

Post-term pregnancy and Induction of Labour

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- Prolonged pregnancy is defined as a pregnancy that continues beyond 42 weeks; the gestational age having been established by an ultrasound scan in the first trimester.
- Incidence of prolonged pregnancy occurs in 5–10 per cent of all pregnancies.



Causes and risk factors

- The most common cause is inaccurate dating.
- Primigravidas
- Previous prolonged pregnancy (25% recurrence)
- Male fetuses
- Obesity
- Hormonal factors
- Genetic predisposition
- Fetal adrenal insufficiency and fetal adrenal hypoplasia



Fetal risks

- Post maturity syndrome.
- Stillbirth
- Perinatal mortality
- Meconium aspiration
- Neonatal acidaemia
- Low Apgar scores
- Fetal macrosomia and shoulder dystocia with resultant risk of orthopedic or neurological injury



Post maturity syndrome

- IUGR
- Meconium-stained amniotic fluid
- Oligohydramnios
- Fetal distress
- Evidence of loss of subcutaneous fat
- Dry cracked skin reflecting placental insufficiency



Maternal risks

- Labour dystocia
- Perineal injury related to macrosomia
- Operative vaginal delivery
- Caesarean delivery
- Emotional impact





Management

1. Accurate dating of pregnancy

- Routine ultrasound examination for pregnancy dating demonstrated a reduction in the rate of false-positive diagnosis and thereby the overall rate of prolonged pregnancy from 10–15% to approximately 2–5%
- First-trimester ultrasonography.

