Mechanisms of Labour

Labour = “products of conception expelled >24 weeks”

1st Stage of Labour
- Cervical dilation
  - Latent 0-3cm
  - Active 3-10cm
- 12-15h primip (1cm/2h), 7.5h multip (1cm/h)
- Painful regular rhythmic contractions (3-4 in 10min) ± membrane rupture
- Signs of 1st stage:
  - Regular painful contractions → progressive cervical dilation
  - “Show” (passage of blood stained mucus)
  - Rupture of membranes
- Fetal head descends into pelvis
- Complications
  - Passenger: cephalopelvic disproportion, fetal malpresentation
  - Passage: fibroids/ cervical stenosis
  - Power: primary uterine interia
- Interventions: prostaglandin gel (to precipitate initiation of labour), artificial rupture of membranes (for cervical dilation), oxytosin (for contractions)

2nd Stage of Labour
- Expulsion of the fetus
  - 45-120min primip, 15-45min multip
- Mechanism
  1. Flexed fetus descends: head very flexed on spine. Descends and engages.
  2. Internal rotation: whole fetus internally rotates (until its facing towards maternal back – head at level of ischial spines)
  3. Extension of head: head extends around pubic symphysis until delivered
  4. Restitution (external rotation): after head delivered, fetus rotates back to its original position i.e. shoulders AP (comes out sideways)
  5. Delivery of shoulders: anterior shoulder comes out first, then rest in pelvic axis (i.e. anteriorly)
- First sign is desire to bear down
- Complications (dystocia = “difficulty in labour”)
  - Secondary uterine interia
  - Persistent occipito-posterior position
  - Narrow mid-pelvis
- Intervene when: maternal/fetal distress, incomplete internal rotation causing failure to progress
- Interventions: instrumental delivery, C-section

3rd Stage of Labour
- Expulsion of the placenta
  - Around 5-10min with syntometrine (30min-1hour without)
  - Syntometrine given when head born to reduce time and PPH risk
- Signs of 3rd stage:
  - Gush of blood (50-100ml)
  - Lengthening of cord
- Managed by controlled cord traction
- Haemostasis occurs due to criss-cross pattern of uterine muscle fibres (squeeze vessels)
- Complications
  - Post partum haemorrhage
    - Primary (>500ml in <24h) = TTTT = Tone↓, Tension (of slightly invasive placenta), Trauma to perineum, Thrombosis
    - Secondary (>500ml >24h) = retained tissue/ clot
  - Retained placenta
  - Inversion of uterus

Other Points
- Pelvic anatomy e.g.
  - Pelvic inlet (brim) = sacral prominence, arcuate and pectineal lines, upper margin of pubic symphysis
  - Pelvic outlet = coccyx tip, sacrotuberous ligament, ischial tuberosities, pubic arch
- False (greater) pelvis = part of pelvis above pelvic brim
- True (lesser) pelvis = part of pelvis below pelvic brim

- Female pelvic features (compared to male)
  - wider & shallower
  - round/oval pelvic inlet (male is heart shaped)
  - larger pelvic outlet
  - pubic arch >100° (male is <90°)
  - wider greater sciatic notch
  - curved sacrum

- Common fetal orientations
  - Lie:
    - longitudinal
    - transverse
    - oblique
  - Presentation:
    - cephalic
    - breech
  - Position (denominator (bony prominence of presenting part) relative to pelvic rim):
    - left/right occipito-anterior (LOA most common)
    - left/right occipito-transverse
    - left/right occipito-posterior

Also see OSCEstop notes on performing a delivery