King Saud University Medical City
Department of Obstetrics & Gynecology
Course 482

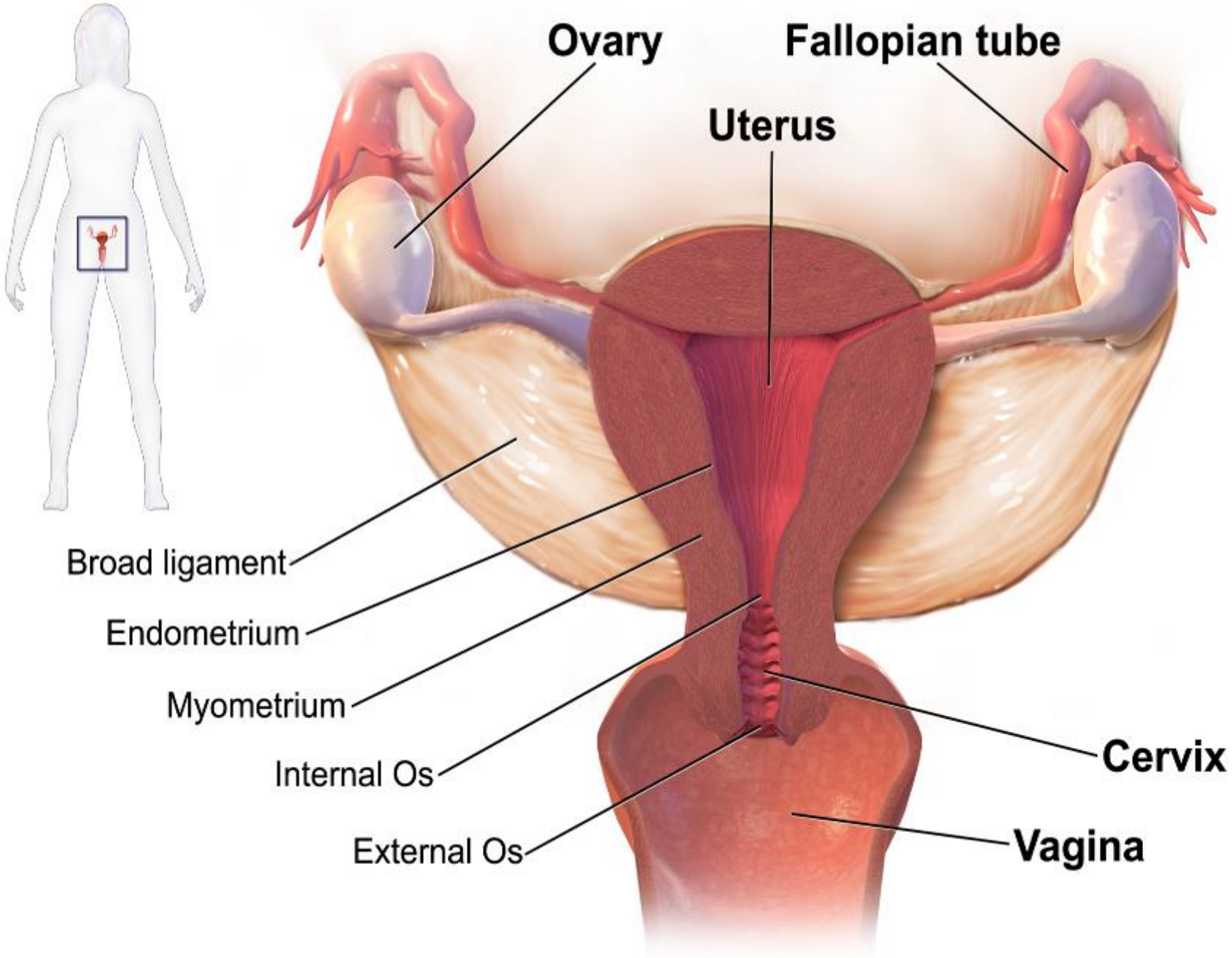
Pelvic Inflammatory Disease / Pelvic Abscess

