Obstetrics & Gynecology
TEAM

Post Term + Induction of Labor

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◆very important ◆mentioned by doctor ◆team notes ◆not important

P.S: The "Post Term Pregnancy" section is all taken from kaplan booklet, the doctor didnt mention anything about it

POSTTERM PREGNANCY

A 21-year-old primigravida at 42 weeks' gestation by dates comes to the outpatient prenatal clinic. She has been seen for prenatal care since 12 weeks' gestation, confirmed by an early sonogram. She states that fetal movements have been decreasing. Fundal height measurement is 42 cm. Her cervix is long, closed, posterior, and firm. Nonstress test is reactive, but amniotic fluid index is 4 cm.

Definition

- **Academic.** The most precise definition is a pregnancy that continues for ≥40 weeks or ≥280 days postconception. This includes 6% of all pregnancies.
- **Practical.** Because most of the time the date of conception is not known, a practical definition is a pregnancy that continues ≥42 weeks or ≥294 days after the first day of the last menstrual period.
- **Statistics.** Generally, 50% of patients deliver by 40 weeks, 75% by 41 weeks, and 90% by 42 weeks. These statistics assume ovulation occurred on day 14 of a 28-day menstrual cycle. These figures probably overstate the actual number because up to half of these patients had cycles longer than 28 days.

Etiology. The most common cause of true postdates cases are idiopathic (no known cause). It does occur more commonly in young primigravidas and rarely with placental sulfatase deficiency. Pregnancies with anencephalic fetuses are the longest pregnancies reported.

Significance. Perinatal mortality is increased two- to threefold. This is a direct result of changes on placental function over time.

- **Macrosomia syndrome.** In most patients, **placental function continues** providing nutritional substrates and gas exchange to the fetus, resulting in a healthy but large fetus. **Cesarean rate is increased** owing to prolonged or arrested labor. Shoulder dystocia is more common with risks of fetal hypoxemia and brachial plexus injury.
- **Dysmaturity syndrome.** In a minority of patients, **placental function declines** as infarction and aging lead to placental scarring and loss of subcutaneous tissue. This reduction of metabolic and respiratory support to the fetus can lead to the asphyxia that is responsible for the increased perinatal morbidity and mortality. **Cesarean rate is increased** owing to nonreassuring fetal heart rate patterns. Oligohydramnios results in umbilical cord compression. Hypoxia results in acidosis and in utero meconium passage.

Management. Management is based on 2 factors.

- **Confidence in dates.** Identify how much confidence can be placed on the gestational age being truly >42 weeks.
- **Favorableness of the cervix.** Assess the likelihood of successful induction of labor by assessing cervical dilation, effacement, position, consistency, and station. The Bishop score is a numerical expression of how favorable the cervix is and the likelihood of successful labia induction.
  - Favorable cervix is dilated, effaced, soft, and anterior to mid position. Bishop score is ≥8.
  - Unfavorable cervix is closed, not effaced, long, firm, and posterior. Bishop score is ≤5.

Bishop Scoring Method

Parameter\Score	0	1	2	3
Position	Posterior	Intermediate	Anterior	-
Consistency	Firm	Intermediate	Soft	-
Effacement	0–30%	31–50%	51–80%	>80%
Dilation	0 cm	1–2 cm	3-4 cm	>5 cm
Fetal station	-3	-2	-1, 0	+1,+2

Patients can be classified into 3 groups.

- **Dates sure, favorable cervix.** Management is aggressive. There is no benefit to the fetus or mother in continuing the pregnancy. Induce labor with IV oxytocin and artificial rupture of membranes.
- **Dates sure, unfavorable cervix.** Management is controversial. Management could be aggressive, with cervical ripening initiated with vaginal or cervical prostaglandin E_2 followed by IV oxytocin. Or management could be conservative with twice weekly NSTs and AFIs awaiting spontaneous labor.
- **Dates unsure.** Management is conservative. Perform twice weekly NSTs and AFIs to ensure fetal well-being and await spontaneous labor. If fetal jeopardy is identified, delivery should be expedited.

Table 8-4. Placental Function in Post-term Pregnancy

Maintained	Deteriorates
Macrosomia (80%)	Dysmaturity (20%)
Difficult labor and delivery	Placental insufficiency
↑ C section (forceps, vacuum extractor, shoulder dystocia, birth trauma)	↑ C section (acidosis, meconium aspiration, oxygen deprivation)

Management of Meconium. Previous recommendations to prevent meconium aspiration syndrome (MAS) included:

- **In labor**, amnioinfusion (with saline infused through an intrauterine catheter) to dilute meconium and provide a fluid cushion to prevent umbilical cord compression.
- **After the head is delivered**, suction the fetal nose and pharynx to remove any upper airway meconium.
- **After the body is delivered**, visualize the vocal cords with a laryngoscope to remove meconium below the vocal cords.

Newer recommendations (American Heart Association, American Academy of Pediatrics):

- **Amnioinfusion** may be helpful to prevent umbilical cord compression; okay to perform it.
- **Suctioning of fetal nose and pharynx** makes no difference in preventing MAS; do not routinely perform.
- **Laryngoscopic visualization** of vocal cords is only indicated if the neonate is depressed; perform selectively.

