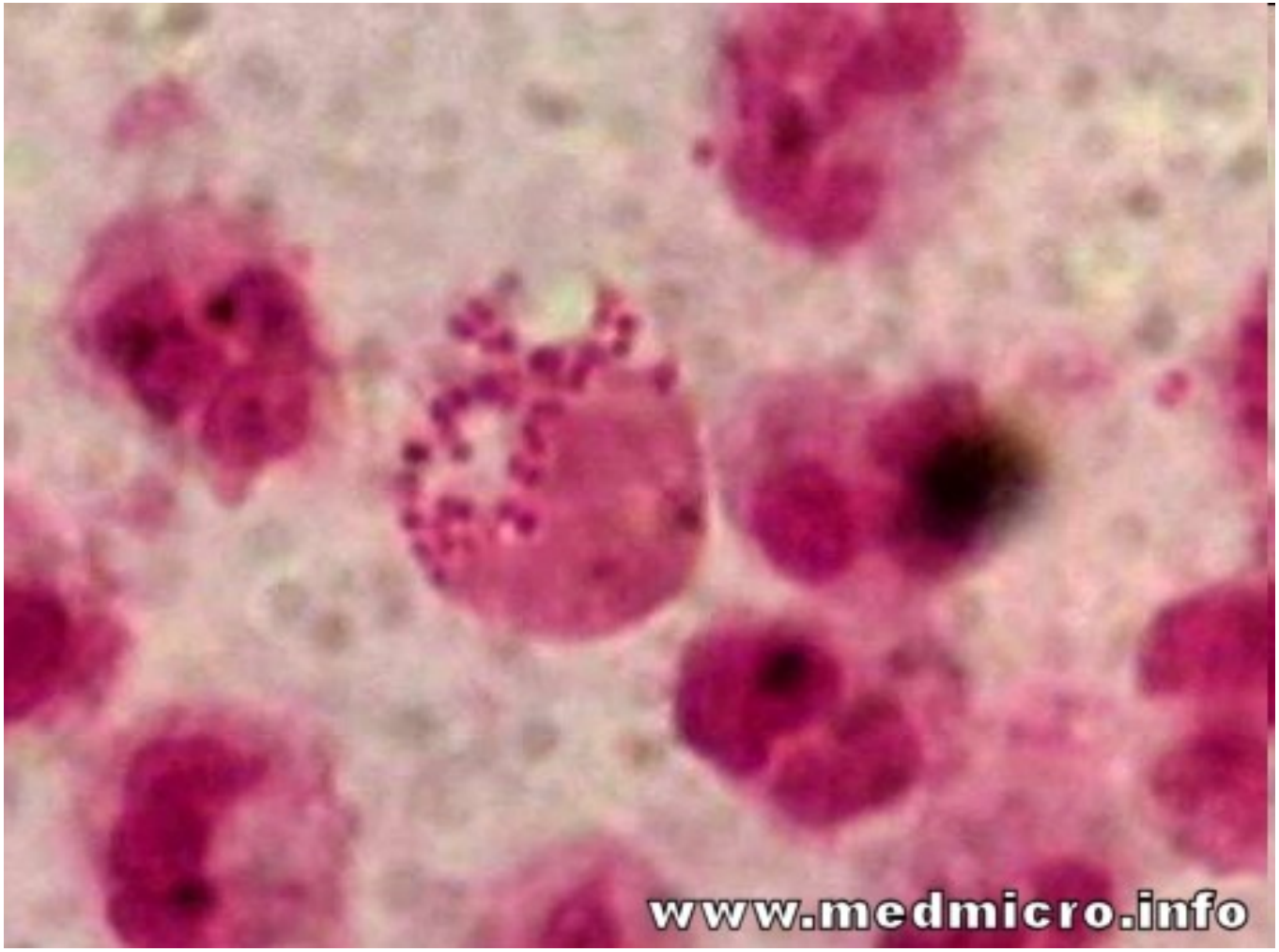
Institute for Microbiology, Medical Faculty of Masaryk University
and St. Anna Faculty Hospital in Brno

Agents of classical venereal infections

Classical venereal infections

- **Gonorrhoea (rudely: the clap)**
  Neisseria gonorrhoeae
- **Syphilis (in Central Europe also: lues)**
  Treponema pallidum
- **Chancroid (soft chancre, ulcus molle)**
  Haemophilus ducreyi
- **Lymphogranuloma venereum**
  ***Chlamydia trachomatis* L_1, L_2, L_{2a}, L_3**

