Gynaecology

History taking & examination in gynaecology

**History**

- **PCx**
  - Onset & duration of main complaint
  - Associated symptoms
  - Relationship to menstrual cycle
  - Previous tx & response
  - Specific closed Qs
    - Vaginal + uterine prolapse: mass protruding through vaginal introitius/difficult micturition + defecation
  - Common ones:
    - Disorders of menstruation
    - Abdominal pain (SOCRATES)
    - Vaginal discharge
      - Colour + odour
      - Relationship to periods
      - Associated S+S (vulval pruritis)

- **PMHx – gynaecological**
  - Previous Ix/Tx
  - Contraceptive Hx
  - Sexual Hx
    - Frequency of coitus
    - Dyspareunia
    - Functional problems: libido, sexual satisfaction, sexual problems
  - Cervical smear (<20y)
  - Menstrual Hx
    - LMP
    - Menarche
      - 1º amenorrhoea = absence of menstruation at 16y old girl otherwise normal
      - Pubarche = onset of first signs of sexual maturation (~2y before menarche)
    - Length of menstrual cycle
      - 2º amenorrhoea = absence of menstruation >6months in women who previously had periods
      - Polymenorrhoea/epimenorrhoea = menstrual interval <21d
      - Oligomenorrhoea = menstrual interval 6wks-6months
  - Amount of blood loss (# of tampons/pads)
    - Menorrhagia = heavy, regular periods
    - Metrorrhagia = irregular acyclic heavy bleeding
    - Menometrorrhagia/polymenorrhagia = frequent + excessive periods
  - Menopause = cessation of periods at end of menstrual life
  - Post-menopausal bleeding = bleeding >12month post menopause
  - Any other irregular bleeding?
    - Post-coital
    - PV bleeding
    - IMB

- **PMHx – pregnancies**
  - How many (gravidity)
  - Outcome (parity)
  - Surgical deliveries (birth wt)

- **PMHx – surgical + medical**
  - Previous abdo surgery
  - Major CVS/resp disease
  - Endocrine disease
  - Thromboembolic disease
  - Breast diseases

- **DHx + Allergies**

- **SHx + FHx**
  - Home circumstances
  - Support
Examination

• General examination
  o General condition, weight, height
  o Pulse, BP
  o Routine urine analysis
  o Anaemia
  o Goitre
  o Breast examination (if indicated)
    ▪ Galactorrhoea = secretion of milk at times not assoc. w/ pregnancy
  o 2º sex characteristics, body hair

• Abdo examination
  o Inspection – distension, scars, striae, hernias
  o Palpation – masses, organomegaly, tenderness, peritonism, groin LN, hernia orifices
    ▪ Mass is pelvic if → can’t palpate lower edge below pelvic bone
    ▪ Umbilical scars – previous laparoscopic surgeries
    ▪ Suprapubic regions – transverse incisions (C-section, gynae ops)
  o Percussion
    ▪ Large ovarian cyst – central dullness, resonance in flanks
    ▪ Ascites – dullness in flanks, central resonance
  o Auscultation of bowel sounds

• Pelvic examination
  o Explanation, comfort, privacy to undress, chance to wee before, chaperone
  o Inspection of external genitalia
    ▪ Patient is supine with knees drawn up & separated (lithotomy)
    ▪ Part lips of labia minora (L hand) look at:
      ▪ External urethral meatus
      ▪ Vulva
      ▪ Looking for: redness, ulceration, discharge and old scars
  o Speculum examination, smear, swabs
    ▪ Always before digital examination (avoid contamination)
    ▪ Lubricant
    ▪ Look for:
      ▪ Discharge/bleeding of cervix
      ▪ Polyps
      ▪ Areas of ulceration
      ▪ Cervix appearance: postpartum external os irregular + slit like
        ▪ Ectropion/erosion = area of cervical epithelium around cervical os (darker red than smooth pink of rest). Normal columnar epithelium endocervical canal → ectocervix
  o Bimanual examination
    ▪ Middle finger into vaginal introitus, apply pressure towards rectum
      ▪ Then introduce index finger
      ▪ Palpate cervix (should be rubbery like nose)
    ▪ Abdominal hand – compress pelvic organs onto examining hand
      ▪ Uterus – shape, size, consistency, position
      ▪ Pouch of Douglas (thickening, nodules)
      ▪ Lateral fornices (ovarian/tubal mass)
  o PR exam (if indicated)
  o Smear
    ▪ >3months post partum
    ▪ Not when menstruating

Puberty

• Normal sequence: thelarche → adrenarche → growth spurt → menarche
  o Thelarche = breast development. Nipple enlargement, vaginal epithelium thickens, vaginal pH decreases (9-11y)
  o Adrenarche = growth of pubic hair (11-12y)
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- **Growth spurt** = rapid increase in growth 11-14y. Legs grow → shoulder breadth → trunk length. Stops 17-18y as femoral epiphyses fuse.
  - Menarche normally between 11-15y
  - Early cycles anovulatory
  - Most cases of precocious puberty are constitutional
    - Developmental signs of sexual maturation <8y
    - Menstruation <10y
    - Other causes:
      - Neurological
      - Ovarian tumour
      - Adrenal tumours
      - Gonadotrophin-secreting tumours
      - Others – hypothyroidism; exogenous steroids
  - 1st amenorrhoea can be w/o delayed puberty, likely cause:
    - Haematocolpos = retention of menstrual fluid because of imperforate hymen
    - Vaginal agenesis = congenital absence of vagina
    - **Resistant ovary syndrome**
      - FSH + LH elevated
    - Testicular feminisation/chromosomal abnormalities
  - 1st amenorrhoea + poor 2nd sex characteristics (delayed puberty):
    - Constitutional delay in puberty
    - Gonadal dysgenesis
    - Hypothalamic pituitary failure
  - Virilisation in female causes:
    - CAH – congenital adrenal hyperplasia
    - Virilising adrenal/ovarian tumours
    - Cushing’s syndrome
    - Chromosomal abnormalities (46XY female)

**Secondary amenorrhoea**
- Absence of menstruation >6months in previously menstruating woman
- Physiological causes
  - Pregnancy
  - Breastfeeding
- Pathological causes:
  - Hypothalamic dysfunction: low/normal FSH + LH
  - Hyperprolactinaemia
  - Pituitary adenomas
  - **Sheehan’s syndrome** = destruction of pituitary 2nd to postpartum necrosis
  - Ovarian failure
  - PCOS
    - Abnormal androgen production
      - Oligo/amenorrhoea
      - Hirsuitism
      - Acne
      - Obesity
    - Infertility
- Ask about:
  - Weight
  - Stress
  - Chronic illness
  - Medication
  - Contraception
- Ix:
  - Pregnancy test
  - FSH + LH + Prolactin
  - USS
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Menorrhagia
- Prolonged/heavy regular bleeding
- Commonest Dx: dysfunctional uterine bleeding
- Only Ix: FBC
  - Hysteroscopy = visualisation of uterine cavity using an endoscope via cervix
- Tx is medical
  - Non-hormonal: NSAlS, antifibrinolytic agents
  - Hormonal: COCP, IUS, HRT in postmenopausal
  - Surgical...
    - Endometrial resection/ablation
    - Hysterectomy
- Metropathia haemorrhagica
  - Commonly around menopause time
  - Period of amenorrhoea → metrorrhagia
  - ‘Swiss cheese’ appearance of endometrium
- Dysmenorrhoea
  - Painful menstruation
  - 1° dysmenorrhoea = absence of significant pelvic pathology
  - 2° dysmenorrhoea = acquired, caused by organic pelvic pathology (i.e. endometriosis, adenomyosis, pelvic infections and IU lesions such as submucosal fibroid polyps)
  - Tx: aspirin, mefenamic acid, naproxen, ibuprofen

