NOTES
GENITOURINARY TRACT INFECTIONS

GENERALLY, WHAT ARE THEY?

PATHOLOGY & CAUSES

- Infections of genital/urinary tract

CAUSES
- Mostly bacteria

RISK FACTORS
- Recent sexual activity
- High-risk sexual behavior
- Previous genitourinary tract infections

COMPLICATIONS
- Pelvic inflammatory disease, infertility, pyelonephritis, epididymitis, prostatitis, sepsis, abscesses

SIGNS & SYMPTOMS

- Abdominal pain, altered vaginal/urethral discharge, dysuria, fever

DIAGNOSIS

LAB RESULTS
- Vaginal/urethral discharge microscopy
- Nucleic acid amplification tests (NAATs)

OTHER DIAGNOSTICS
- Clinical examination

TREATMENT

MEDICATIONS
- Antibiotic therapy

PELVIC INFLAMMATORY DISEASE

osms.it/pelvic-inflammatory-disease

PATHOLOGY & CAUSES

- Infection, inflammation of upper genital tract (uterus, ovaries, fallopian tubes) in individuals who are biologically female
- *Common pathogens:* *Chlamydia trachomatis*, *Neisseria gonorrhoeae*, vaginal flora bacteria (e.g. *Gardnerella vaginalis*); often polymicrobial
- Bacterial vaginosis (alteration in vaginal flora) present in ⅔ of PID cases
  - Anaerobic bacteria replace lactobacilli in vagina → enzyme production → degradation of cervical mucus, antimicrobial agents → infections spread
- Associated syndromes
  - Endometritis, salpingitis, oophoritis, peritonitis, perihepatitis (liver capsule inflammation), tubo-ovarian abscess
- Vaginal mucosa colonization → disruption of endocervical canal barrier → pathogens ascend to upper genital structures → inflammation

RISK FACTORS

- More common in individuals who are biologically female, < 25 years old, sexually active
- Multiple sexual partners
- Partner with sexually transmitted disease (STD)
- Personal history of PID/STD
- Unprotected sexual intercourse
- Cervix instrumentation (e.g. abortion)

COMPLICATIONS

- Recurrent PID, hydrosalpinx (fluid-filled fallopian tubes), pyosalpinx (infected fallopian tube filled with purulent matter), chronic pelvic pain, infertility, ectopic pregnancy, ovarian cancer

SIGNS & SYMPTOMS

Acute symptomatic PID

- Bilateral lower abdominal/pelvic pain
  - Abrupt onset during/after menstruation
  - Constant, aching
  - Worsens during sexual intercourse/movement
- Abdominal/pelvic organ tenderness
- Feeling of pelvic fullness
- Intermenstrual/postcoital bleeding
- Dysuria
- Low-grade fever
- Rebound tenderness, fever, ↓ bowel sounds (severe)

Chronic PID

- Low-grade fever, weight loss, abdominal pain

Perihepatitis (Fitz-Hugh–Curtis syndrome)

- Right upper quadrant pain, tenderness

DIAGNOSIS

DIAGNOSTIC IMAGING

Pelvic/abdominal ultrasound

- Fluid-filled fallopian tubes with cogwheel sign (thickened loops on cross-section)
- Endometrium changes (e.g. wall thickening)
- Tubo-ovarian abscess (thick walls, multilocular cyst)

LAB RESULTS

- Vaginal discharge microscopy
  - Saline microscopy, Gram stain
  - ↑ leukocytes
  - Clue cells (epithelial cells surrounded by bacteria) in bacterial vaginosis
- Nucleic acids amplification tests (NAATs)
  - *C. trachomatis*, *N. gonorrhoeae*
- Tissue biopsy
  - ↑ plasma cells, neutrophils (inflammation)
- Leukocytosis, ↑ C-reactive protein (CRP), ↑ erythrocyte sedimentation rate (severe)

OTHER DIAGNOSTICS

- Speculum exam
  - Mucopurulent cervical discharge (positive swab test)