Neisseria gonorrhoeae

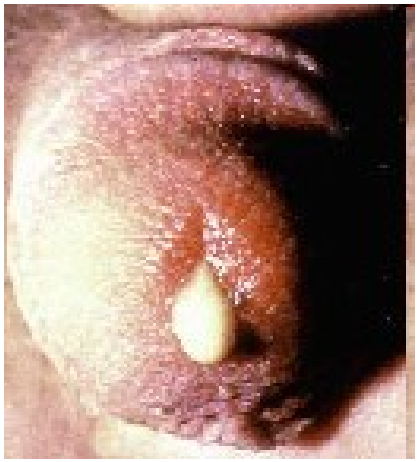


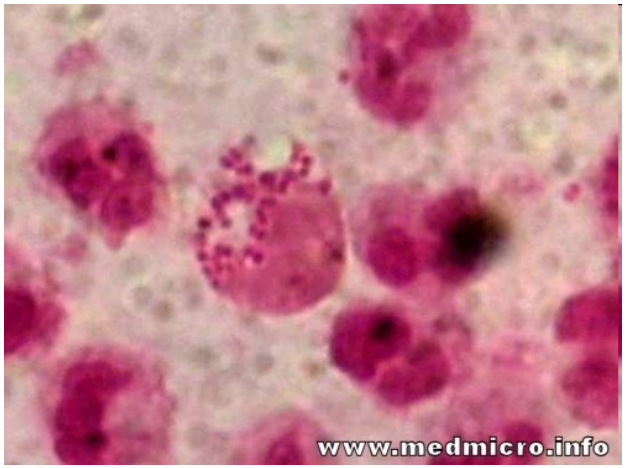
Clinical forms of gonorrhoea

1. Infections of lower parts of urogenital tract
2. Infections of upper parts of urogenital tract
3. Other localized infections
4. Rare gonococcal infections: disseminated ones
   (skin, arthritis, meningitis, endocarditis)

GO: infections of the UGT

- Urethritis
- Epididymitis





- Cervicitis
- Urethritis
- Bartholinitis
- Endometritis
- Salpingitis, adnexitis (PID, pelvic inflammatory disease) → sterility!

GO: other localized infections

and :

proctitis

pharyngitis

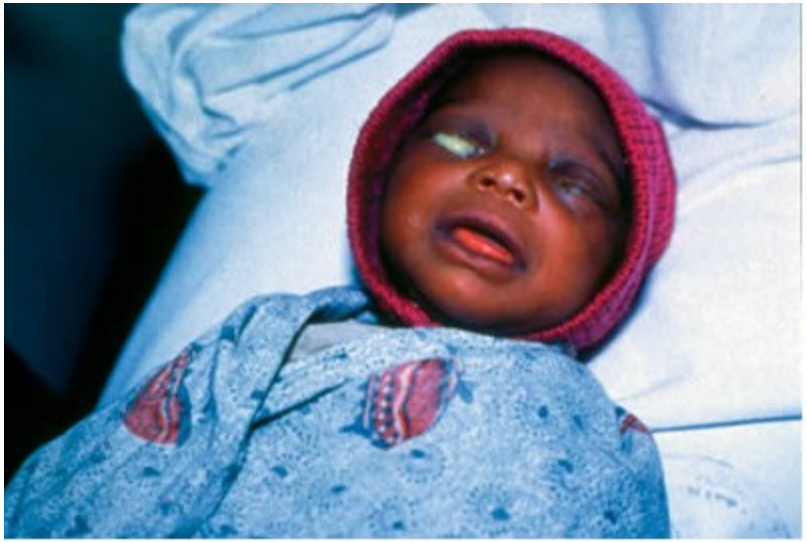
blenorrhoea neonatorum

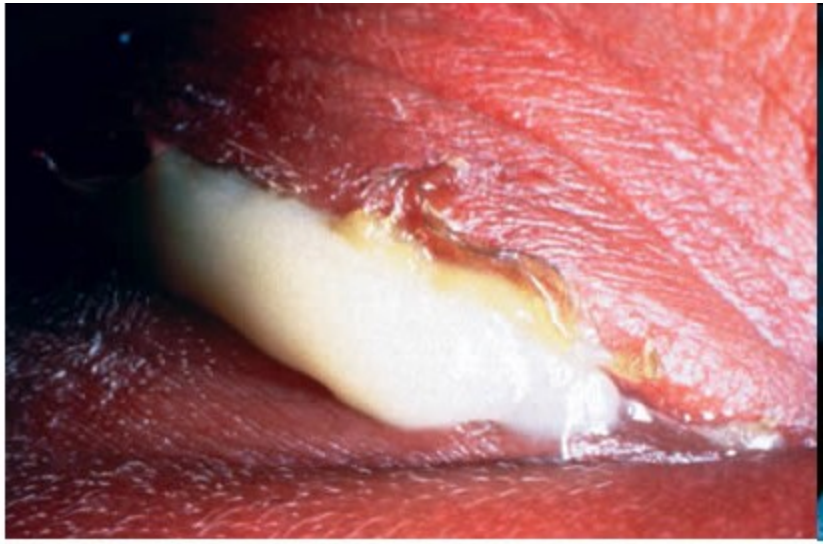
:

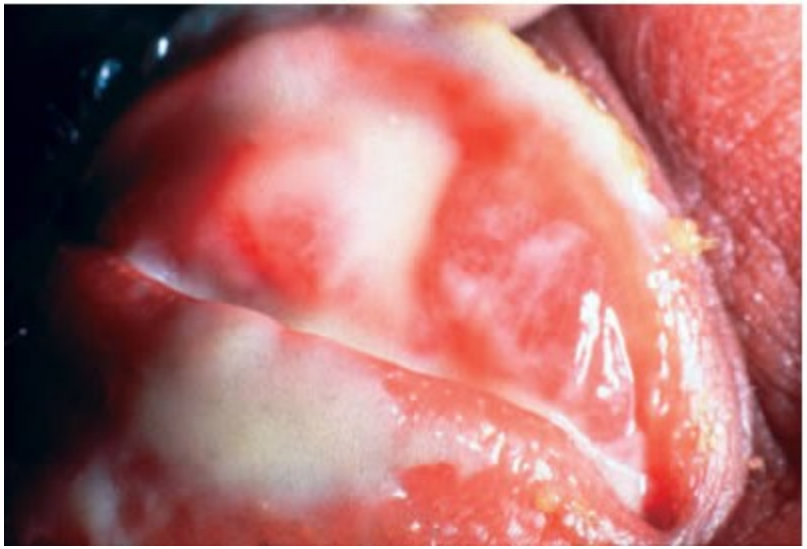
peritonitis (Fitz-Hugh syndrome)