Premenstrual syndrome
- Cyclical changes occurring in luteal phase of cycle + ceasing at onset of menstruation
- Commonest symptoms:
  - Mood changes
  - Breast tenderness
  - Bloating
  - GI symptoms
- Tx: pyridoxine (vitamin B6), evening primrose oil, suppression of ovulation
- High placebo response rate

Menopause
- Part of climacteric = part of ageing process, transition from reproductive → non-reproductive phase of life
- Premature menopause = spontaneous cessation of menstruation <40y
- Onset 50-51y
- Hormone changes
  - Hypergonadotrophic, hypogonadic
  - Increases oestriadiol (fat origin)
  - Excessive LH + FSH (esp)
  - Decrease in androgens + DHES
  - Testosterone secretion persists
- Assc. vasomotor instability, atrophic changes in genital tract + breast, CVS changes, osteoporosis
- HRT effective in symptomatic relief (PO, topical, parenteral) + OP
  - Increased risk of: breast CA, venous thrombosis + heart attacks
- Postmenopausal bleeding = vaginal bleeding >1y menopause
  - Causes:
    - Uterine CA
    - Benign + malignant tumours of lower genital tract
    - Stimulation of endometrium by exogenous oestrogen (HRT)
    - Infection
    - Senile atrophic vaginitis
  - Diagnostic hysteroscopy + endometrial biopsy → USS measure of endometrial thickness
Infertility and disorders of sexual function

Infertility
- Incidence ~12% in Western EU
- Infertility if no conception >1yr without contraception
  - **1º infertility** = diminished fertility throughout the reproductive years
  - **2º infertility** = failure to conceive after >1 successful pregnancy
- Fertility decreases w/ age (>25y)
  - Decreased frequency of coitus
  - Reduction in frequency of ovulation
  - Reduced male fertility (increased defective sperm)
  - Increased propensity to miscarriage in older women
- Causes (in order):
  - Unexplained
  - Disorders of ovulation
    - 1º amenorrhea
    - 2º amenorrhea
    - Oligomenorrhea
    - Anovulatory cycles
      - **Luteinized unruptured follicle syndrome**
        - Oocyte not released from the follicle while luteinisation of it still occurs
        - Assc. with endometriosis
      - Entrapped ovulation, defective corpus luteum, failure of implantation
  - Male
  - Tubal
  - Endometriosis
- **PCOS** most common cause of anovulation
- Pituitary tumours → 2º amenorrhoea
- Infection (often chlamydial) → tubal damage
  - **Hydrosalphinx** = occlusion of fimbrial end of the tube with collection of fluid within tubal lumen
  - **Pyosalphinx** = occlusion of fimbrial end of the tube with collection of pus within tubal lumen
- Infections assc with IUD, abortion + puerperium → cervical blockage
- **Asherman's syndrome** = partial occlusion of the cavity by the formation of intrauterine adhesions/synenchiæ
- Poor cervical penetration by sperm maybe caused by:
  - Infection
  - Anti-sperm antibodies
  - Abnormal mucous
  - Effect of progestational agents on the mucous

Investigation of infertility
- Work out 3 things:
  - Is ovulation occurring regularly?
    - Luteal phase serum progesterone is most useful method to detect ovulation
    - Hormone levels in anovulation
      - Serum prolactin (hyperprolactinaemia)
      - FSH + LH (2º amenorrhoea)
    - Other things:
      - Basal temperature (unreliable)
      - Cervical mucus consistency
      - Endometrial biopsy + vaginal cytology
      - Ultrasonography
  - Is there impairment of tubal function/implantation?
    - HSG (hysterosalpingography)/laparoscopy/USS to lx tubal patency
  - Is there any cervical factor preventing sperm entry?
    - Post-coital test – looking for pus cells, clumped abnormal sperm + mucus type
    - In vitro sperm penetration tests
- Male partner lx
  - Semen analysis (normal: WHO reference)
    - Volume: 2-5ml
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- Count: >20x10⁶/ml
- Motility: >50% progressive motility at 1h (25% linear)
- Morphology: >30% normal
- Liquefaction time: within 30mins
- WBC in sample: <10⁶/ml

Hormone levels in infertile males
- High FSH + LH → severe testicular damage
- Normal FSH + LH → obstructive disease
- Low/no FSH + LH → hypopituitarism
- High FSH + azoospermia → irreversible failure of spermatogenesis
- Hyperprolactinaemia → impotence/oligospermia

Chromosomal analysis in males w/ azoospermia
- Abnormal karyotype: XXY, XYY

Retrograde ejaculation
- Isoimmunity to sperm

Treatment of infertility
- Anovulation
  - Clomiphene or tamoxifen
    - Antioestrogens: stimulate FSH + LH release
  - hMG (human menopausal gonadotrophin) – Pergonal, synthetic hMG
    - Beware:
      - Ovarian hyperstimulation syndrome
        - Severe: marked ovarian enlargement (cysts), ascites, pleural effusions, Na retention, oliguria
        - Hypotensive + hypovolaemic → ARF/thromboembolic phenomenon
        - Adult respiratory distress syndrome
      - Multiple pregnancy
  - Hypogonadotrophic hypogonadism – GnRH
- Tubal pathology
  - Surgery
  - IVF
- Cervical hostility – AIH
- Treatment of male infertility only possible in small proportion - AID
Disorders of sexual function

- **Dyspareunia**
  - Often caused by
    - Infection
    - Atrophic conditions
    - Lack of lubrication
    - Narrowing of introitus
    - **Vulvodynia** = condition of unknown aetiology characterised by persisting pain over vulva
  - Deep dyspareunia → pelvic pathology indicator:
    - Acute/chronic pelvic inflammatory disease
    - Retroverted uterus + prolapsed ovaries
    - Endometriosis
    - Neoplastic disease of cervix + vagina
    - Post-op scarring
    - Foreign bodies

- **Apareunia** = absence of intercourse/inability to have intercourse at all
  - Congenital absence of vagina
  - Imperforate hymen

- **Vaginismus** + loss of libido often psychogenic
  - **Vaginismus** = symptom of disorder caused by spasm of pelvic floor muscles + adductor muscles of thigh
    - **1º Vaginismus** = fear of penetration
    - **2º Vaginismus** = result of experience of pain on intercourse (infection, assault)
  - Causes of loss of libido:
    - Major life events – marriage, pregnancy
    - Being ill, depressed or grieving
    - Endocrine/neurological disorders
    - Dyspareunia
    - Medication
    - Menopause
    - Fear of pregnancy/infection
    - Stress/chronic anxiety