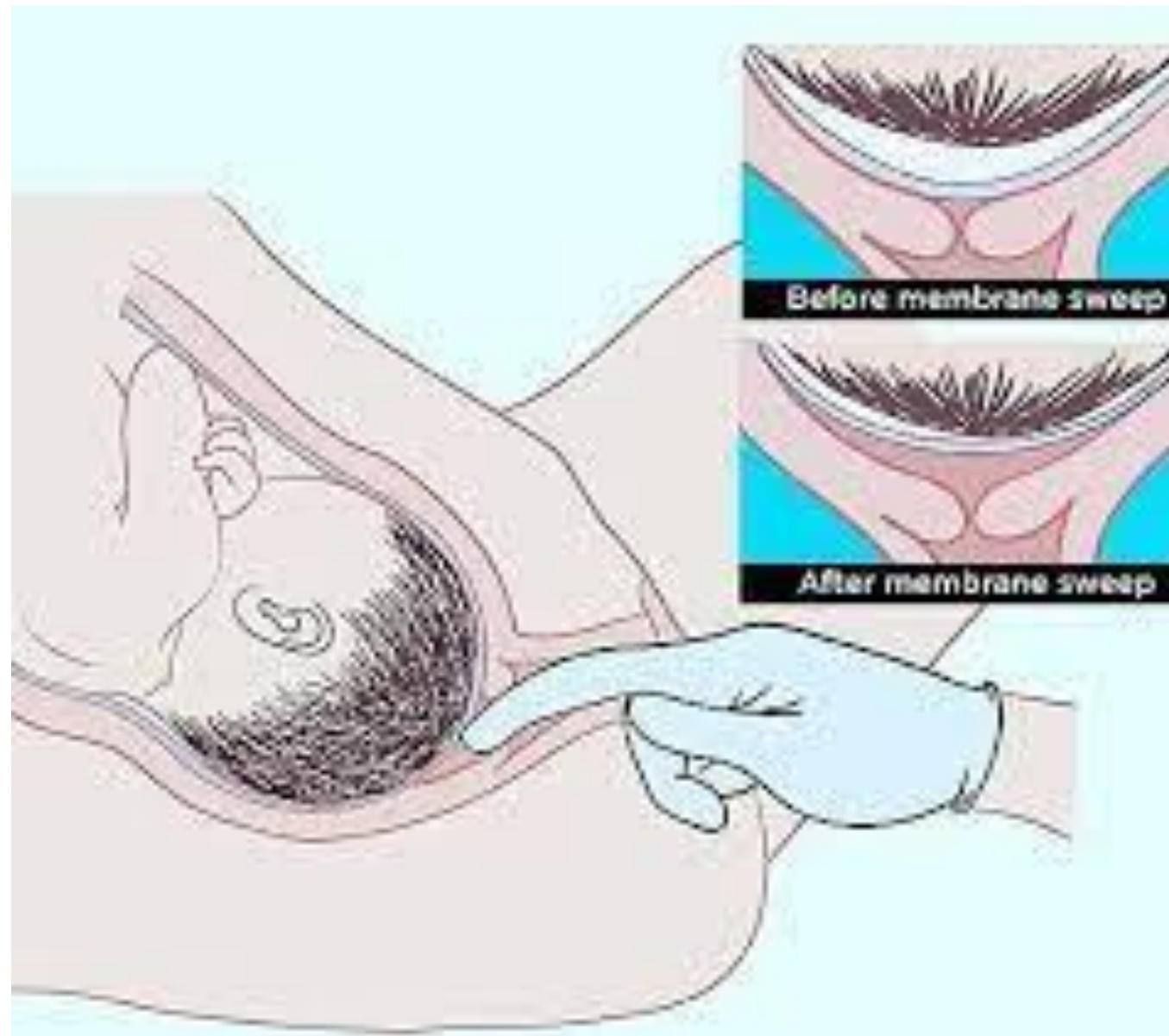


2. Prevention of prolonged pregnancy

Membrane sweeping

- Stripping of the membranes
- In Outpatient clinics
- Increasing local production of prostaglandins
- After 38 weeks
- Success rate 1/8 women





3. Induction of labor

- Preferred at 41 completed weeks and beyond, to reduce perinatal mortality, decrease meconium staining of the amniotic fluid and cause a small decrease in caesarean section.
- The preferred course of management
- Shown to be cost-effective



4. Monitoring prolonged pregnancy

- In women who decline induction of labour and choose conservative management.
- At least twice-weekly CTG and US estimation of maximum amniotic pool depth.



Induction of labor

IOL

- Induction of labour is the process by which labour is started prior to its spontaneous onset by artificial stimulation of uterine contractions and/or progressive cervical effacement and dilatation, leading to active labour and birth.
- The clinical need for IOL occurs when it is perceived that the outcome of the pregnancy will be improved if it is interrupted by induction, labour and birth.
- May be less efficient, more painful and more likely to require epidural analgesia and assisted birth.
- Occurring in approximately 20 per cent of all births



INDICATIONS

- Maternal conditions
- Fetal conditions



Maternal conditions

- Post-date pregnancy
- Premature rupture of membrane
- Diabetes
- Hypertension
- Obstetric cholestasis
- Advanced maternal age
- Maternal request



Fetal conditions

- Small for gestational age
- Reduced fetal movements
- Multiple pregnancies
- Suspected fetal macrosomia?
- Intrauterine fetal death



Contraindications

- Abnormal placentation
- Fetal distress
- Previous Classical cesarean section
- Active primary Herpes infection
- Invasive cervical cancer
- Abnormal fetal presentation(breech)
- Abnormal fetal lie(transverse lie)



Assessment before induction, monitoring and pain relief

- Ensure the position of the baby and the woman's condition are suitable for induction
- Assessing and recording the Bishop score
- Confirming a normal fetal heart rate pattern using antenatal cardiotocography interpretation
- Confirming the absence of significant uterine contractions
- Monitor fetal wellbeing and uterine contractions with intrapartum cardiotocography interpretation
- Explain to women that induced labour may be more painful than spontaneous labour and provide women with the pain relief appropriate for them



The bishop score

- The Bishop score is a numerical value obtained by doing a vaginal examination, and is based on the dilation, effacement (or length), position and consistency of the cervix and the station of the head with respect to the ischial spines of the pelvis.
- A score of less than or equal to 6, or a score greater than 6, was used to help determine choice of pharmacological or mechanical methods to induce labour.



Modified Bishop's score

Cervical feature	Score: 0	1	2	3
Cervical dilatation	< 1cm	1-2 cm	2-4 cm	> 4 cm
Cervical length	4 cm	2-4 cm	1- 2 cm	< 1 cm
Station of presenting part	-3 cm	-2 cm	-1/0 cm	+1/+2 cm
Consistency of cervix	Firm	Average	Soft	
Position of cervix	posterior	Mid position/ anterior		

Ian Donald's practical obstetric problems, 7th edition, chapter 26, page 498, table 26.1.



METHODS OF IOL

Medical

- Prostaglandins (E1, E2)
- Oxytocin

Mechanical

- Sweeping
- Balloon catheters
- Amniotomy



Vaginal prostaglandins

- The recommended method of choice is two vaginal PGE₂ tablets (3 mg) or gel (1–2 mg) at 6-hourly intervals, or one PGE₂ controlled-release pessary (10 mg) over 24 hours
- An unfavourable cervix, the preferred method when bishop score <7
- Higher rates of birth by 24 hours
- less PPH

Disadvantage:

- Uterine hyperstimulation
- PGE₁ (misoprostol) is not licensed to use for this purpose except in IUFD



Oxytocin

- Anti-diuretic activity
- (Syntocinon®) is a synthetic nanopeptide identical with oxytocin.
- Allow a delay of six hours after administration of the last dose of vaginal prostaglandins before commencing oxytocin.
- In women with intact membranes, amniotomy should be performed where feasible before starting oxytocin infusion.
- Use the minimum dose possible and aim for a maximum of 3 – 4 contractions in ten minutes.
- Together with amniotomy is the preferred method when bishop score ≥ 7