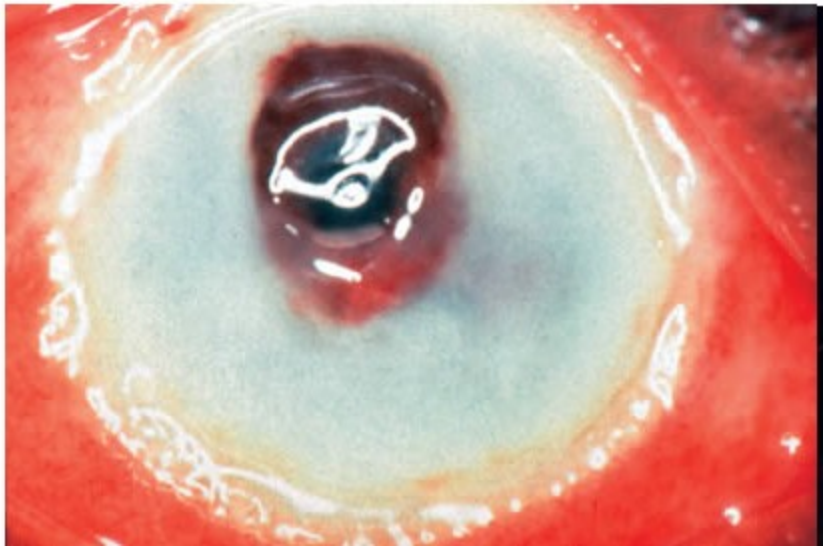
perihepatitis (Curtis syndrome)

Blenorrhoea neonatorum









www.cehjournal.org/extra/ts04_13.htm

GO: complications

⋮

prostatitis

periurethral abscesses

⋮

cervicitis chronica

tuboovarial abscess

adnexitis chronica → sterility

graviditas extrauterina

GO: laboratory diagnostics – I

Direct detection only:

microscopy

culture

molecular biology tests

Sampling places:

urethra

cervix, urethra, rectum, pharynx (if necessary)

GO: laboratory diagnostics – II

Way of sampling:

- **always 2 swabs**

  the first one inoculate directly on media (warmed, not from the fridge), or put it into a transport medium, transport it at ambient temperature, from the second one make a film on the slide

Microscopy (Gram):

important in acute gonorrhoea in males, symptomatic gonorrhoea in females


www.medmicro.info

GO: laboratory diagnostics – III

Media for gonococci:

Combine non-selective chocolate agar

with a selective medium with antibiotics

Always fresh (moist), with added CO_2 (candle jar), read after 24 and 48 hrs

Identification:

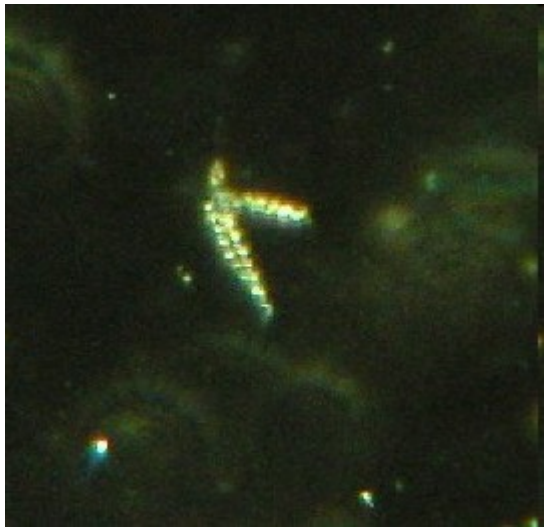
- **biochemistry (oxidase +, glucose +, maltose -)**
- **serology (slide agglutination)**
- **molecular biologic confirmation tests**

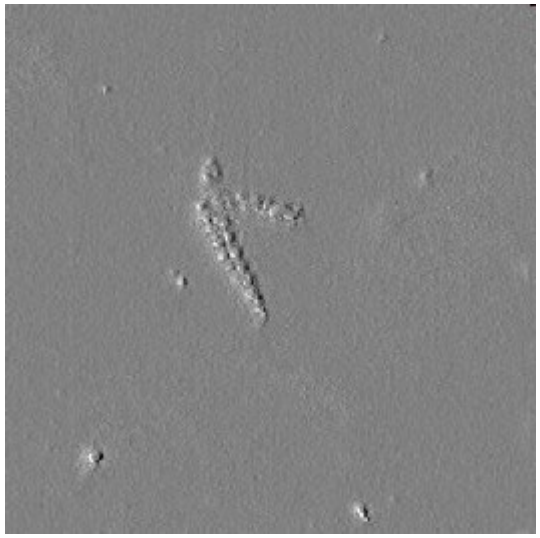
GO: therapy

Ceftriaxone or ciprofloxacin

usually in a single dose,
because of potential concurrent *Chlamydia trachomatis* infection: in a combination with doxycycline or azithromycine

Nowadays, many strains of *N. gonorrhoeae* are resistant to penicillin & tetracyclines





Author: MUDr. Petr Ondrovčík

Syphilis: course

From the very beginning: syphilis = systemic disease!

