• Stage 2b or worse – chemo-radiotherapy.

Prognosis (5y) –
• 1a – 95%
• 2 – 60%
• 3/4 – 10-30%
• LN involved – 40%
• LN clear – 85%
• Overall = 65%
Uterus and vagina are held at 3 levels:
- Level 1 – Cervix and upper 1/3rd are supported by the cardinal and uterosacral ligaments.
- Level 2 – Mid vaginal 1/3rd is attached by endofascial condensation laterally.
- Level 3 – Lower 1/3rd is attached by levator ani muscles and the perineal body (termed the pelvic diaphragm).

Types of prolapse:
- Urethrocoele – Lower anterior vaginal wall, urethra only.
- Cystocele – upper anterior vaginal wall, involving the bladder.
- Apical – Uterus, cervix and upper vagina.
- Enterocoele – Upper posterior wall with loops of small bowel.
- Rectocoele – Lower posterior wall with the anterior rectum.

Grading of prolapse with the ICS pelvic organ prolapse (POP):
- 1 – Leading surface not below 1cm above hymenal ring.
- 2 – Leading edge from 1cm above to 1cm below hymenal ring.
- 3 – 1cm below the hymenal ring but not vaginal eversion.
- 4 – Vagina completely everted.

Half of all parous women have some degree of prolapse and 10-20% seek medical attention.

Aetiology – Uncommon in nulliparous women. Other predisposing factors include Ehlers-Danlos syndrome, menopause, obesity (intra-abdominal pressure), iatrogenic factors.

### Symptoms of prolapse

<table>
<thead>
<tr>
<th>Category</th>
<th>Symptom</th>
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</thead>
<tbody>
<tr>
<td>General</td>
<td>Dragging sensation, vaginal lump</td>
</tr>
<tr>
<td>Cystourethrocoele</td>
<td>Urinary frequency, incontinence</td>
</tr>
<tr>
<td>Rectocoele</td>
<td>Occasionally difficulty in defecating</td>
</tr>
</tbody>
</table>

Investigation – Pelvic US if mass and urodynamic testing if incontinence.

Management – Pessaries (shelf or ring) may be used for 6-9m at a time, alongside oestrogen to reduce ulceration.
**Combined vaginal ring (Nuvaring):**
Daily doses of 15ug ethinyloestradiol being worn for 3w and then removed for 7d withdrawal bleed.

**Progestogen-only pill (POP):**
Mini pill Micronor contains a lower 350mg and must be taken every day without a break and at the same time (<3h). Cerazette is 3rd generation and inhibits ovulation in 95%. Makes cervical mucus hostile and inhibits ovulation in 50%. Pearl index is 1/100. Side effects include vaginal spotting, weight gain, and PMS, potential ovarian cysts. There is no increased risk of thrombosis and can be used in lactating mothers. If >3h then one should be taken and condoms for 2d. Not affected by antibiotics.

**Depo-Provera and Noristerat:**
Progestogens are slowly released bypassing the portal circulation. Administered every 3m (Noristerat 8w) and failure rate <1/100. Causes irregular bleeding in the first few weeks but then usually amenorrhoea (potentially just after). Bone density decreases over the first 2-3 years then stabilises.

**Nexplanon:**
40mn rod in the upper arm with failure rate <1/100, lasting 3y. Irregular bleeding in the first year and easy removal. No BMD drop.

**‘Morning-after pill’:**
Levonelle contains progestogen, best taken <24h (95%) but allowed <72h (58%), affecting sperm function and endometrial receptivity. Ulipristal (ellaOne) prevents ovulation by blocking progesterone. <120h.

**Barrier contraception**
Male/female condom failure rate is 2-15/100. Diaphragms and caps can be used against the cervix but Pearl index is 5/100.

**Intrauterine contraceptive devices – ‘the coil’**
HRT consists of oestrogen in women who have had a hysterectomy and combined with progestogen in those who have not.

Oestrogens come synthetic from pregnant mares’ urine (ethinyloestradiol) or naturally (oestradiol) from soya beans. Progestogens such as levonorgestrel are derived from soya beans or yams. Can use Mirena IUS as no bleed and contraceptive. Used 10-14d every 4w (bleeds) or 14d every 13w (no bleeds). Tibolone can be used with both and causes amenorrhea with no SEs.

- Adv – Oestrogen is effective in treating hot flushes and commonly used <5y, alongside vaginal dryness, dyspareunia and urinary symptoms. HRT reduces osteoporosis risk and risk of colorectal cancer by a third.
- Dis – Combine slightly increases the risk of breast cancer, DVT and gallbladder disease. Oestrogen only increases endometrial.

Hot flushes may be treated with progestogens, clonidine and SSRIs. Bisphosphonates for osteoporosis treatment.
Spontaneous miscarriage:
Dies or delivered <24w, 15% chance but increases with maternal age. Aetiology includes isolated non-recurring chromosomal abnormalities (>60%). Not from exercise, intercourse, stress and emotion.