- Side effects of oxytocin

Uterine hyperstimulation

High doses of oxytocin or prolonged periods of infusion of oxytocin in electrolyte-free fluids may interfere with vasopressin receptors which can result in water intoxication and hyponatremia

- Symptoms and signs of water intoxication:

Headache, Nausea & Vomiting, Lethargy, drowsiness, Unconsciousness, grand mal type seizures

- Management

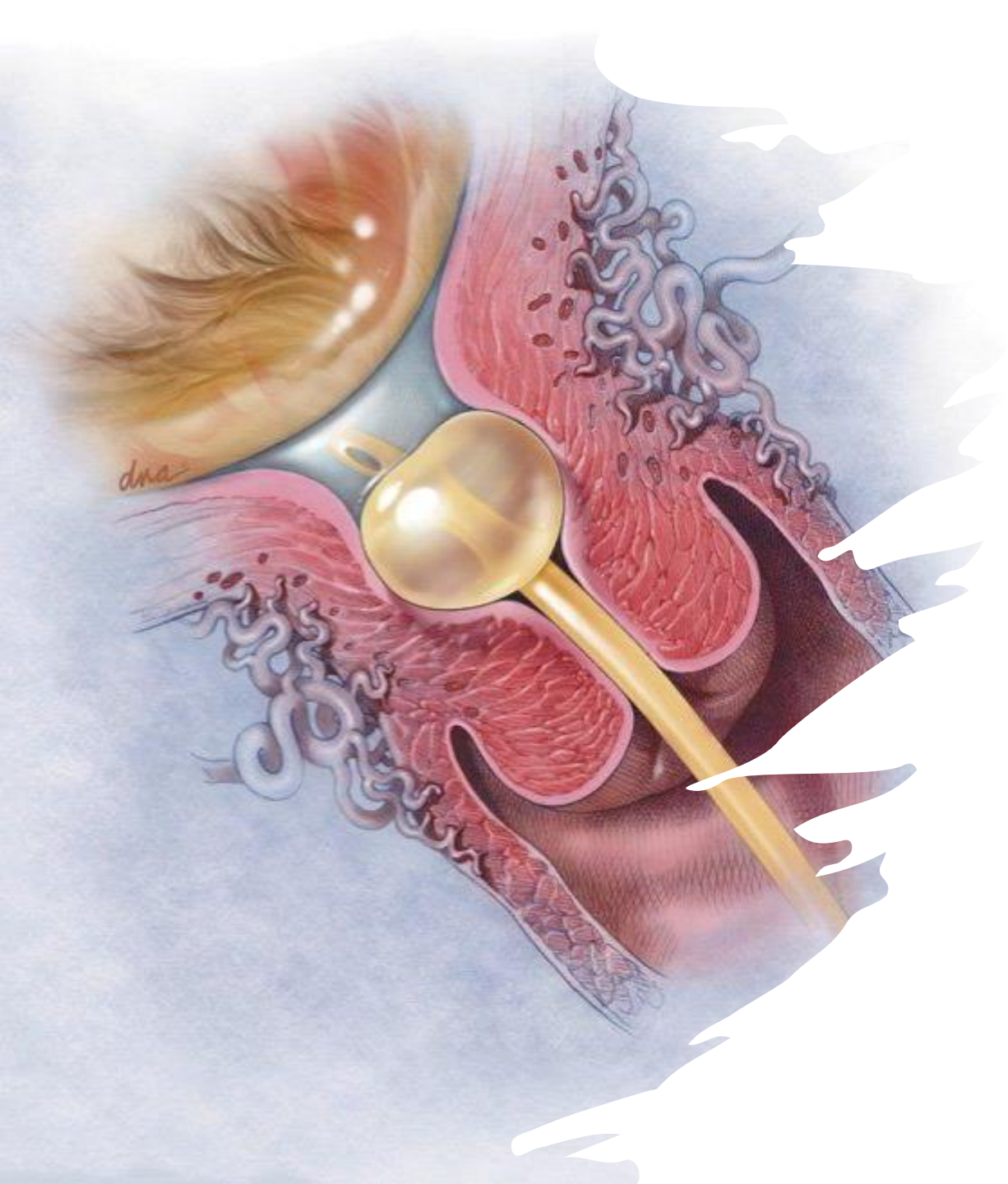
Discontinue oxytocin infusion immediately and restrict fluid intake