Early syphilis: primary (ulcus durum)
secondary (mostly rash)
early latent

Late syphilis: latent
terciary (gummas, aortitis,
paralysis progressiva,
tabes dorsalis)

Congenital syphilis: early and late

Syphilis: therapy

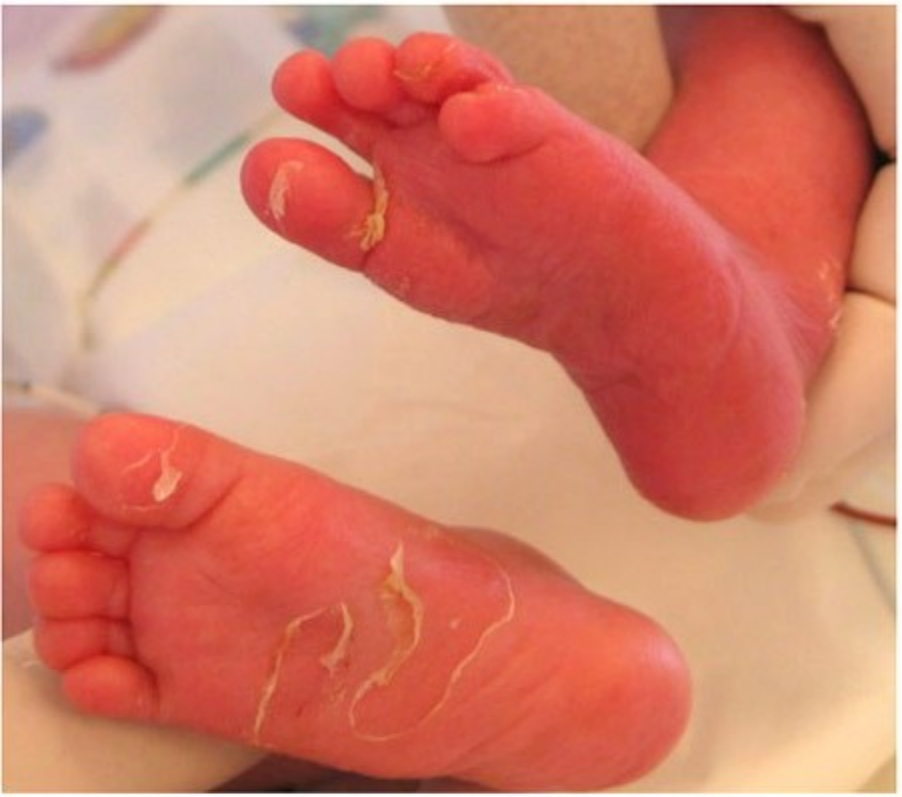
„One night with Venus, the rest of life with Mercury“

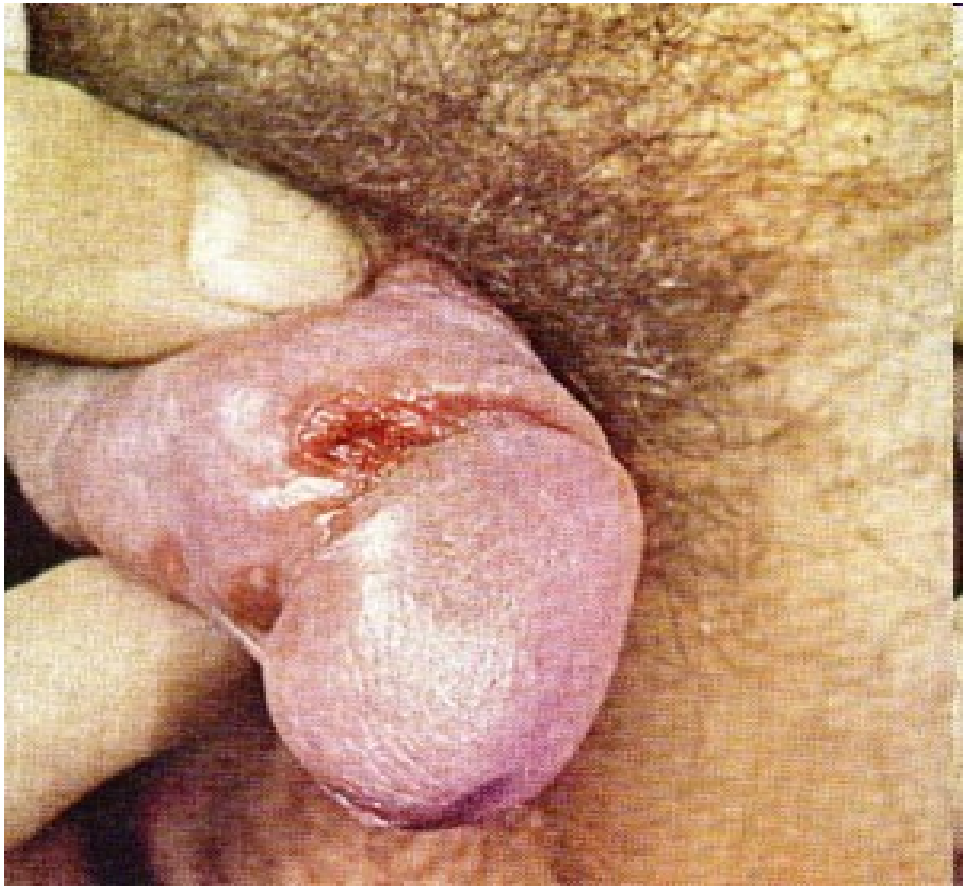
Ehrlich and Hata: preparation No 606 – salvarsan
von Jauregg: malaria (because of high fever)

