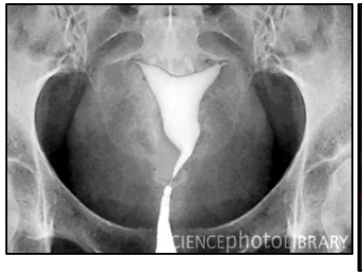
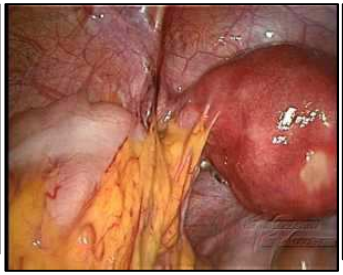
Pelvic Inflammatory Disease

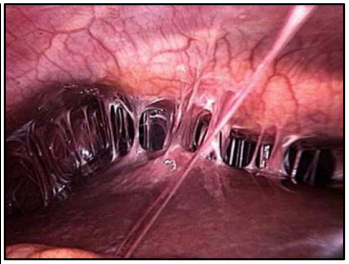
- **Pelvic inflammatory disease (PID)** is a general term for infection of the upper genital tract, including the uterus, fallopian tubes and ovaries.
- **Epidemiology**
  - Believed to affect **1-3% of sexually active young women** (many cases go undetected)
  - Chlamydia is the commonest STI diagnosed in GUM clinics in the UK
  - Gonorrhoea is also increasing in incidence and becoming a more common cause of PID
- **Risk factors**
  - STI risk: age <25, low SEP, previous STIs, new sexual partner, multiple sexual partners, lack of barrier contraception
  - Uterine instrumentation: first 3 weeks after IUD insertion, TOP, diagnostic hysteroscopy
  - Recent childbirth: vaginal delivery or Caesarean section
  - ***Barrier contraception, OCP use and Mirena IUS are protective***
- **Causative organisms**
  - *Chlamydia trachomatis*
  - *Neisseria gonorrhoeae*
  - Endogenous aerobic and anaerobic vaginal flora, especially organisms associated with bacterial vaginosis e.g. *Gardnerella vaginalis*, *Mycoplasma hominis*, *Mobiluncus*, *Actinomycetes*
  - Aerobic streptococci
  - *Mycobacterium tuberculosis*
  - Infections are often polymicrobial
- **Aetiology**
  - Usually results from **ascending infection from the cervix**, which is a recognised complication of STIs such as chlamydia and gonorrhoea
  - **Postpartum endometritis** results from direct infection of the uterus during childbirth
  - Descending infection can also occur e.g. from the appendix
  - Haematogenous spread of infection
  - Lymphatic spread of infection (e.g. *M. tuberculosis*)
  - Infection and inflammation can damage the fallopian tubes and tissues in or near the uterus and ovaries, resulting in scarring, fibrosis and the formation of adhesions
- **Symptoms**
  - Many cases are asymptomatic
  - **Lower abdominal and pelvic pain**: this can present acutely or as chronic pelvic pain
  - **Deep dyspareunia**
  - **Abnormal vaginal bleeding** e.g. menorrhagia, irregularity, PCB, IMB, PMB
  - **Vaginal discharge**: this may be purulent and foul-smelling
  - May present as **subfertility**
  - Women with acute PID may feel systemically unwell with fever, chills, malaise etc…
- **Signs**
  - Examination is often normal in chronic PID; in acute cases there may be a **fever (often >38°C)**
  - Abdominal examination: lower abdominal tenderness, always check for rebound/guarding
  - Pelvic examination
    - Cusco speculum: mucopurulent cervical discharge, cervicitis
    - Bimanual palpation: tender uterus, cervical excitation tenderness, adnexal tenderness +/- mass (indicates tubo-ovarian abscess)
- **Differential diagnosis**
  - Pelvic pain: ectopic, miscarriage, red degeneration of fibroids, ovarian cyst rupture/torsion, UTI, bladder stone, appendicitis, constipation, IBS, GE, strangulated hernia
  - Dyspareunia: endometriosis, fibroids, pelvic mass e.g. ovarian cyst/cancer, constipation, IBS
  - Abnormal vaginal bleeding: specific to presentation e.g. cervical polyps/cancer for PCB
  - Vaginal discharge: "simple" infection e.g. chlamydia/gonorrhoea/BV, foreign body, polyps, Mirena
- **Investigations**
  - History: pain (including dyspareunia), sexual history, bleeding, discharge, systemic symptoms
  - Examination: general examination +/- obs if acute presentation, abdominal palpation, pelvic
  - Urinalysis and MSU (including pregnancy test if bloods not taken)
  - Triple swabs and urethral swabs for chlamydia and gonorrhoea (negative swabs ≠ no PID)
  - Bloods: FBC, CRP, ESR, serum beta-hCG
  - Transvaginal USS if pelvic mass on examination or clinical suspicion of tubo-ovarian abscess
  - Endometrial sampling may be indicated in women >40 with abnormal vaginal bleeding
  - **Laparoscopy and biopsy** is the gold standard diagnostic test, but due to risks of surgical complications it should only be used in where clinical suspicion of an abscess is high. It may also be used to provide a definitive diagnosis in cases of chronic pelvic pain or subfertility.



Hysterosalpingogram showing **bilateral tubal blockages** secondary to PID
(image from ISM/Science Photo Library)



Adhesions between the uterus, adnexal structures and bowel
(image from EndoGyn)



Fitz-Hugh-Curtis syndrome: PID can cause perihepatitis and liver adhesions
(image from Medscape Reference)

- **Management**
  - **Medical management**
    - Adequate **pain relief** (paracetamol also has useful antipyretic effects) +/- **fluids** and **O_2**
    - **Empirical antibiotic treatment** should be given if there is clinical suspicion of PID – delay in treatment increases the risk of long-term complications
      - Needs to cover *C. trachomatis*, *N. gonorrhoea* and broad spectrum anaerobes e.g. **IM ceftriaxone** + **oral doxycycline/ofloxacin** + **oral metronidazole**
      - If severely ill (e.g. ↑↑fever, abscess, pelvic peritonitis) admit for IV antibiotics
    - Complicated cases (e.g. diagnostic uncertainty, pregnancy, HIV) should also be admitted
    - If chlamydia/gonorrhoea diagnosed, **refer both partners to GUM** for full STI screen and contact tracing (up to 50% of male partners of women with PID have an STI as well)
    - Empirical treatment for chlamydia should be provided for **all sexual partners**
    - **Removal of IUD** should be balanced against the risk of pregnancy if UPSI in last 7 days
  - **Surgical management**
    - **Drainage of tubo-ovarian abscess** if present (USS guided/laparoscopic)
  - **Fertility management**
    - Aim for spontaneous conception wherever possible
    - If only one tube is blocked, natural conception can still occur
    - **IVF** will be required if both tubes are blocked
- **Complications**
  - Tubo-ovarian abscess, pelvic peritonitis and sepsis
  - Reactive arthritis
  - Recurrent PID
  - Chronic pelvic pain
  - Tubal damage → ectopics and infertility (risk increases with number and severity of episodes)
  - Adhesion formation
  - Fitz-Hugh-Curtis syndrome (affects 10-20%): spread of infection transabdominally via the right paracolic gutter causes perihepatitis, RUQ pain and "violin string" adhesions around the liver
  - In pregnancy: preterm delivery, ↑↑ maternal and fetal morbidity
  - Transmission to neonate: ophthalmia neonatorum, chlamydial pneumonitis
- **Prevention:** routine chlamydia screening in under 25s, swabs prior to IUD insertion, **patient education**