Pelvic Inflammatory Disease

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3 May 2014
OBJECTIVES

- Definition
- Anatomy Review
- Epidemiology
- Risk factors
- Cervicitis
- Symptoms
- Exam
- Diagnosis
- Differential Diagnosis
- Treatment
- Complications
- Prevention
Pelvic Inflammatory Disease

* Ascending infection from the lower genital tract

* Spreads to reproductive organs, causing:
  * Endometritis
  * Salpingitis
  * Oophoritis
  * Pelvic peritonitis

* Potential for multiple and long-term complications

* Etiology: Untreated STDs causing cervicitis
  * Chlamydia trachomatis
  * Neisseria gonorrhea
Anatomy Overview
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Pelvic Inflammatory Disease
PID: Epidemiology

* Cases in US decreased from 189,662 in 2002 to 168,837 in 2003

* Clinic visits have dropped due to aggressive public health chlamydia screening and treatment programs

* Hospitalizations steadily declined from around 70,000 cases/year in 1998 to 45,000 cases/year in 2007
PID: Risk factors

* Untreated STDs
* Multiple partners
* Unfaithful partner
* Young sexually active
* History of PID
* Douche

* Intrauterine Devices
* Bacterial Vaginosis (increases overall risk of STDs)
* Sex during menses
Cervicitis

* Inflammation/infection of the cervix

* Most common infectious causes are chlamydia and gonorrhea
  * Other causes include both HSV and Trichomoniasis

* Usually associated with vaginitis
Cervicitis

* Symptoms/Exam:
  * Vaginal discharge
  * Red, inflamed and congested cervix
  * Strawberry cervix (Trichomoniasis)

* Differential:
  * Noninfectious cervicitis
  * Early neoplastic process
Cervicitis

* **Diagnosis:**
  * Physical exam and wet mount can aid in identification of cause

* **Treatment:**
  * Unless specific etiology is identified, treatment for both G&C is recommended
    * Ceftriaxone (250mg IM) and
    * Doxycycline (100 bid x 7) or
    * Azithromycin (1g x 1)
PID: Symptoms

* Lower abdominal/pelvic pain
* Vaginal complaints:
  * Abnormal discharge
  * Bleeding
  * Post coital bleeding
  * Dyspareunia
* Fever, malaise, nausea & vomiting
* Symptom onset 2-5 days after menstruation
**PID: Exam**

* Lower abdominal tenderness
* Mucopurulent cervicitis
* Cervical motion tenderness
  * Severe cervical tenderness = Chandelier sign
* Bilateral adnexal tenderness
  * Unilateral adnexal tenderness or unilateral mass suggests Tuboovarian abscess (TOA)
    * Use transvaginal U/S to rule out TOA in pts with PID and unilateral tenderness
PID: Diagnosis

☆ Major Criteria
  ☆ Lower abdominal pain/tenderness
  ☆ PLUS
  ☆ Cervical Motion Tenderness
  ☆ OR
  ☆ Uterine/Adnexal Tenderness
PID: Diagnosis

* Additional Criteria (increases specificity)
  * Fever > 38.3 C or > 101 F
  * Abnormal cervical/vaginal mucopurulent discharge
  * (+) cultures for Gonorrhea or Chlamydia
  * WBC > 10,000
  * Elevated CRP or ESR
PID: Definitive Diagnosis

- Histologic evidence of endometritis
- Imaging revealing:
  - Thickened fluid-filled tubes/oviducts
  - With/without free pelvic fluid or tuboovarian complex
- Consistent laparoscopic abnormalities:
  - Tubal erythema
  - Edema
  - Adhesions
  - Purulent exudate or cul-de-sac fluid
  - Abnormal fimbriae
PID: Differential Diagnosis

* Gastrointestinal:
  * Appendicitis
  * Cholecystitis
  * Constipation
  * Gastroenteritis
  * Inflammatory bowel disease

* Renal:
  * Cystitis
  * Pyelonephritis
  * Nephrolithiasis
  * Urethritis

* Obstetric/Gynecologic:
  * Dysmenorrhea
  * Ectopic pregnancy
  * Intrauterine pregnancy complication
  * Ovarian cyst
  * Ovarian torsion
  * Ovarian tumor
PID: Treatment

* Prompt Abx coverage for both G & C
  * Outpatient:
    * Ceftriaxone 250 IM +
    * Doxy 100 bid x 14d
  * Inpatient:
    * Cefotetan or
    * Cefoxitin + Doxy or
    * Clindamycin + Gentamycin (severe)
PID: Treatment

- Hospitalization if:
  - Pregnant
  - Immunosuppression
  - Documented/suspected pelvic abscess
  - IUD
  - Severe vomiting
  - Failed outpatient management

- Treatment of sexual partners is needed
- Refer all for HIV & syphilis testing
PID: Laparoscopy
Indications

* Acutely ill with high concern of competing diagnosis
* Acutely ill and failed outpatient treatment
* Not clearly improving after 72 hours of inpatient treatment
PID: Complications

- Fitz-Hugh-Curtis
- Pregnancy complications
- Chronic Pain
- Recurrent PID
- Hydrosalpinx
- Ovarian Cancer
PID: Complications

* Fitz-Hugh-Curtis or Perihepatitis
  * Inflammation of the liver capsule
  * Up to \( \frac{1}{4} \) of patients
  * Symptoms:
    * Sharp, pleuritic RUQ pain
    * Signs of salpingitis
  * Mimics
    * Cholecystitis
    * Pyelonephritis
PID: Complications

* Pregnancy difficulties
  * Infertility
    * 1 and 8 women with previous PID will have difficulty getting pregnant
    * 2x increase if recurrent PID
  * Ectopic pregnancy

* Most preventable cause of
  * Infertility
  * Unfavorable pregnancy outcome
PID: Complications

* Chronic Pain
  * At least six months duration
  * Occurs below the umbilicus
  * Severe enough to cause functional disability
  * 1/3 of women with PID
  * Caused by scarring/adhesions from inflammation related to infectious process
  * 4x increase risk with recurrent PID
PID: Complications

* Recurrent PID
  * Adolescents are 50% more likely than adults

* Hydrosalpinx
  * Damaged fallopian tube becomes blocked, fills with sterile fluid, and enlarges
  * Causes pain or may be asymptomatic
  * Causes infertility

* Ovarian Cancer
  * Some studies show 2x increase risk
PID: Prevention

* Condoms
* Progestins
  * Thickens cervical mucus
    = barrier to ascending infection
* Oral contraceptive pills
  * Controversial
* Avoid Risk Factors
QUIZ

* Name reasons why you should hospitalize a pt with PID (6)

* State the addition criteria of PID

* PID that goes untreated can be complicated by what disease process?
QUIZ

* Reasons why a patient should be hospitalized for PID
  * Pregnant
  * Immunosuppression
  * Documented or suspected pelvic abscess
  * IUD
  * Severe vomiting
  * Failed outpatient management

* State the additional criteria of PID (5)

* PID that goes untreated can be complicated by what disease process?
**QUIZ**

* Name 3 reasons why you should hospitalize a pt with PID

* State the additional criteria of PID
  * Fever > 38.3 C or > 101 F
  * Abnormal cervical/vaginal mucopurulent discharge
  * (+) cultures for Gonorrhea or Chlamydia
  * WBC > 10,000
  * Elevated CRP or ESR

* PID that goes untreated can be complicated by what disease process?
PID that goes untreated can be complicated by what disease process?

* Fitz-Hugh-Curtis Syndrome
Resources


* Epocrates