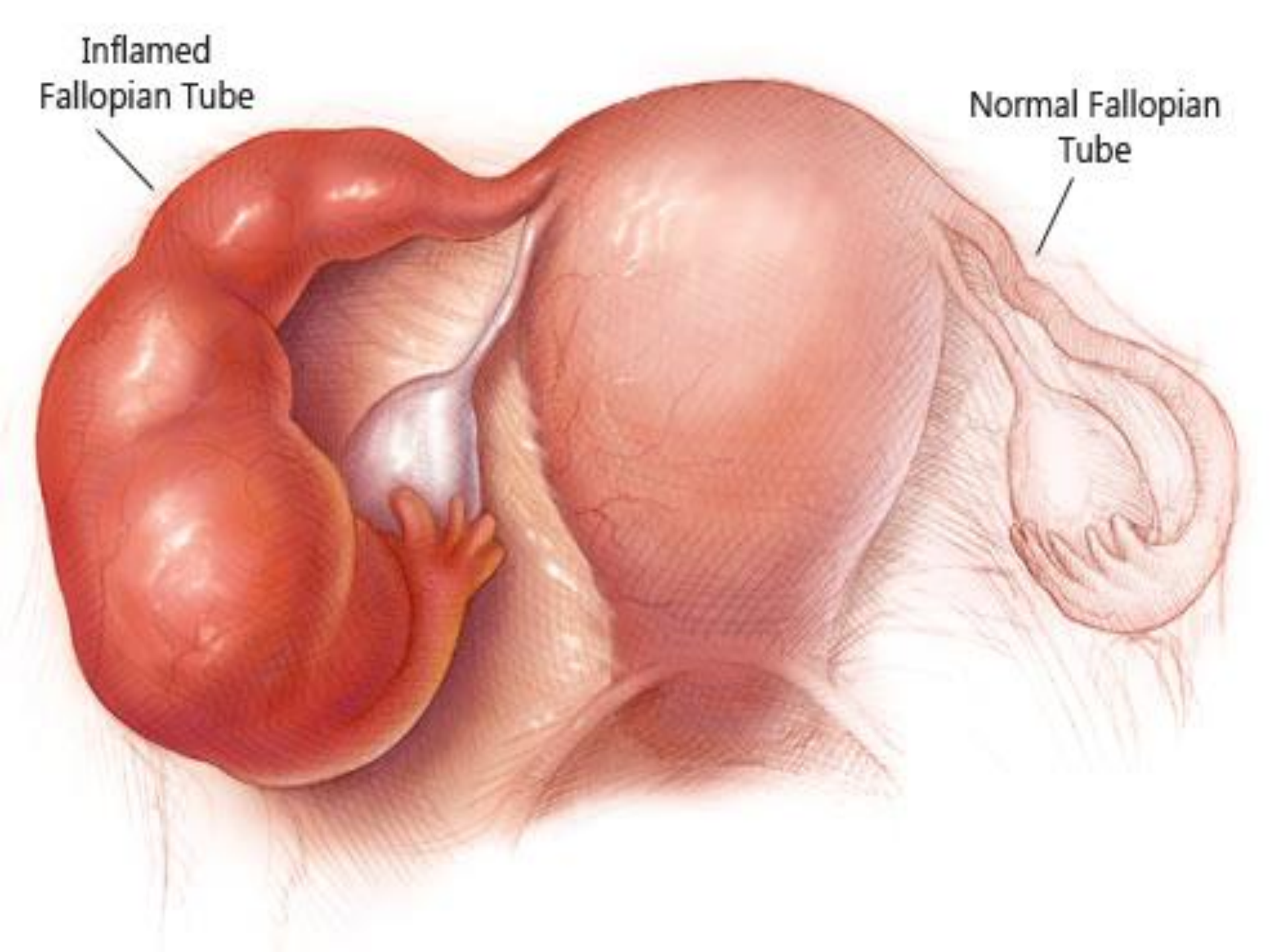
Outline

* Identify the prevalence of Pelvic Inflammatory Disease (PID)
* Explain the etiology and pathogenesis of PID
* Describe the symptoms and signs of PID / Diagnosis
* Describe the management of PID
* Discuss the tubo-ovarian abscess
* List the complications of PID

PID

Pelvic Inflammatory Disease presents as a spectrum of infection-induced inflammation of the upper genital tract that includes endometritis, salpingitis, pelvic peritonitis, and/or tubo-ovarian abscess (TOA).