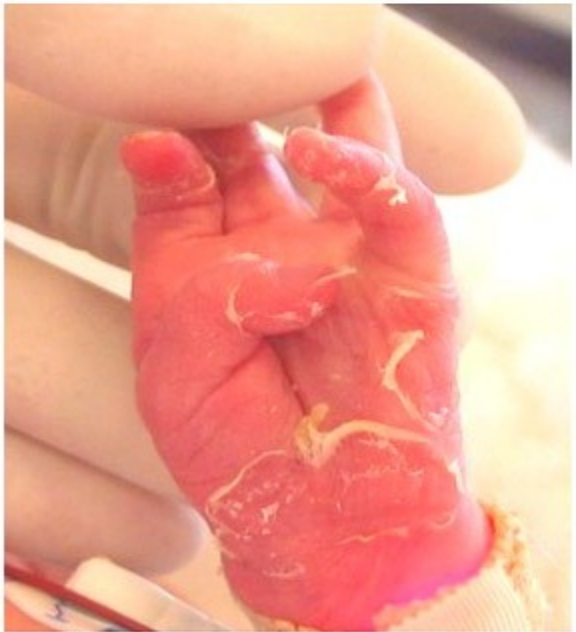
Nowadays, the drug of choice is penicillin

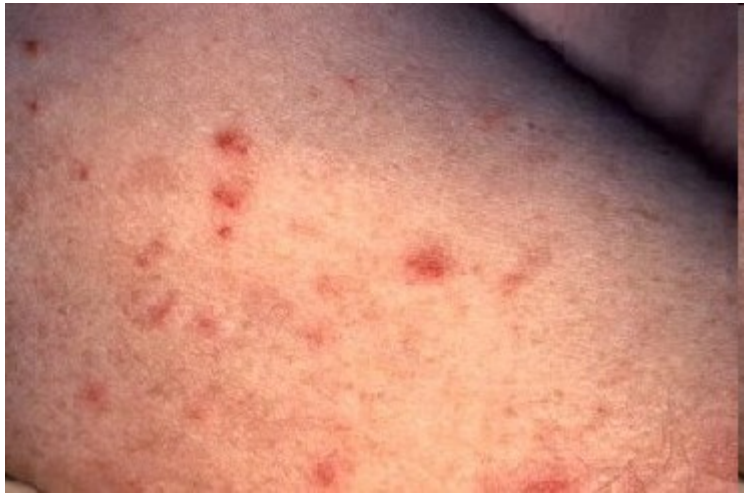
Primary syphilis:
benzathin penicillin (2,4 MIU) 1 dose

Secondary and late syphilis:
benzathin penicillin (2,4 MIU) 3 times after 7 days









Syphilis: laboratory dg – I

Direct detection

From exudative lesions only (mostly from ulcus durum)

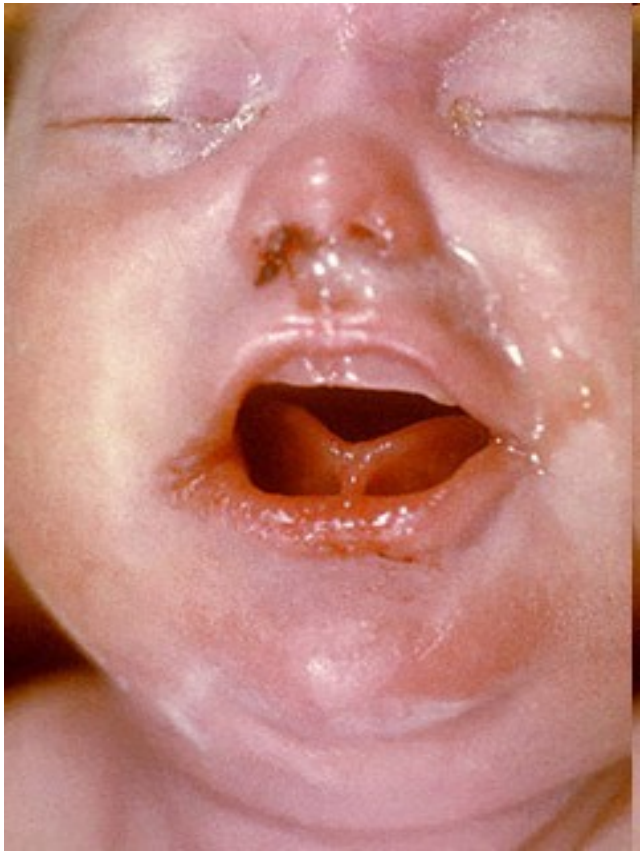
- darkfield examination
- PCR
- immunofluorescence