- **Causes of sexual dysfunction in men:**
  - Failure to achieve erection
    - Organic (50%)
      - Neurological causes
      - Diabetes (peripheral neuropathy + vessel damage)
      - Hyperprolactinaemia
      - Recreational drug use
      - Many prescription drugs
        - Antihypertensives
        - Diuretics
        - Antidepressants
        - Sedatives
    - Psychogenic
    - Tx:
      - **Bromocriptine** – restore sexual function in hyperprolactinaemia
      - Intracavernous injections of prostaglandin $E_2$
      - **Sildenafil** – increases NO effect on vascular SMC
  - Problems with ejaculation
    - Premature ejaculation
    - Retarded ejaculation
    - Retrograde ejaculation
      - Tx: surgery, $\alpha$-adrenoreceptor agonists
    - Absent ejaculation
  - Lack of sexual interest
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Complications of early pregnancy

Miscarriage

- Pregnancy loss <24wks
- Clinical types:
  - Threatened miscarriage – PV bleeding early pregnancy, enlarged uterus, closed cervical os
  - Inevitable/incomplete miscarriage – abdominal pain, increasing PV bleeding, cervix opens, products of conception passed
    - Incomplete – some products retained
    - Distension of cervix by productions of conception. Can cause hypotension + bradycardia
  - Complete miscarriage – pain ceases, PV bleeding stops, involution of uterus
    - More common >16wks
    - Retention of placental fragments common
  - Septic miscarriage – S+S incomplete miscarriage + uterine + adnexal tenderness. Maybe PV purulent d/c + pyrexia. Severe sepsis endotoxic shock
    - Common organisms: Escherichia coli, Streptococcus faecalis, Staphylococcus aureus, Klebsiella spp., Clostridium welchii, C. perfringens
  - Early embryonic demise + anembryonic pregnancy (missed miscarriage) – foetus identified on USS but no heartbeat. Gestational sac seen on anembryonic pregnancy. Some pain, normal uterus size
- Complicates 15-20% pregnancies
- Causes:
  - Genetic abnormalities
  - Endocrine factors
    - PCOS
    - Diabetes
    - Untreated thyroid disease
  - Maternal illness & infection
    - Severe maternal febrile illness
    - Organ system malfunction
  - Abnormalities of the uterus
    - Bicornuate uterus
    - Subseptate uterus
    - Unicornate
  - Cervical incompetence
    - Congenital
    - Physical damage
      - Mechanical dilatation of cervix
      - Childbirth
  - AA factors
    - Antiphospholipid antibodies
      - Lupus anticoagulant (LA)
      - Anticardiolipin antibodies (aCL)
    - Loss via thrombosis of uteroplacental vasculature + impaired trophoblast function
    - Risk of: IUG restriction, pre-eclampsia, venous thrombosis
  - Thrombophillic defects
  - Alloimmune factors
- Tx:
  - Antiphospholipid antibodies – tx w/ low dose aspirin + heparin
  - Antibiotics
  - Anti-immunoglobulin
  - Surgical evacuation – dilation of cervix, suction curettage
  - Medical evacuation – prostaglandin analogues (misoprostol, dinoprostone) antiprogestosterone (mifepristone)
  - Conservative

Recurrent miscarriage

- Recurrent miscarriage = 3 consecutive pregnancy losses
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- Ix
  - Screening for antiphospholipid antibodies, chromosome abnormalities + PCOS
  - USS – is foetus alive?
  - Urinary hCG
  - Pyrexia → high vaginal swab
- Chances of successful future pregnancies >60% w/o intervention

**Ectopic pregnancy**
- **Ectopic pregnancy** = any pregnancy occurring outside the uterine cavity
- 1% pregnancies
- Most important cause of maternal death in early pregnancy
- S+S:
  - Atypical presentations common
  - Acute:
    - Amenorrhoea, lower abdominal pain, uterine bleeding
    - Maybe referred pain to shoulder tip (subdiaphragmatic irritation)
    - Clinical: shock – hypotension, tachycardia, peritonism, abdominal distension, guarding, rebound tenderness
  - Subacute:
    - Short period amenorrhoea
    - Recurrent vaginal bleeding + abdominal pain
- Commonest site: ampullary region of fallopian tube
  - 1º abdominal pregnancy = direct implantation of conceptus in abdominal cavity/ovary
  - 2º abdominal pregnancy = extrusion of tubal pregnancy with 2º implantation into peritoneal cavity

- Predisposing features:
  - Previous hx of ectopic pregnancy
  - Sterilisation
  - PID
  - Subfertility
  - IUD in situ
  - Previous tubal surgery
- Accurate Dx by USS + hCG measurement
- Laparoscopic tx – lower morbidity
  - Medical tx: methotrexate

**Trophoblastic disease**
- 1/650 pregnancies in UK
- **Hydatidiform mole** = placenta replaced by mass of grape-like vesicles
  - Abnormal development of placenta
  - Mass of oedematous + avascular villi
- **Invasive mole/chorioadenoma destruens** = invasion of myometrium w/o systemic spread of benign mole
- Pathogenesis
  - Fertilisation by 2 sperm → molar pregnancy
  - Partial moles are triploid
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- Complete moles are diploid
- Invasive/benign
- Choriocarcinoma = plexiform columns of trophoblastic cells w/o villous patterns
  - Mets: locally (vagina), lungs
- PCx: bleeding in 1st ½ pregnancy, spontaneous miscarriage (~20wks)
  - Severe hyperemesis, pre-eclampsia, unexplained anaemia
- Dx: USS, very high u/blood hCG
- Tx: initial surgical evacuation of uterus
- 50% choriocarcinomas occur w/o hx of molar pregnancy
- Requires follow-up with serial hCG measurement
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Contraception & termination of pregnancy

Artificial methods of contraception:
1. Inhibition of ovulation
2. Prevention of implantation (of fertilised ovum)
3. Barrier methods – spermatozoa prevented from reaching cervix

Barrier methods of contraception
- Relative risk 0.6% of PID (female)
- Male condoms
  - Applied before intercourse
  - Reduce level of sensation of partner
  - Readily available
  - No SE for female
  - Protection against infection
  - 97-95% effective
    - Causes of failure:
      - Leakage of sperm when penis withdrawn
      - Putting on condom after genital contact
      - Breakage of condom (lubricants)
- Female condoms
  - Single episode use only
- Diaphragms + cervical caps
  - Smear contraceptive cream on both sides of diaphragm
  - Cervical caps suitable in prolapse/long cervix
  - Inserted before intercourse – removed 6hr after
  - No female SE (although potential to cream)
- Spermicides + sponges
  - 15mins before intercourse
  - Nonoxynol-9 and benzalkonium
  - Higher failure rate