Promote diuresis

Correct electrolyte imbalance

Control convulsions

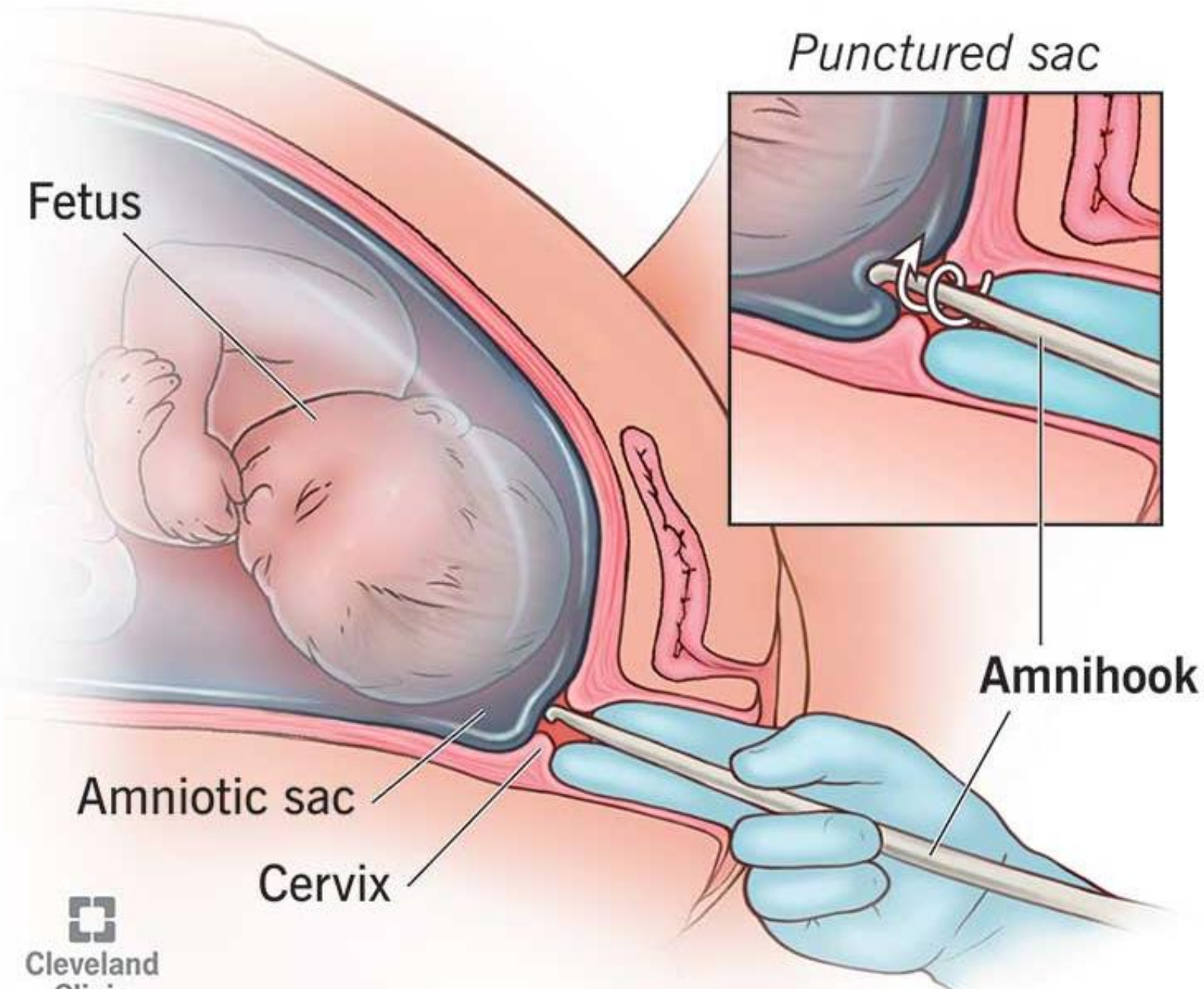




Balloon catheters

- Inserted into the cervical canal or into the extra-amniotic space.
- The preferred method with previous CS scar.
- Reduced rates of uterine hyperstimulation.





Amniotomy

- Amniotomy describes the artificial rupture of the membranes (ARM) and is only possible if the cervical Os is open and the membranes are accessible.
- Releases prostaglandins in an attempt to expedite labour.
- For women with a Bishop score of more than 6, offer induction of labour with amniotomy and an intravenous oxytocin infusion.
- No uterine hyperstimulation



Complications of IOL

- More painful
- More likely to require epidural analgesia and assisted birth.
- Failed IOL
- Uterine hyperstimulation
- Cord prolapse
- Uterine rupture



Uterine hyperstimulation

- Can appear as tachysystole (increased uterine contractions) or hypertonus (increased uterine activity with fetal distress), which leads to fetal heart rate changes and occurs in 1–5% of cases depending on the methods of induction used.
- Do not administer any more doses of medicines to induce labour and remove any vaginal pessaries
- Tocolytics can be used to reduce the uterine activity and reversible hyperstimulation. Terbutaline is recommended as first-line treatment.
- If FHR changes remain, emergency caesarean birth may be considered necessary



THE END