Ovary
Fallopian tube
Uterus
Broad ligament
Endometrium
Myometrium
Internal Os
External Os
Cervix
Vagina


Inflamed
Fallopian Tube
Normal Fallopian
Tube

PID

Most often , ascending spread of microorganisms from vagina & endrocervix to endometrium, tubes, contiguous structures.

The Prevalence of PID

* The CDC has estimated that more than 1 million women in the USA experience an episode of PID every year.
* The disease leads to approximately 2.5 million office visits and 125,000-150,000 hospitalizations yearly.
* No specific international data is available for PID incidents worldwide.
* The annual rate of PID in high-income countries has been reported to be as high as 10-20 per 1000 women of reproductive age.

Etiology

* 85% of infection in sexually active female of reproductive age
* 15% of infection occur after procedures that break mucous barrier
* Bacteria culture direct from tubal fluid common: N. gonorrhoeae, C. trachomatis, endogenous aerobic, anaerobic, genital mycoplasma spp.

Etiology

* **Nisseria gonorrhoeae**
* **C. trachomatis**
* **Mycoplasma genitalium**
* **Polymicrobial flora**
  - *Prevatella sp.*
  - *Peptostreptococcus sp.*
  - *Escherichia*
  - *Anaerobic gram-negative rods.*

Pathogenesis of PID

* C. trachomatis
  - Produce mild form of salpingitis
  - Slow growth (48-72 hours)
  - Intercellular organism
  - Insidious onset
  - Remain in tubes for months or years after initial colonization of upper genital tract
  - More severe tubes involvement

* N. Gonorrhoeae
  - Gram –ve diplococcus
  - Rapid growth (20-40 minutes)
  - Rapid and intense inflammatory response
  - 2 Major sequelae [Infertility and ectopic pregnancy, strong association with prior chlamydia infection]

Risk factors

* Strong correlation between exposure to STD
* Age of 1st intercourse
* Frequency of intercourse
* Number of sexual partners
* Marital status; 33% in nulliparous

Risk factors

* Increase risk
  - IUD user (multifilament string)
  - Surgical procedure
  - Previous acute PID
* Reinfection if untreated male partner (80%)
* Decrease risk
  - Barrier method
  - OCP

Signs and symptoms of PID

* Abdominal pain
* Abnormal Discharge
* Intermenstrual bleeding
* Postcoital bleeding
* Fever
* Urinary frequency
* Lower back pain
* Nausea/vomiting

Diagnosis

Physical examination:

* Assess the abdomen for tenderness.
* Vaginal secretion examination to assess the presence of BV.
* Microscopy of the vaginal secretion should be examined for the presence of leukocytes, clue cells, and trichomonads.
* Cervical canal examination for the presence of yellow/green mucopus and friability.
* Testing for *C. trachomatis* and *N. gonorrhoeae*.
* A bimanual pelvic examination to assess for pelvic organ tenderness and pelvic mass (might suggest a TOA)

Other ancillary tests:

1. Lab tests:
   * A complete blood count
   * Erythrocyte sedimentation rate
   * C-reactive protein test

1. Imaging studies:
   * Pelvic ultrasonography (to rule out symptomatic ovarian cysts or those with pelvis mass noted on bimanual pelvic examination)
   * Computed tomography (to rule out appendicitis)

Dx

3. Laparoscopic visualization:
   * Most accurate method to confirm PID
   * All patients with uncertain diagnosis, no respond to treatment
   * Negative gram smear does not rule out PID

Management of PID

* Therapeutic goal: eliminate acute infection & symptoms as well as prevent long term sequalae.

1. **Mild to moderate PID**
   - Treat as outpatient
   - Aim at microbiologic cure for N. gonorrhoeae and C. trachomatis (even in the presence of negative endocervical screening for these organisms)
   - Coverage for polymicrobial flora associated with BV.
   - Antibiotic therapy

CDC recommended oral regime

Ceftriaxone 250 mg intramuscularly in a single dose
Plus
Doxycycline 100 mg orally twice a day for 14 days
With or without
Metronidazole 500 mg orally twice a day for 14 days
Or
Cefoxitin 2 g intramuscularly in a single dose and
Probenecid 1 g orally administered concurrently in a single dose
Plus
Doxycycline 100 mg orally twice a day for 14 days
With or without
Metronidazole 500 mg orally twice a day for 14 days
Or
Other parenteral third-generation cephalosporins (e.g., ceftizoxime or cefotaxime)
Plus
Doxycycline 100 mg orally twice a day for 14 days
With or without
Metronidazole 500 mg orally twice a day for 14 days