Threatened miscarriage – bleeding but still alive and os is closed, 25%.
Inevitable miscarriage – heavier bleeding, os is open, about to occur.
Incomplete miscarriage – some passed but os is usually still open.
Complete miscarriage – all passed and bleeding diminished, os closed.
Septic miscarriage – endometritis from infected contents, vaginal loss is usually offensive and fever potentially.
Missed miscarriage – died in utero but not recognised until US, os closed. Fetal pole >7mm with no heart beat or gestational sac >25mm.

Investigations – Early pregnancy assessment units (EPAU) should US for a viable foetus and retained products. HCG levels will normally increase >66% within 48h. FBC and rhesus group should be checked.

Management – Admission for ectopic or heavy bleeding (>2w). IM ergometrine for bleeding if non-viable. Anti-D for rhesus –ve and polyp forceps to remove products of conception.

Non-viable intrauterine pregnancy – Expectant management with >80% success with incomplete in 2-6w and 30-70% with missed miscarriage. Medical management is prostaglandins with 80% success rate in incomplete and 4-90% missed. Surgical is with evacuation of retained products of conception (ERPC) using vacuum aspiration (potential Asherman’s and uterine perforation).

Recurrent miscarriage:
3 or more miscarriages in succession, affecting 1% couples.

Aetiology –
- Antiphospholipid antibodies – Thrombosis in the uteroplacental circulation, treated with aspirin and LMW heparin.
- Alcohol – 1-2u/w and NICE <1u/24hr. No binge drinking.
- Refer to previous medical conditions.
- Adapt meds – AEDs, ACEI, immune-modulators.
Mother mounts an immune response against antigens on fetal RBCs that enter her circulation, with resulting antibodies crossing the placenta causing fetal RBC destruction. 15% Caucasian women are rhesus –ve.

Mendelian inheritance on C/c, D/d and E/e rhesus, D being the most important (dominant). The mother will create anti-D antibodies if she is exposed to D rhesus positive fetal RBCs. This happens at sensitisation:

- Termination or ERPC
- Ectopic pregnancy
- Uterine procedure – amniocentesis or CVS
- Delivery

If the mother gets pregnant again soon then the antibodies can haemolyse the RBCs of the next foetus. This can lead to haemolytic anaemia and ultimately death. Similar response to anti-c and anti-Kell.

Exogenous anti-D is given to the mother to ‘mop up’ fetal RBCs that have crossed the placenta. Not if both parents are rhesus negative.

Antenatal – Anti-D (1500IU) is given at 28w to reduce rate of isoimmunisation from 1.5% to 0.2%. Also given at any sensitising event <72h.

Postnatal – Neonates blood group is checked and if rhesus positive anti-D is given to mother <72h of delivery. Kleihauer test for number of fetal cells in maternal circulation is <2h delivery to detect larger fetomaternal haemorrhages.

In mild rhesus disease it can lead to neonatal jaundice only, or if sufficient then haemolytic disease of the newborn. More severe disease can lead to in utero anaemia and includes ascites, cardiac failure and hydrops. Anaemia is assessed with doppler US of the middle cerebral artery, fortnightly for at-risk pregnancies.

Treatment is with transfusion up to 36w where the baby is delivered. Postnatal neonates have FBC, blood film, bilirubin and rhesus group.
Abnormal lie (transverse or oblique):
Longitudinal lie within the uterus with either cephalic or breech. If not then transverse with head in an iliac fossa (oblique) or in a flank (transverse).

Aetiology – Preterm labour is more commonly complicated by abnormal lie. Circumstances that allow more room to turn are the most common causes, such as polyhydramnios or high parity. Conditions that prevent turning may cause persistent transverse lie, such as uterine abnormalities and twin pregnancies. Same with conditions that prevent engagement, such as placenta praevia and pelvic tumours.

Management – No action needed if <37w unless in labour. Admit if >37w and USS for cause (discharge if version for 48hr). If not stabilised by 41e or pelvis obstructed then CS.

Breech presentation:
Breech includes extended, flexed and footling. Occurs in 3% pregnancies. More common in early pregnancy and things that prevent movement such as fetal/uterine abnormalities or twin pregnancies.

Investigation – Commonly missed (30%) but diagnosis only important >37w or in labour. Upper abdomen discomfort is common with a hard head palpable. USS confirms the diagnosis along with fetal abnormality, pelvic tumour or a placenta praevia for prerequisites of ECV.