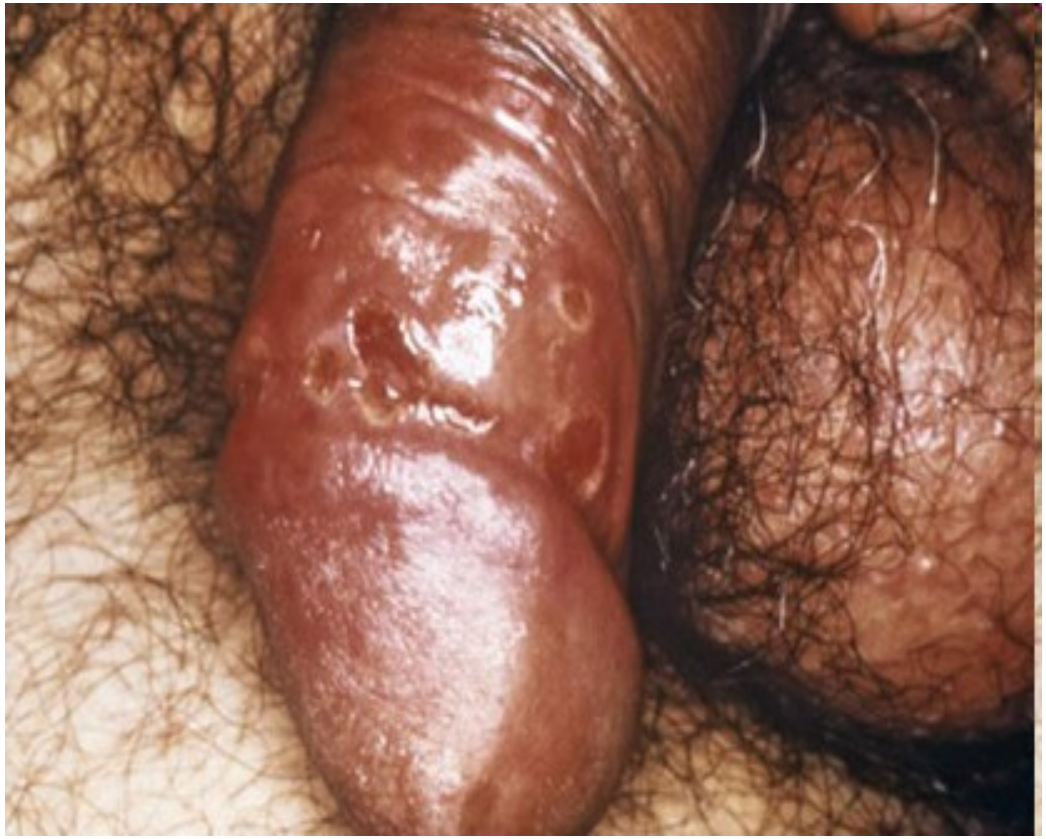
Indirect detection (serology)

= mainstay of laboratory diagnostics of syphilis

Two types of serologic tests:

- with nonspecific antigen (cardiolipin)
- with specific antigen (*Treponema pallidum*)





Syphilis: laboratory dg – II

Tests with cardiolipin (nontreponemal):

RRR, VDRL, RPR

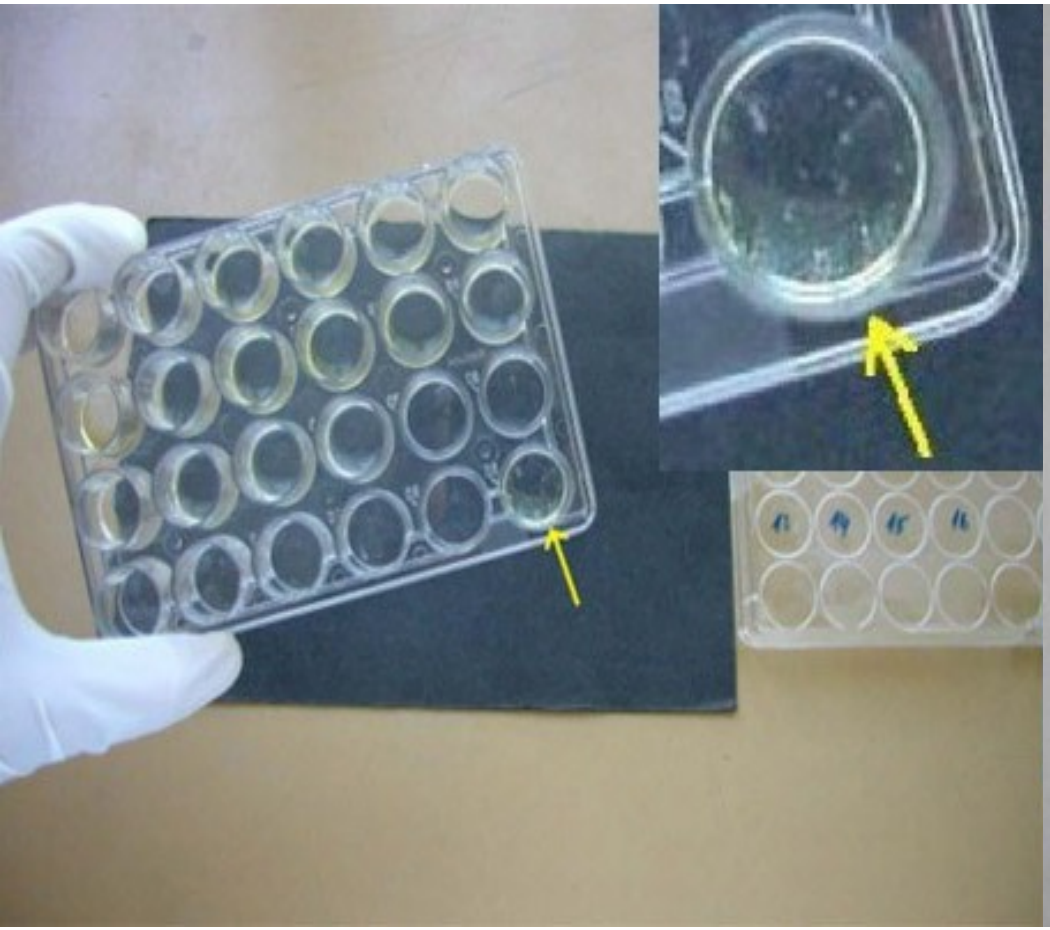
fast, cheap, positive early, reflecting the activity, but often falsely positive