Intrauterine devices (coils)
- Prevent implantation
  - Reduced viability of ova + number of viable sperm reaching tubes
- Copper IUDs reduce menorrhagia (?plastic coils increase?)
- Inert or pharmacologically active:
  - Copper
    - Interfere with endometrial oestrogen-binding sites
    - Depress thymidine uptake into DNA
    - Impairs glycogen storage in endometrium
  - Progesterone (levonorgestrel releasing IUS)
    - Mirena coils
    - Suppresses endometrial thickening .'. reduces menorrhagia
    - Irregular bleeding common
- Best for older multiparous women
- Can be inserted at time of delivery (or in 1st ½ menstrual cycle)
- Replace after 3-5years
  - Cu T 380 – 8yrs
  - Other copper + Mirena – 5yrs
- Failure rate 2/100 women years
- Complications:
  - Vagal syncope (tight cervical canal)
  - Pregnancy – remove to reduce risk of septic miscarriage
  - Perforation of uterus (into peritoneal cavity)
    - Other causes of missing tail of device:
      - Device expelled
      - Device turned in uterine cavity & drawn up strings
  - Pelvic inflammatory disease
    - CI: pre-existing PID
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- Abnormal uterine bleeding
  - Try: tranexamic acid, mefanamic acid
- Pelvic pain
- Vaginal discharge
- Ectopic pregnancy

**Hormonal contraception**

- **Combined oral contraceptive pill**
  - Suppress gonadotrophins
  - 21d pill, 7d pill-free (withdrawal bleeding)
  - Oestradiol (ethinylestradiol) and progestogen
    - *Monophasic preparations* = hormone concentration same throughout 21d
    - *Biphasic/triphasic preparations* = vary across cycle; reduce breakthrough bleeding
  - **Mechanism**
    - Prevent gonadotrophin secretion
    - Prevent LH peak
    - Unsuitable endometrium
    - Hostile cervical mucous
  - **Indications:**
    - Contraception
    - Menorrhagia
    - Premenstrual syndrome
    - Endometriosis
    - Dysmenorrhea
  - **CI:**
    - Absolute: pregnancy, DVT, sickle-cell disease, porphyria, liver disease, jaundice
    - Migraine reaction
    - Others: varicose veins, diabetes, HTN, renal disease, CHF
  - **1.3/100,000 mortality**
  - **Failure rate 0.5/100 women years**
  - **SE:**
    - Increased venous thrombosis
    - Increased arterial disease
    - Gallstone formation + cholecystitis
    - IGT
    - Breast + cervical cancer risk
    - Reduced ovarian + endometrial CA risk
    - Reduced ovarian cysts

- **Progesterone only pill**
  - Norethisterone/levonorgestrel
  - ODS at the same time (low dose)
  - **Mechanism**
    - Alter endometrium maturation
    - Affect cervical mucous
  - **SE:**

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**Table 19.2 Minor side effects of combined oral contraception**

<table>
<thead>
<tr>
<th>Oestrogenic effects</th>
<th>Progestogenic effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid retention and oedema</td>
<td>Premenstrual depression</td>
</tr>
<tr>
<td>Premenstrual tension and irritability</td>
<td>Dry vagina</td>
</tr>
<tr>
<td>Increased in weight</td>
<td>Acne, greasy hair</td>
</tr>
<tr>
<td>Nausea and vomiting</td>
<td>Increased appetite with weight gain</td>
</tr>
<tr>
<td>Headache</td>
<td>Breast discomfort</td>
</tr>
<tr>
<td>Mucorrhoea, cervical erosion</td>
<td>Cramps of the legs and abdomen</td>
</tr>
<tr>
<td>Menorrhagia</td>
<td>Endometrial CA risk</td>
</tr>
<tr>
<td>Excessive tenderness</td>
<td>Reduced libido</td>
</tr>
<tr>
<td>Venous complaints</td>
<td>Breakthrough bleeding</td>
</tr>
</tbody>
</table>
• Higher failure rate
• Irregular bleeding
• Ectopic pregnancy higher risk

<table>
<thead>
<tr>
<th>Injectable compounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>o Depo-Provera (150mg medroxyprogesterone acetate)</td>
</tr>
<tr>
<td>3monthly IM</td>
</tr>
<tr>
<td>o Implanon</td>
</tr>
<tr>
<td>Subdermal Silastic rod</td>
</tr>
<tr>
<td>Etonogestrel</td>
</tr>
<tr>
<td>3yr protection</td>
</tr>
</tbody>
</table>

Sterilisation
• 1/2000 failure rate (female)
• Increased risk of ectopic pregnancy if procedure fails
• Permanence depends on technique used
• Female sterilisation
  o Laparoscopic
    ▪ Tubal clips
    ▪ Tubal coagulation & division
  o Tubal ligation
• Male sterilisation: vasectomy
• Risks of surgery
• Alternatives

Termination of pregnancy
• Emergency contraception
  o 1x 750mg levonorgestrel within 72hrs
  ▪ 2nd dose: exactly 12hrs later
• Abortion Act 1967
  o 2x Drs agree that indications met
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- Methods:
  - Surgical
    - Cervical dilatation – conceptus removed by suction curette
    - Larger foetus – forceps used, dilatation + evacuation
  - Medical
    - Mifepristone + PV prostaglandins (36-48hrs later)

- Complications:
  - Bleeding
  - Infection
  - Infertility
  - Retained tissue
  - Regret
Genital tract infections

Introduction
- Direct access to peritoneal cavity
- Usually BL once ascended to tubes
- Natural barriers to infections:
  - Rich blood + lymphatic supply
  - Physical apposition of pudendal cleft + vaginal walls
  - Vaginal acidity
  - Cervical mucous
  - Monthly shedding on endometrium

Herpes genitalis
- Cause: herpes simplex virus (HSV) – type 1>2
- 1º HSV infection is systemic infection
  - Fever, myalgia, occasionally Meningism
  - Local: vaginal dc, vulval pain, dysuria + inguinal lymphadenopathy
  - Vulval lesions: skin vesicles, multiple shallow ulcers
  - Associated with cervical dysplasia
- Remains latent in sacral ganglia post-1º infection. Triggered by:
  - Stress, menstruation, intercourse
  - Less severe than 1º infection
- Can be transmitted to the neonate if active (vaginal delivery)
- Incubation period 2-14d
- Dx: culture fluid from vesicles, antigen detection

Vulvovaginitis
- Commonest genital tract infection
- PCx: pruritis, dyspareunia or discharge, dysuria
- Common causes:
  - Trichomonas
    - Organisms seen on Papanicolaou smear
      - Motile trichomonads
      - Flagellate motion characteristic
    - PCx: abnormal vaginal bleeding, vaginal soreness, pruritis
  - Bacterial vaginosis (BV)
    - Overgrowth of anaerobic bacteria (incl. Gardnerella spp.)
    - NOT STI
    - PCx: asymptomatic, smelly vaginal dc, vulval irritation
    - Dx needs 3 of:
      - Increased vaginal pH (>4.5)
      - Thin homogenous vaginal dc
      - Fishy odour produced when + 10% potassium hydroxide
      - Clue cells of gram-stain
        - Clue cells = epithelial squamous cells with multiple bacteria adherent to surface
  - Candida
    - Naturally on skin + bowel
    - PCx: asymptomatic, vaginal d/c, soreness & itching vulva, white curd like collections
    - RFx: pregnant, COCP, immunosuppression
      - Higher vaginal pH – allows free growth of yeast
- Predisposing factors:
  - Pregnancy
  - Diabetes
  - Contraceptive pill
- Dx: examination of fresh wet preparation of vaginal discharge