2. Severe PID & TOA:

- Hospitalization and impatient parentral therapy (criteria noted)
- Imaging should be considered
- Surgical intervention is recommended for those who failed to antibiotic therapy alone:
  - Size of the TOA with abscesses 10 cm or greater in diameter
  - Patient who fail to respond to antibiotic treatment within 48-72 hrs. (persistent fever, increasing leukocytosis)
  - Drainage of TOA via laprotomy, laparoscopy, or image-guided percutaneous routes)

Criteria for hospitalization in women with PID

* Surgical emergencies (e.g. appendicitis) cannot be excluded.
* Patient is pregnant.
* Patient does not respond clinically to oral antibiotic therapy.
* Patient is unable to follow/tolerate an outpatient oral regimen.
* Patient has severe illness, nausea and vomiting or high fever.
* Patient has a tubo-ovarian abscess.

Treatment

* Rx male partners & education for prevention reinfection

* Rx male partners: Regimens for uncomplicated gonorrhoeae & chlamydial infection
  - Ceftriaxone 125 mg im followed by
    - Doxycycline (100) 1x2 pc x7 days or
    - Azithromycin 1gm or
    - Ofloxacin (300) 1x2 pc x7 days

Complications of PID

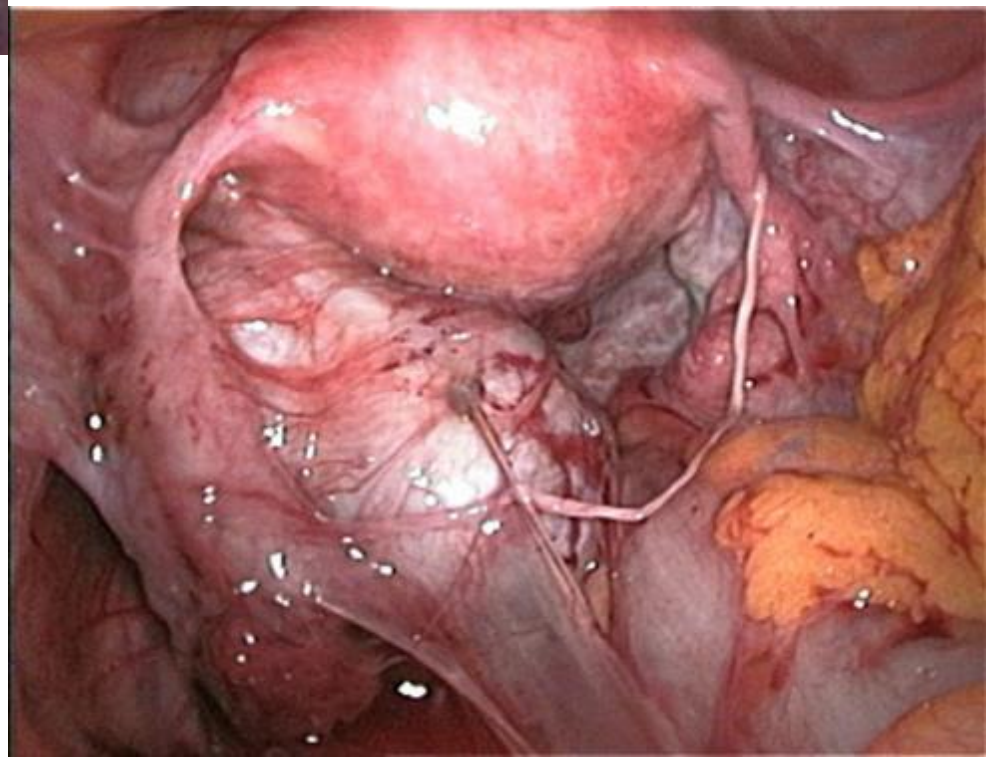
1. Chronic pelvic pain 25%
2. Infertility
3. Ectopic pregnancy (increased 15%-50%)

- PID may produce TOA and extend to produce pelvic peritonitis and Fitz-Hugh Curtis syndrome (perihepatisis)

- Acute rupture of TOA and peritonitis is a life threatening event that calls for urgent abdominal surgery.

← Perihepatitis

Peritonial adhesions →



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