Management –
• From 37w external cephalic version is attempted with a success rate of 50%, and where 3% will turn back with only 3% turning spontaneously successfully after. Tocolytic uterine relaxant helps, with an inpatient admission under US, and CTG straight after with anti-D to rhesus -ve women. Emergency CS is needed in 0.5%.
  Success factors – Parous, non-caucasean, engaged, no head palpable.
  Contraindications – No vaginal delivery anyway, twins, ruptured membranes or recent APH.
• CS – Safest if ECV failed/contraindicated.
• Vaginal breech birth – More risky if >4kg, fetal comp or extended head/footling legs. Pushing is not encouraged until the buttocks is visible, CTG is advised and epidural is common. 30% has slow cervical dilation and needs emergency CS.
- Co-twin death – If one MC twin dies the drop in BP causes acute transfusion of blood, leading to hypovolaemia and 30% neurological damage.
- Monoamniotic twins – The cords get tangled and in utero death is common.

Antepartum management – High risk with iron and folic supplements. The early USS shows a lambda sign in DC and a T sign in MC. Selective reduction in 3+ at 12w. USS of MC twins starts at 12w and TTTS can be seen with tricuspid regurgitation and polyhydramnios and are usually scanned every 2w.

Intrapartum management – CS is more common and indicated if the first born is breech or transverse, high order multiples or antepartum complications. Usually 37-38w for DC and 34-37w for MC twins. CTG is advised due to hypoxia risk for the second twin.
Cervical dilatation – the stages of labour

Initiation and diagnosis of labour:
Painful regular contractions of the uterus lead to effacement then dilatation of the cervix. Braxton Hicks contractions occur with this being fake labour. Prostaglandins reduce cervical resistance and increases oxytocin from the posterior pituitary.

The first stage:
Lasts from the diagnosis of labour until the cervix is dilated by 10cm (fully dilated). The membranes will usually rupture.
• The latent phase has irregular contractions with mucoid plug, from 6hr-3d. Cervix is effacing (starts fundus, retracting muscle fibres, fetus forced down with pressure on cervi). First 3cm.
• The active phase has regular, frequent contractions, with around 1cm/h (nulliparous) and 2cm/h (multiparous). <12hrs.

The second stage:
Lasts from full cervical dilatation to delivery. Passive stage is from full dilatation until the head reaches the pelvic floor and the woman gets the desire to push. The active stage is when the mother is pushing, with the foetus being delivered 40m (nulliparous) and 20m (multiparous). Primi 1hr suspect delay and 2hr diagnose, multi 30m suspect delay and 1hr diagnose.

Delivery:
Head extends out the pelvis and rotates 90degrees during restitution. The anterior shoulder then usually comes out first and then the posterior shoulder.

The third stage:
Delivery of the foetus, usually lasts about 15m and normal blood loss is <500mL. Uterine muscle fibres contract to compress the blood vessels.

Perineal trauma:
• 1st degree – minor damage
• 2nd degree – perineal muscle (episiotomy)
Management – Delivery in hospital with CTG is advised.

**Prelabour term rupture of the membranes**

10% women >37w the membranes rupture before the onset of labour. Aetiology unknown.

Diagnosis – Gush of clear fluid then an uncontrollable intermittent trickle. USS may show reduced liquor. Hindwater where still intact. Check temperature and lie/presentation.

Risks – Neonatal infection (increase by vaginal exam, the presence of group B strep and increased duration of membrane rupture.

Management – Vaginal swab for infection and CTG. ABx >18hr against strep B. Potential immediate induction to lower infection risk, amniocentesis. 80% start labour <24hr.
On what basis can you reassure her that the cyst is benign?
  • Cyst if the fluid is not blood stained, there is no residual lump and the same cyst does not continually refill.

What should be done in view of her family history? Try to look up her risk using the NICE guidelines and the IBIS 2 risk calculator.
  • Draw a family tree as may be many maternal siblings etc.
  • Offer genetic testing if chance of BRCA1/2 is >10%.
  • Yearly mammograms (40+ moderate risk) (30+ MRI high risk).
  • Prophylactic tamoxifen.

3) The next lady is 49 years of age with a 2.5cm lump in the medial aspect of her right breast, present for one month. A mammogram and ultrasound have both been reported as highly suspicious of malignancy. You perform a core biopsy. The following week she returns for the result, which is diagnostic of malignancy. She has been on the Internet all week and has some specific questions for you.

Why do some ladies have “lumpectomies” and some have “mastectomies”? Which should I have?
  • Mastectomy if removing >20% breast volume, sub-areolar, multifocal, very strong FH, inflammatory cancer.

My next-door neighbour had a mastectomy three years ago. They also removed ‘glands’ from her armpit. Now she has a terribly swollen arm. Will I need my glands out and will I get complications like her?
  • USS is always performed as ∼40% have nodal disease.
  • Sentinel node biopsy (96% accuracy)
  • Axillary node clearance (1-2% recurrence), with SE including seroma (60%), drain, parathesia, lymphadenopathy.

Will I need chemotherapy or radiotherapy? How do you tell whether I need it?
  • Chemo if moderate/poor criteria such as <75, nodal disease, pre-op, more likely if non-oestrogen sensitive, HER2, more if the grading is higher. Oncotype DX testing.