Syphilis
- 10-90d post exposure
- Spirochaete Treponema pallidum
1º lesions/chancre = indurated, firm papule, may ulcerate, raised firm edge (vulva, cervix, vagina)
  o Maybe + inguinal lymphadenopathy
  o Heals within 2-6wks

6wks post 1º → 2º syphilis
  o Rash – maculopapular, associated alopecia
  o Condylomata lata = typical appearance of papules in 2º syphilis (anogenital area, mouth)

Dx: microscopic swabs

3º phase of disease – can be anything! Commonly neuro/CVS.

Condylomata acuminate – genital warts

- HPV – human papilloma virus
- Commonly STI (other ways too)
- Incubation 6months
- Associated: pruritis, vaginal dc
- Can have 2º infection

Infections of the cervix
- Acute (associated with generalised infection) or chronic
- PCx:
  o Discharge
  o Dyspareunia
  o Low abdominal pain/sacral backache
  o Urinary symptoms
  o Postcoital bleeding
- ?Co-existing trigonitis + urethritis
- Can cause → subfertility
- Difficult to isolate an organism when chronic
- Tx: appropriate antibiotics & cautery

<table>
<thead>
<tr>
<th>Condition</th>
<th>Treatment</th>
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<tbody>
<tr>
<td>Vulval/vaginal monilial infection</td>
<td>Topical/ora</td>
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<tr>
<td></td>
<td>Clotrimazole pessary</td>
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<tr>
<td></td>
<td>Oral fluconazole</td>
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<tr>
<td>Recurrent</td>
<td>Oral ketoconazole + fluconazole</td>
</tr>
<tr>
<td>Trichomonas + BV</td>
<td>Metronidazole 400mg BDS 5d</td>
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<tr>
<td></td>
<td>Topical metronidazole gel/clindamycin cream</td>
</tr>
<tr>
<td>Non-specific vaginal infections</td>
<td>Vaginal creams</td>
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<tr>
<td>Syphilis</td>
<td>Penicillin</td>
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<tr>
<td>Bartholinitis</td>
<td>Antibiotics</td>
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<tr>
<td>Vulval warts</td>
<td>Physical/chemical diathermy</td>
</tr>
<tr>
<td>Herpetic infection</td>
<td>Aciclovir 200mg Q5D</td>
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</tbody>
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Upper genital tract infection
- Usually from ascending lower genital tract infection
- Maybe 2º to appendicitis/bowel infections → pelvic abscess
- Can follow abortion/normal delivery
- Commonly due to: C. trachomatis/N. gonorrhoeae when sexually transmitted
- RFx: 15-24yr, multiple sex partners, transcervical procedures
- Acute salpingitis:
  o Symptoms:
    ▪ Acute BL lower abdominal pain
    ▪ Deep dyspareunia
    ▪ Abnormal menstrual bleeding
    ▪ Purulent vaginal dc
  o Signs:
    ▪ Systemic illness: pyrexia + tachycardia
    ▪ Peritonitis – guarding/rebound tenderness
    ▪ Pelvic examination – acute pain on cervical excitation + thickened vaginal fornices
Gynaecology

- Acute perihepatitis (w/ chlamydia) – RUQ pain, deranged LFTs, multiple filmy adhesions between liver surface + parietal peritoneum (Fitz-Hugh-Curtis syndrome)
- Pyrexia >38°
- Raised WCC

- DDx:
  - Ectopic pregnancy – UL pain, syncopal episodes, WCC raised + low Hb (n in salpingitis)
  - Acute UTI (rarely peritonism, urinary symptoms)
  - Acute appendicitis (UL)
  - Torsion/rupture of ovarian cyst
- Mgt: fluid replacement, antibiotics, analgesia, rest
- Surgery indicated if confirm Dx if in doubt (drainage of pelvic mass)
- Major cause of infertility
  - Tubal obstruction in 40% (>3 infections)

HIV infection

- Retrovirus infection of Th cells + CNS
- Transmitted by: sex, blood transfusion, vertical (offspring)
- Dx: serology, differential lymphocyte count, opportunistic infection
- PCx: asymptomatic, generalised malaise, lymphadenopathy, AIDS
  - ‘Flu like’ illness 3-6months post-infection – seroconversion
  - Asymptomatic immunocompromise
  - Persistent generalised lymphadenopathy
- AIDS
  - Infective manifestations
    - Candida
    - HSV
    - HPV
    - Mycobacterium spp.
    - Cryptosporidium spp.
    - Pneumocystis carinii
    - CMV
  - Non-infective
    - Weight loss
    - Diarrhoea
    - Fever
    - Dementia
    - Kaposi’s sarcoma
    - Increased risk cervical CA
- Rate of vertical transmission reduced by:
  - Drug tx
  - Elective c-section
  - Avoiding breastfeeding
- Incidence in heterosexuals increasing
Gynaecology

Lesions of upper genital tract

Congenital abnormalities of the uterus

- Failure of mullerian ducts to fuse/develop
  - Fusion of 2x mullerian ducts → upper 2/3 vagina, cervix & body of uterus
  - Range from minor indentation – full separation of each uterine horn + cervix
- Asymptomatic unless menstrual flow obstructed
- Vaginal septum → dyspareunia & post coital bleeding (PCB)
- Signs:
  - Double cervix on routine vaginal examination
  - Separation of uterine horns on bimanual vaginal examination
- Obstruction to menstrual outflow → haematocolpos & haematometra with retrograde spill of menstrual fluid
- In pregnancy, may cause:
  - Recurrent abortion
  - Malpresentation
  - Retained placenta
  - Premature labour
- Maybe assc. with renal tract abnormalities
- Dx: history, hysteroscopy + hysteroscopy
- Surgical tx
- Position abnormalities
  - Normal → antverted position
  - 10% retroverted
    - Retroverted + mobile → no significance (normal variant)
    - Retroverted + fixed → assc. pelvic disease (endometriosis, CPID)

