**Endometriosis**

- **Endometriosis** is a chronic gynaecological condition of unknown aetiology characterised by the presence of oestrogen-dependent endometrial tissue in sites outside the uterine cavity:
  - Pelvic cavity: including ovaries, fallopian tubes, uterosacral ligaments, round ligament, broad ligament, pouch of Douglas, peritoneum, bladder, ureters, and rectosigmoid colon
  - Uterus, cervix and vagina
  - Diaphragm, pleura and pericardium
  - Skin and muscles
  - Lungs
  - Scar sites
  - Brain and eye
  - Umbilicus
  - Ortho-uterine endometrial tissue grows and bleeds cyclically → inflammation, pain and adhesions.

- **Adenomyosis** is the presence of ectopic endometrial tissue embedded within the myometrium.

- **Epidemiology**
  - Affects ~12% of general female population
  - Affects up to 30% of women with fertility problems
  - Affects up to 60% of women with dysmenorrhoea
  - Affects up to 15% of women with chronic pelvic pain
  - Mainly occurs in women of reproductive age

- **Risk factors**
  - ↑↑ oestrogen exposure: early menarche, late menopause, delayed childbearing, nulliparity
  - Obstruction to vaginal outflow: hydrocolpos, congenital defects
  - Family history: risk increases up to 6x in women with first degree relatives with severe disease
  - Multiparity and OCP use appear to be protective

- **Aetiology (postulated theories)**
  - Retrograde menstruation with “seeding” of endometrial tissue and subsequent adherence to surrounding structures, invasion and growth
  - BUT >90% of women have menstrual blood in the pelvis during menstruation
  - Systemic/lymphatic spread of endometrial tissue
  - Metaplasia of mesothelial cells
  - Impaired immunity

- **Symptoms**
  - May be asymptomatic in up to 50% of patients
  - Pelvic pain: there are several patterns of presentation (severity of pain ≠ severity of symptoms)
    - **Cyclical pain** occurs as endometrial tissue undergoes the same menstrual cycle as uterine tissue, resulting in worse pain just before the onset of a period.
    - **Constant pain** may be due to peritoneal irritation and adhesions
    - **Severe dysmenorrhoea** (indicates adenomyosis)
    - **Deep dyspareunia** (indicates uterosacral ligament involvement)
    - **Menorrhagia:** indicates adenomyosis
    - **Dysuria and haematuria:** indicates involvement of bladder peritoneum/invasion of bladder
    - **Dyschezia and cyclical rectal bleeding:** indicates involvement of rectovaginal pouch/rectum
    - **May present as subfertility**
    - **Chronic fatigue**
    - **Rarer presentations include epistaxis, hæmoptysis and bleeding from the skin or umbilicus**

- **Signs**
  - Examination is often normal
  - **Pelvic examination**
    - **Cusco speculum:** may occasionally reveal bluish haemorrhagic nodules e.g. in fornices
    - **Bimanual palpation:** may reveal tenderness in the fomices/adnexae, adnexal mass (likely to be an ovarian “chocolate cyst”), or palpable nodules in the posterior fornix

- **Differential diagnosis**
  - As for pelvic pain

- **Investigations**
  - History: age and relationship to menstrual cycle, periods, any other sources of bleeding
  - Examination: abdominal palpation, pelvic examination with speculum and bimanual palpation
  - Transvaginal USS for the presence of ovariian endometriomas and bladder/rectal involvement
  - **Laparoscopy and biopsy** is the gold standard diagnostic test for endometriosis, as it provides definitive histological proof of the presence of ectopic endometrial tissue. However, there is a risk of internal injury (e.g. bowel perforation) and the procedure has a high false negative rate, so it should only be used in women with severe symptoms or fertility problems.

- **Assessing disease severity (ASRM criteria)**
  - Endometriosis is graded minimal to severe based upon subjective assessment of the location and size of endometriomas, depth of infiltration and the characteristics of any adhesions

- **Management**
  - **Medical management**
    - **Adequate pain relief**: NSAIDs are particularly effective and reduce inflammation as well
    - **Hormonal treatments** to block oestrogen stimulation of ectopic endometrial tissue:
      - **OCP**
      - **POP, Depo injections, Implanon (medroxyprogesterone)**
      - **Mirena (levonorgestrel)** suppresses endometrial proliferation too
      - **GnRH analogues (e.g. goserelin)** can be given for up to 6 months
      - **Danazol (testosterone)** can be used for up to 6 months but is unpleasant
      - **Aromatase inhibitors (e.g. letrozole)** may suppress local oestrogens
  - **Surgical management**
    - **Laparoscopic coagulation, ablation or excision of endometriomas**
      - **Endometriosis can and does recur** (20% recurrence at 2 years, 50% at 5 years)
      - **Six months’ treatment with GnRH analogues post-op can reduce the incidence of recurrence at 2 years**
    - **Drainage or excision of ovarian endometriomas** (cystectomy ↓↓ recurrence rate)
    - **Hysterectomy and BSO may be necessary in severe disease (remember HRT post-op)**
  - **Fertility management**
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      - **Aim for spontaneous conception wherever possible**
      - **Hormonal treatments show little benefit in improving fertility**
      - **It is important to remember that NSAIDs can inhibit ovulation if taken mid-cycle**
      - **Surgical excision of ectopic endometrial tissue can increase the rate of spontaneous pregnancy in minimal to mild disease** (no evidence available for more severe disease)
      - **IVF may be required in moderate to severe disease**

- **Complications**
  - **Adhesions, fibrosis and organ dysfunction**
  - **Tubal damage → infertility**
  - **Risk of low-grade ovarian cancer**

- **Prognois**
  - **Variable progression**: may resolve spontaneously (30%) or worsen (50%)
  - **Relapse and recurrence are common**