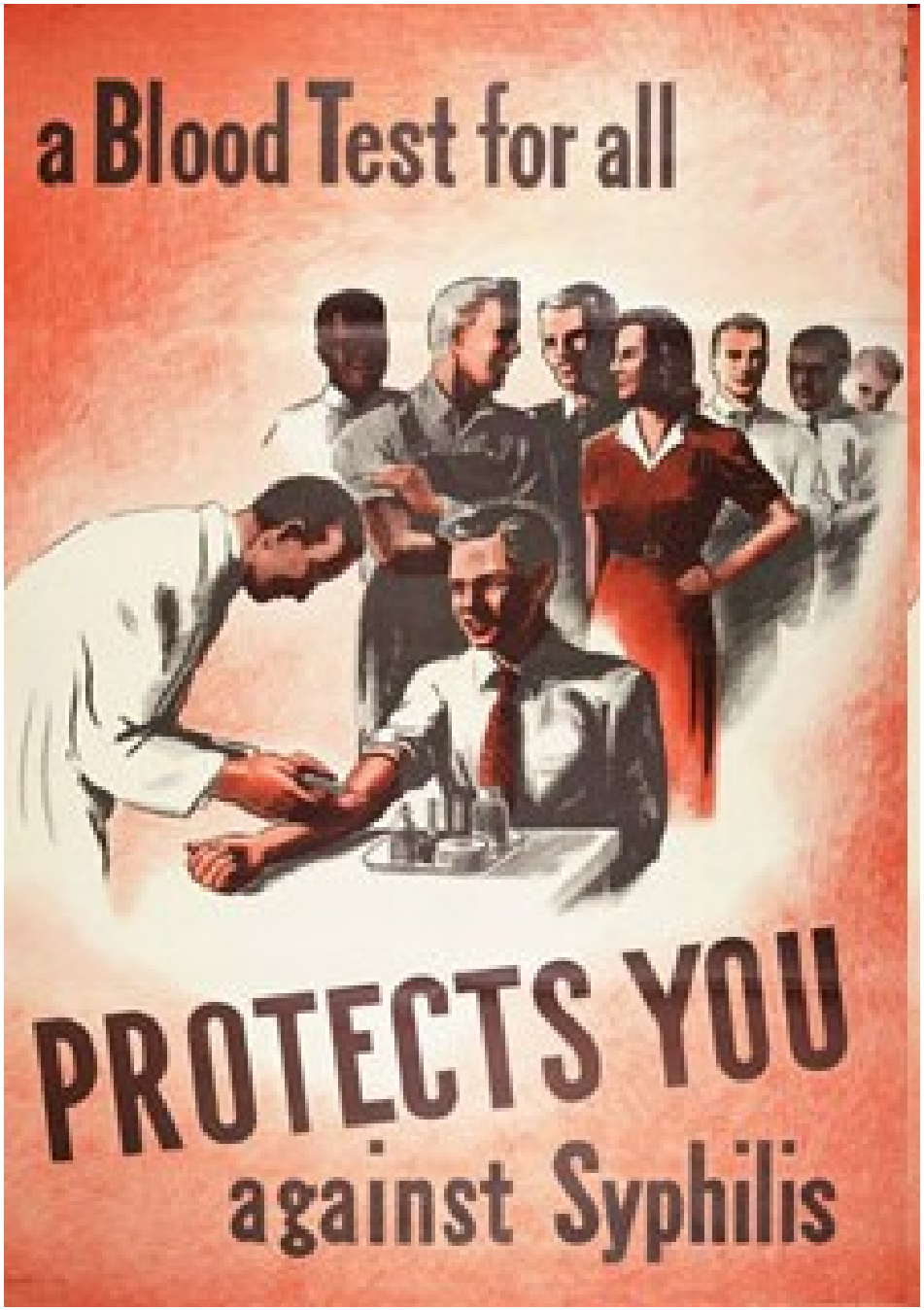
Treponemal tests:

TPHA, ELISA, WB, FTA-ABS, TPIT

sensitive, more expensive, more specific, but positive later, remaining positive for life

Screening: **cardiolipin test** (RRR) + **TPHA**





Poster, 1940

Soft chancre (chancroid)

Agent of ulcus molle: *Haemophilus ducreyi*

Occurrence: the tropics

Course: genital ulcerations (easier transmission of HIV) & purulent lymphadenitis

Dg: only culture on enriched media (chocolate agar with supplements), 3 days at 33 C in 10% CO_2

Lymphogranuloma venereum

Agent of LGV: *Chlamydia trachomatis* serotypes L_1, L_2, L_{2a}, L_3

Occurrence: the tropics and subtropics

Course: purulent lymphadenitis (tropical bubo) & lymphangoitis with fistulae & scars devastating the pelvic region in females

Dg: mostly serology – CFT with the common antigen of chlamydiae

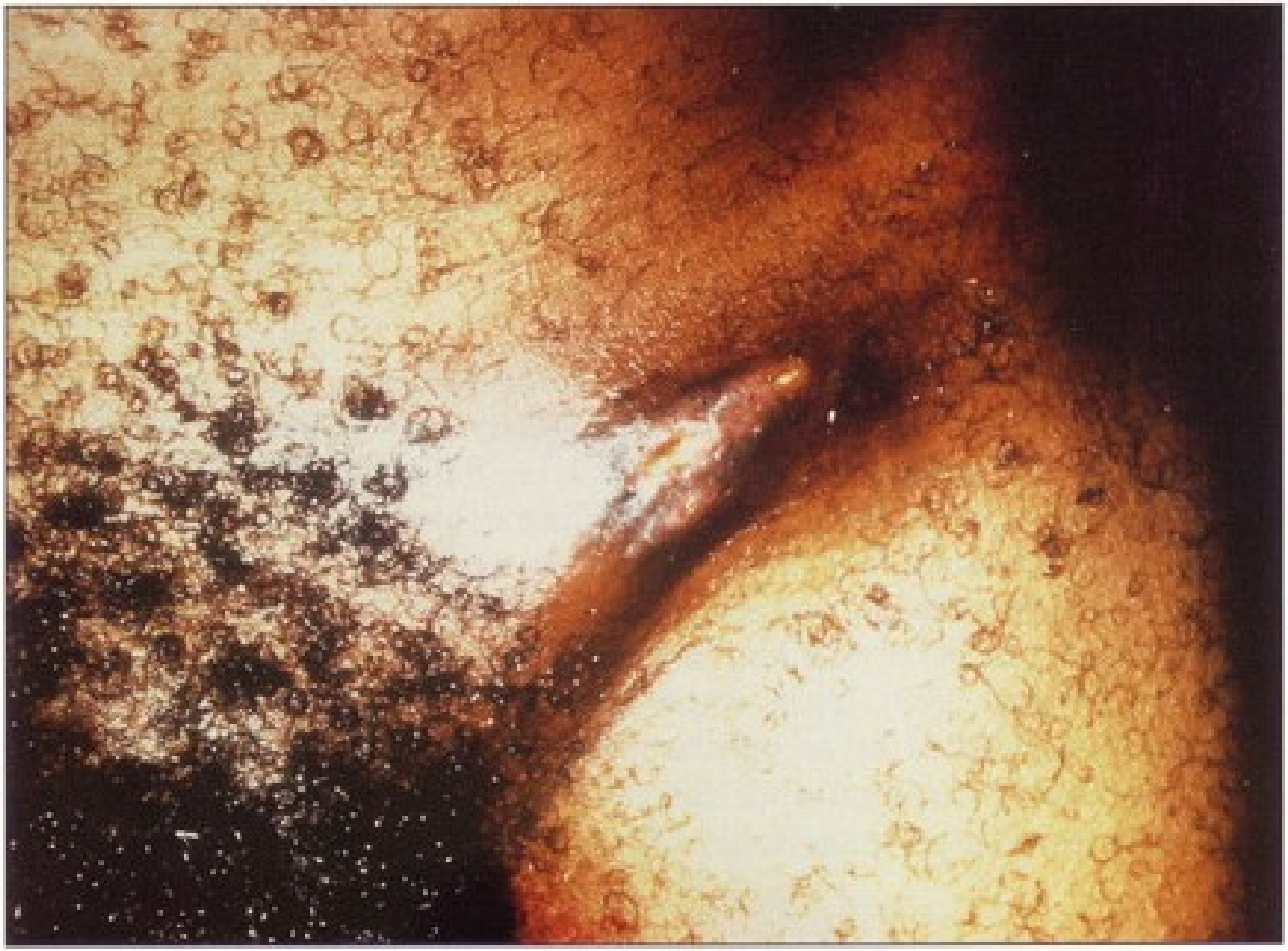


FIGURE 64.—Typical inguinal bubo in a patient with lymphogranuloma venereum. (Courtesy, Col. John J. Deller, Jr., MC.)

Homework 4 – solution

Gerrit van Honthorst (1590-1656): Dentist (1622)

Homework 5