Benign uterine tumours

- Commonest: endometrial polyps + fibroids
- **Endometrial polyps**
  - Symptoms
    - Necrosis from polyp surface + interference w/ normal endometrial shedding → irregular bleeding + menorrhagia
    - Protrusion of polyp through cervix → PCB
    - Attempt to expel polyp from cervix → olicky, dysmenorrhoeic pain
  - Signs:
    - Bright red polyp protruding through cervix
  - Pathology
    - Fine fibrous tissue core covered by columnar epithelium
    - Maybe covered by functional endometrium
    - Occasional malignant change
  - Tx:
    - Surgical removal @ hysterectomy
- **Fibroids**
  - 20% >30y have fibroids
  - Uterine myomas = SMC benign tumour = fibroids
  - Symptoms depend on size/site:
    - Menstrual disorders: menorrhagia
    - Pain: colicky uterine pain (Pedunculated fibroid)
      - Red degeneration in pregnancy = necrobiosis where cut surface of tumour has dull reddish hue. Assc. with aseptic degeneration + local haemolysis
    - Pressure symptoms (bladder/rectum)
    - Complications in pregnancy
      - Recurrent miscarriages (submucosal fibroids)
      - Obstruction of labour
    - Infertility
  - Dx: USS of pelvis
  - **Subserosal** fibroids → Pedunculated
    - Large → adhere to omentum → get additional blood supply
    - May separate from uterus → parasitic/wandering fibroid
  - **Submucosal** fibroids → project into uterus cavity → fibroid polyp
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- **Intramural** fibroids → uniform/nodular enlargement of uterus
  - More common in:
    - Nulliparous
    - Overweight
    - FHx fibroids
    - Afro-Caribbean
  - Pathological changes:
    - Hyaline degeneration
    - Cystic degeneration
    - Calcification
    - Infection & abscess formation
    - Necrobiosis = impairment of blood supply
    - Sarcomatous change
  - May undergo 2° change including necrosis/malignant change
  - Mgt depends on size + need to preserve reproductive function
    - Medical tx of menorrhagia
    - Uterine artery embolization
    - Surgical: hysterectomy, surgical excision/myomectomy (younger, preserve function)

**Adenomyosis**
- Adenomyosis = condition characterised by invasion of endometrial glands & stroma into myometrium
- Parous women, pre-menopausal
- 4th decade
- PCx: subfertility ± crescendic dysmenorrhoea + menorrhagia
  - Clinical examination: symmetrical enlargement + tenderness of uterus
- Dx: MRI
- Tx: hysterectomy

**Endometrial carcinoma**
- Disease of postmenopausal women
- RFx:
  - Obesity – excess oestrogen released from adipose tissues (stores of excess androgens) → endometrial hyperplasia + malignancy
  - Nulliparous
  - Late menopause/early menarche
  - DM
  - Exogenous oestrogens (HRT)
  - Endogenous oestrogens (oestrogen producing tumours, polycystic ovarian tumours)
  - FHx (Lynch II syndrome: breast, ovary, gut ca)
  - Breast CA
    - Tamoxifen – oestrogenic effect on endometrium → hyperplasia
  - Endometrial hyperplasia
- PCx: commonly PMB, premenopausal irregular vaginal bleeding, menorrhagia. ?Abnormal d/c: serous, bloodstained, offensive
- Spreads by direct invasion into myometrium (localised in uterus initially)
  - Then transcervically, transtubally & spillage
  - Maybe lymphatic spread (external + internal iliac nodes + aortic nodes)
- Dx: endometrial biopsy, hysteroscopy
  - Endometrial thickness >5mm → ?pathology
  - May need MRI/cystoscopy/proctoscopy
- Tx:
  - Well differentiated early stage disease: hysterectomy alone
  - More advanced: adjuvant RT ± progestational agents
- 90% 5y survival in early Dx

**Malignant mesenchymal tumours of the uterus**
- 3% uterine malignancies
- Leiomyosarcomas = myoemtrial SMC
  - Uncommon, peak 52y
Gynaecology

- 5-10% from pre-existing fibroids
- PCx: pain, PMB, rapidly growing ‘fibroid’
- Tx: hysterectomy + BL salpingo-oophorectomy (?adj RT + chemo insurance)

**Stromal sarcomas** = stroma of endometrium
- 15% uterine sarcomas
- Younger age: 45-50y
- Assc. with adenomyosis + endometriosis
- Grade dependent on mitotic figures # & similarity to non-glandular elements of endometrium
- **Malignant mixed mesodermal sarcomas** = SMC + stroma

**Mixed mullerian duct tumours (carcinosarcomas)** = malignant elements from both endometrial epithelium + stroma
- Heterologous/homologous stromal elements
- Mean age pcx 65y
- Enlarged, abnormal uterus protruding through cervical os
- Early extrauterine spread – extensive spread at pcx

**Tumours of fallopian tubes**
- Extremely rare
- Range of ages: 18-80. Mean 52y
- PCx: abnormal vaginal bleeding, canary-yellow dc
- AdenoCA
- Surgical excision, chemo, RT

**Functional ovarian cysts**
- Usually <6cm
- May come from follicles, corpus luteum/result of exogenous gonadotrophins
  - **Lutein cysts** = luteinized ovarian cyst
    - Granulosa lutein cyst
    - Theca lutein cysts
- Can produce sex steroids & affect menstruation
- Can be monitored by USS
- Regress spontaneously
- Surgical intervention if cause of significant intraperitoneal bleeding

**Benign ovarian neoplasia**
- Solid, cystic or mixed
- PCx: asymptomatic abdominal mass, occasionally w/ hormone effects/pain, pressure symptoms
  - Tumour complications: torsion, rupture, haemorrhage, hormone-secreting tumours
  - Central dullness, resonant flanks
- Mostly serous/mucinous epithelial tumours
  - Epithelial: serious cystadenomas, mucinous cystadenomas, Brenner cell tumours
  - Sex cord stromal tumours: granulosa cell tumours, arhenoblastomas/androblastomas
  - Fibromas
  - Tumour like conditions: endometriotic cysts (chocolate cysts)
- Germ cell tumours – more common in younger pt
  - Germ cell tumours: mature cystic teratoma (dermoid cyst)
- DDx: endometriosis, functional cysts, malignant tumours

**Malignant ovarian tumours**
- 4th commonest CA death in females
- 1/75 women by 75y
- Cause unknown - ‘super ovulation’
  - Factors associated:
    - Genetics - AD pattern of inheritance in 1%
    - Parity & fertility – multiparous<nulliparous, COCP reduces risk, unsuccessful infertility tx increased risk
- 75% late presentation: distension, torsion/bleeding (pain), pressure effects, hormone effects (PMB, virilisation)
- Most epithelial tumours (can also be sex cord stromal tumours/germ cell tumours)
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• 2º ovarian CA
  o Common met site for: breast, genital tract, GIT + haematopoietic system
  o Krukenberg’s tumours = met deposits from GIT. BL, retain ovarian shape.
• Prognosis depends on stage at Dx + extent of residual disease post-op
• Tx: surgery, chemo, RT (incl. brachytherapy)
• 5yr survival 35-40%
• Incidence increases w/ age
• Screening:
  o USS
  o Ca125 glycoprotein – shed by epithelial tumours