TREATMENT

MEDICATIONS

Broad-spectrum antibiotic therapy

- Inpatient (parenteral)
  - Cefoxitin/cefotetan (cephalosporin) + doxycycline (tetracycline)
  - Clindamycin (lincosamide) + gentamicin (aminoglycoside)
- Outpatient
  - Ceftriaxone/cefoxitin (cephalosporin) + doxycycline (tetracycline)
- Pelvic abscess
  - Clindamycin/metronidazole + doxycycline

Antiemetic medication

- E.g. metoclopramide

Antipyretic medication

- E.g. acetaminophen

OTHER INTERVENTIONS

- Prevention
  - Barrier contraception (e.g. condoms)
  - Abstinence

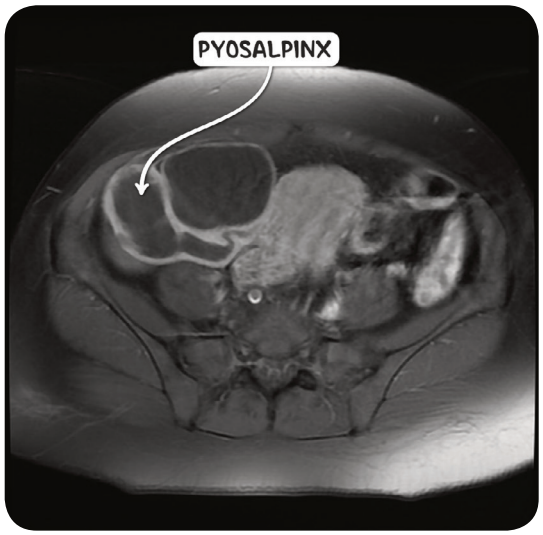

Figure 125.1 An MRI scan of the pelvis in the sagittal plane demonstrating a right-sided pyosalpinx.

URETHRITIS

osms.it/urethritis

PATHOLOGY & CAUSES

- Inflammation of urethra; more common in individuals who are biologically male with sexually transmitted diseases
- Common coinfection with other STDs
- *Incubation period:* 4–8 days

CAUSES

- Infectious urethritis (most common)
  - *Gonococcal:* *Neisseria gonorrhoeae*
  - *Non-gonococcal:* *Chlamydia trachomatis* (most common), *Mycoplasma genitalium*
- Non-infectious urethritis
  - Chemical irritation (e.g. soaps, spermicides)
  - Trauma

RISK FACTORS

- Individuals who are biologically male, young
- Multiple sexual partners
- Partner with sexually transmitted disease (STD)
- Unprotected sexual intercourse

COMPLICATIONS

- Reactive arthritis related to *C. trachomatis*, gonococcal conjunctivitis, epididymitis, prostatitis, penile lymphangitis, periurethral abscess

SIGNS & SYMPTOMS

- Sometimes asymptomatic
- Dysuria
- Urethral pruritus, discharge (mucoid, watery, purulent)
- Inflammation/edema of urethral meatus

DIAGNOSIS

LAB RESULTS

- Diagnosis criteria (≥ one)
  - Mucopurulent/purulent urethral discharge
  - ≥ one leukocyte per oil immersion field in Gram stain of urethral discharge
  - Positive leukocyte esterase, ≥ 10 leukocytes per high-power field (first-catch urine)
- NAATs
  - *C. trachomatis*, *N. gonorrhoeae*
- Urethral discharge microscopy (e.g. Gram stain)

OTHER DIAGNOSTICS

- Clinical examination
  - *Gonorrhoea:* purulent discharge
  - *Chlamydia:* isolated dysuria
  - *Herpes simplex virus (HSV):* dysuria + painful genital ulcers

TREATMENT

MEDICATIONS

Antibiotic therapy

- Gonococcal urethritis
  - Ceftriaxone (cephalosporin) + azithromycin (macrolide)
- Non-gonococcal urethritis
  - Azithromycin or doxycycline (tetracycline)
  - Azithromycin/moxifloxacin (persisent)

OTHER INTERVENTIONS

- Prevention
  - Barrier contraception (e.g. condoms)
  - Abstinence