Endometriosis

• ‘Ectopic’ endometrium = presence of extrauterine implants of endometrial like tissue consisting of glands + stroma
  o Hormone receptors present ‘. can respond to hormonal stimulation
• Commonest sites: ovaries, uterosacral ligaments, rectovaginal septum.
  o Also pelvic peritoneum covering uterus, tubes, rectum, sigmoid colon + bladder
  o Remote ectopic deposits in: umbilicus, laparotomy scars, hernia scars, appendix, vagina, vulva, cervix, LN, pleural cavity (rare)
  o Endometriomas = larger ovarian endometriosis cysts
    ▪ Rupture → acute peritoneal irritation
• May arise from metaplastic change/implantation
  o Sampson’s theory: retrograde spillage of endometrial cells during menstruation
• PCx:
  o Asymptomatic
  o Subfertility
  o Symptoms:
    ▪ Crescendic dysmenorrhoea
    ▪ Pelvic pain + swelling in week before menstruation
    ▪ Dysmenorrhoea until after period
    ▪ Ruptured endometrioma: generalised abdominal pain + peritonism
    ▪ Fixed uterus/adnexal mass adherent to pouch of Douglas: deep-seated dyspareunia
• Dx: laparoscopy, USS, MRI, elevated CA125
• Mgt:
  o Medical
    ▪ COCP
    ▪ Progesterone
    ▪ Induce pseudopregnant/pseudomenopause
  o Surgical excision
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Lesions of lower genital tract

Benign vulval lesions

- Cause unknown/AA
- Classified by appearance/histology, classification:
  - Non-neoplastic epithelial disorders of skin & mucosa
    - Lichen sclerosus (lichen sclerosus et atrophicus)
      - Post-menopausal women
      - Assc. AA disorders
      - Pale, thin vulval skin + loss of labia minora, narrow introitus, fissured skin
        - May affect perineum + perianal skin
      - PCx: vulval pruritis, soreness, superficial dyspareunia
    - Squamous cell hyperplasia
    - Other dermatoses
      - Allergic dermatitis, psoriasis, intertrigo = lichen planus
  - Vulvar intra-epithelial neoplasia (VIN)
    - Squamous VIN
      - VIN I: mild dysplasia
      - VIN II: moderate dysplasia
      - VIN III: severe dysplasia
    - Non-squamous VIN
      - Paget’s disease
- Assc. with malignant changes 5%
- Tx:
  - Non-neoplastic
    - Exclude infections
    - General advice: hygiene, potential irritants, clothing, barrier creams
    - LT follow up for early detection of malignant changes
    - ST topical steroids – clobetasol propionate
    - Surgery/laser ablation if needed
  - Exclude malignancy, infection, DM & other systemic diseases
  - Benign vulval tumours include:
    - Cysts:
      - Sebaceous cysts, epithelial inclusion cysts, Wolffian duct cysts (per-urethral area of labia minora), Bartholin’s cysts
      - Rare: cyst of peritoneal extension of round ligament → hydrocele of labium major
    - Solid tumours:
      - Fibromas, lipomas, hidradenomas
      - True squamous papillomas: warty growths, rarely malignant change
  - Tx: simple biopsy excision

Malignant vulval lesions

- Commonest 6th decade
  - Vulvar intra-epithelial neoplasia (VIN) – originally Bowen’s disease
    - Squamous VIN
      - VIN I: mild dysplasia
      - VIN II: moderate dysplasia
      - VIN III: severe dysplasia
    - Non-squamous VIN
      - Adencarcinomas
        - Paget’s disease
          - Arises from apocrine glands
          - Variable appearance. Tend to be; popular, raised, white/grey/dull red/brown, localised/widespread
          - Basal carcinomas
          - Malignant melanomas
        - Loss of epithelial architecture not penetrating the basement membrane
    - S+S: asymptomatic, vulval soreness, pruritis, lump, erythema, ulceration, raised vulval area
    - Rare. Commonly >50y
Gynaecology

- **Carcinoma of the vulva**
  - 2-3% female cancers
  - PCx: pruritis, raised lesion (may ulcerate + bleed)
  - MM: single, hyperpigmented, ulcerated (usually labia majora)
  - RFx for vulval CA: VIN, lichen sclerosus, chronic valvitis, DM, HTN, obesity
  - Spread by local invasion (starts VIN → CIS → invasion) & lymphatic (inguinal [superficial + deep] + femoral nodes)
  - Staged by size, LN involvement & spread
  - Good prognosis if confined to vulva @ presentation
  - Tx: wide local excision, node dissection, removal of vulva/nodes, post-op RT. Poor response to chemo.

**Vaginal tumours**

- **Benign tumours**
  - Vaginal cysts
    - **Congenital** – arise from embryological remnants (Gartner's duct = wolffian duct remnants)
      - Asymptomatic, incidental finding
      - Cuboidal epithelium lining
      - Tx: surgical excision
    - **Vaginal inclusion cysts** – arise from inclusion of small particles/islands of vaginal epithelium under the surface
      - Commonly in episiotomy scars
      - Contain yellowish thick fluid
      - Tx: surgical excision
  - Endometriosis
    - Commonly posterior fornix
    - Dark brown spots/reddened ulcerated lesions
  - Solid benign tumours (fibromyomas, myomas, fibromas, papillomas, adenomyomas)

- **Neoplastic lesions of the vaginal epithelium**
  - Vaginal intraepithelial neoplasia (VAIN)
    - Assc. lesions in cervix
    - Asymptomatic, picked up on smear/colposcopy
    - Tx: conservative, surgical excision, laser ablation, cryotherapy
  - **Vaginal adenosis** = columnar epithelium in vaginal epithelium (sq)
    - Found in adult female who’s mother's given diethylstilboestrol in pregnancy
    - Commonly → normal vaginal epithelium but 4% → vaginal adenoCA

- **Malignant tumours of vagina**
  - 1º malignancies rare: **carcinoma of the vagina**
    - Squamous carcinomas in upper 1/3
      - Common site for 2º from cervix + uterus
  - PCx: pain, irregular vaginal bleeding, fistula formation, offensive vaginal dc, lesions (Exophytic/ulcerated + indurated)
  - Spreads by local invasion + lymphatics
    - Upper ½ spreads like cervical CA, lower ½ like vulval CA
  - Usually bx by RT
  - Premalignant changes associated with CIN
  - **Sarcoma botryoides**
    - Rare mixed mesodermal origin tumour
    - Girls 2-3y
    - Tx: RT + surgery

**Squamo-columnar junction** = junction between ectocervix (stratified squamo:- smooth pink) + endocervix (-columnar: velvety red). Can be at any point in cervix. **Transformation zone** = area adjacent to SCJ. Where most abnormal changes occur.

**Benign lesions of the cervix**

- Extension of endocervical epithelium on to the ectocervix is N physiological variant
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- **Cervical ectropian/ectopy** = endocervical epithium advances into ectocervix
  - Bright red, velvety appearance
  - Usually asymptomatic. May cause PCB/leucorrhoea
    - **Leukorrhoea** = thickish white dc from vagina/cervical canal
  - Normal in oestrogen changes: pregnancy, adolescence, OCP \(\rightarrow\) push SCJ out
  - Just shows dynamic ability of SCJ

- **Benign polyps** commonly arise from endocervix
  - Pedunculated w/ endocervical covering
  - Bright red, vascular growths
  - PCx: irregular vaginal bleeding, PCB

- **Fibroids** may arise from cervix
  - Commonly Pedunculated. Maybe sessile \(\rightarrow\) grow & distort pelvic organs + fill vagina
  - PCx: similar to polyp + colicky uterine pain (attempt of extrusion, worse at menstruation)
  - Rarely \(\rightarrow\) malignant change via sarcomatous degeneration

- **Benign lesions** \(\rightarrow\) asymptomatic, vaginal bleeding, vaginal dc

#### Cervical screening

- 3year intervals 20-65y
- Aim: detection of CIN (cervical intra-epithelial neoplasia)
- Malignant change suggestions: increased nuclear-cytoplastic ratio, mitotic figures \& intense nuclear staining
- Cells taken from whole of transformation zone via 360° sweep with spatula
  - Stained with Papanicolaou technique (basal cells usually not picked up)
    - Nuclei \(\rightarrow\) blue
    - Superficial cell cytoplasm \(\rightarrow\) pink
    - Intermediate + parabasal cell cytoplasm \(\rightarrow\) blue/green
- **Dyskariosis** = cells that lie within normal squamous \& frankly malignant cells. Exhibit nuclear change consistent with malignancy.
Exfoliated cells appearance varies depending on hormonal status + infection
- Abnormal cytology → colposcopy
- Cone biopsies

Cervical cancer
- More common in:
  - Lower social class
  - Smokers
  - Early first intercourse
  - Multiple partners
- Associated with:
  - Herpes
  - HPV infection (type 6 + 11 → low grade CIN + condylomata, 16, 18, 45 + 56 → all grades CIN + cervical CA)
    - Continued DNA expression in transforming epithelium
    - Gene products → transform epithelium
- S+S: asymptomatic, vaginal bleeding, PCB, foul-smelling dc, pain (nerve + bone), bowel/bladder symptoms
  - Ureteric obstruction, renal failure
  - Bladder: frequency, dysuria, haematuria
  - Bowel: tenesmus, diarrhoea, PR bleeding
  - Lymphatic: lower limb oedema
- Spreads by local invasion + iliac/obturator nodes
- Tx: radical hysterectomy (early stage), RT (later)
- 5yr survival varies:
  - Stage I: 85%
  - Stage II: 60%
  - Stage III: 30%
  - Stage IV: 10%
Prolapse and disorders of the urinary tract

- **Anterior vaginal wall support:** pubo-cervical fascia (posterior surface of pubic symphysis → cervix + upper vagina)
- **Posterior vaginal wall support:** fibrous tissue of rectovaginal septum + tone of pelvic floor (esp. levator ani)
- **Uterus support:**
  - Indirect – vaginal wall supports
  - Direct –
    - Cardinal/transverse cervical ligaments (lateral pelvic wall → upper vagina + lower cervix)
    - Uterosacral ligaments (sacrum → lower cervix, upper 1/3 vagina)
- **Round + broad ligaments → weak vaginal/uterus support**

**Prolapse**

- **Anterior/posterior vaginal wall involvement – diff ° of uterine descent**
  - Urethrocele = prolapse involving urethra
  - Cystocele = prolapse involving bladder
  - Rectocele = rectovaginal hernia
  - Enterocele = formed by prolapse of rectouterine pouch through upper vaginal vault

**Uterine prolapse**

- 1° - associated with retroverted uterus, cervix descends into vagina
- 2° - cervix descends to vaginal introitus
- **Procidentia** = cervix + body of uterus + vaginal walls protrude out introitus → 3°/total prolapse

| Table 21.1 Levels of supports, with diagnosis and co-relation with symptoms |
|---------------------------------|-----------------|-----------------|----------------------------------------------------------|
| Level of pelvic organ support   | Organ affected  | Type of prolapse | Symptoms                                                   |
| Level I – uterosacral ligaments | Uterus/Vaginal vault (post-hysterectomy) | Uterocervical/Vault prolapse/enterocele | Vaginal pressure, sacral backache, ‘something coming down’, dyspareunia, vaginal discharge |
| Level II – arcus tendineus fascia pelvis (ATFP) | Urinary bladder | Cystocele | ‘Something coming down’, double voiding, occult stress incontinence, recurrent urinary tract infection |
| | Rectum | Rectocele | ‘Something coming down’, difficult defecation, manual digitation |
| Level III – anterior (pubourethral ligaments) | Urethra | Urethrocele | ‘Something coming down’, stress incontinence |
| Level III – posterior (perineal body) | Lower third of the vagina/ vaginal introitus/anal canal | Enlarged genital hiatus | Vaginal looseness, sexual dysfunction, vaginal fistula, needing to apply pressure to the perineum to evacuate faeces |

- **Symptoms depend on ° of prolapse, bowel/bladder neck involvement**
  - May present at renal failure
  - Sense of fullness of vagina + dragging discomfort
  - Visible protrusion
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- Sacral backache
- Urethrocele + cystocele: stress incontinence, double micturition
- Rectocele: difficulty evacuating, reducible mass bulging into vagina
- Enterocoele: symptoms of high rectocele or occasionally cystocele

**Pathogenesis**
- Congenital – weak supports of uterus + vaginal vault
- Acquired – look at predisposing

**Predisposing:**
- High parity – weakened pelvic floor
- Chronically raised intra-abdominal pressure
- Hormonal changes – less oestrogen \(\rightarrow\) thinning of vaginal walls \(\rightarrow\) less uterine support

- May spontaneous improvement 6months post-partum
- Tx: surgical repair, hysterectomy
  - No tx needed for asymptomatic minor degree prolapse

**Frequency** = >7/day or >1/night. Causes: pregnancy, DM, pelvic mass, renal failure, diuretics, excess fluid intake, habit, UTI

**Stress incontinence**
- True incontinence = continuous loss of urine through vagina. Commonly fistula. Could be urinary retention manifestation + overflow
- Stress incontinence = involuntary loss of urine during brief period of raised intra-abdominal pressure
  - Examination: loss of urine with increased intra-abdo pressure (objectively seen)
- Urge incontinence = problem of sudden detrusor contraction with uncontrolled loss of urine
  - Causes:
    - Idiopathic detrusor instability
    - Urine infection
    - Obstructive uropathy
    - Diabetes
    - Neurological disease

- Mixed urge + stress incontinence = women with urge incontinence also have true stress incontinence + if later corrected \(\rightarrow\) detrusor instability disappears
- Commonly assc. with prolapse of bladder neck & detrusor instability (30%)

**Cystometry**
- Low resting urethral pressure
- Decreased pressure transmission to abdominal urethra
- Inability to stop midstream during micturition

**Detrusor instability**
- PCx: frequency, urgency, nocturia & incontinence
- Usually idiopathic but must exclude:
  - Obstructive uropathy, diabetes, neurological disorders & infection
- May present as stress incontinence
- Cystometry
  - High resting urethral pressure
  - Frequent strong bladder contractions at low volumes
- Mgt: bladder drill, anticholinergics, tx infection