Induction of Labor (IOL):

DEFINITION ➡Induction of labor is defined as an intervention designed to artificially initiate uterine contractions leading to progressive dilatation and effacement of the cervix and birth of the baby. This includes both women with intact membranes and women with spontaneous rupture of the membranes but who are not in labor. But delivery will come faster with the SROM.

INDICATIONS:

- Post-term pregnancy ➡ most common (after 40w is considered post term, but we wait until 41 w then we deliver her in the 42).
- PROM (premature rupture of membranes)
- IUGR (intra-uterine growth retardation) (so they don't die)
- Non-reassuring fetal suvillence. (e.g. baby is not moving …….)
- Maternal medical conditions ➡ DM (2nd most common, we don't wait until 42w she shouldn't even reach 40w), renal disease, HPT, gestational HPT, significant pulmonary disease, antiphospholipid syndrome
- Chrioamnionitis
- Abruption
- Fetal death

RISKS of IOL:

- ⬆ rate of operative vaginal deliveries (because vagina might not be prepared)
- ⬆ rate of CS (also because vagina might not be prepared)
- Excessive uterine activity
- Abnormal fetal heart rate patterns
- Uterine rupture
- Maternal water intoxication
- Delivery of preterm infant due to incorrect estimation of GA (that's why we should compare gestational age with US).
- Cord prolapse with artificial rupture of membrane (ARM) (umbilical cord is damaged when exposed to air and vagina, this is an emergency they will take her immediately to CS).

the earlier the imaging the better estimation of ☺ GA

CONTRAINDICATIONS: ★

(mostly are Contraindications to labor or vaginal delivery)

- Previous myomectomy entering the cavity (because contractions might be very strong on the scar causing uterine rupture).
- Previous uterine rupture
- Fetal transverse lie
- Placenta previa
- Vasa previa
- Invasive Cx Ca
- Active genital herpes

- Previous classical or inverted T uterine incision
- 2 or more CS (they have to do CS they are contraindicated to vaginal).

PREREQUISITES:

- assess the following
- Indication / any contraindications
- GA
- Cx favourability (Bishop score) (if score >6 then its ok, if less than it might not be successful)
- Pelvis, fetal size & presentation
- Membranes status
- Fetal heart rate monitoring prior to IOL
- Elective inductions

Cervix (Cx) ripening prior to IOL

Indication ➡ if the Bishop score is ≤ 6

- The state of the Cx is an important predictor of successful IOL

Methods :

1. Intracervical PGE2 gel ➡0.5 mg/6hrs----3 doses
2. Intravaginal PGE2 gel ➡1-2 mg/6hrs----3doses
   - PGE2 gel ⬇ the rate of not being delivered in 24 hrs
   - ⬇ the use of oxytocin for augmentation of labor
   - PGE2 gel ⬆ the rate of uterine hyperstimulation
3. Misoprostol ➡ Should not be used for term fetuses
4. Mechanical methods:

   ➢ Foley Catheter:

   - It is introduced into the cervical canal past the internal os, the bulb is inflated with 30-60 cc of water
   - It is left for up to 24 hrs or until it falls out
   - Contraindications ➡Low laying placenta, antepartum Hg, ROM, or cervicitis
   - No difference in operative delivery rate, or maternal or neonatal morbidity compared to PG gel.

   ➢ Hydroscopic dilators (Eg.Laminaria tents): Higher rate of infections.

Induction Of Labor

1-Oxytocin with Amniotomy:

- IV, mix it with saline, Half life 5-12 min. (titrate it SLOWLY increasing the dose until we reach 3 contractions/10minute then maintain the dose).
- A steady state uterine response occurs in 30 min or >
- Fetal heart rate & uterine contractions must be monitored.
- If there is hyperstimulation or nonreassuring fetal heart rate pattern ➡ D/C infusion (ie: decelerate it or even stop it).
- Women who receive oxytocin were more likely to be delivered in 12-24 hrs than those who had amniotomy alone & less likely to have operative delivery.

So: do amniotomy if not that effective give oxytocin.

2-PGE2 (most commonly used)**:**

- For women with favorable Cx ➡ PGE2 ⬇ the rate of operative delivery & failed IOL when compared to Oxytocin
- PGE2 ➡ ⬆ GIT side-effects like nausea, pyrexia & uterine hyperactivity (specially the local because she might have the labor & the drug hasn't melted completely, so be careful with women with previous CS or high parity).

3-Sweeping of the membranes: (mcq) ★

- Vaginally the examining finger is placed through the os of the Cx & swept around to separate the membranes from the lower uterine segment
  ➡ ⬆ local PGF2 α production & release from decidua & membranes ➡ onset of labor
- ⬆ the rate of delivery in 2-7 days
- ⬇ the rate of post-term
- ⬇ the use of formal induction methods
- If there is urgent indication for IOL sweeping is not the method of choice

specific circumstances or indications:

Prelabor SROM at term:

- 6-19%
- IOL with oxytocin ➡⬇ risk of maternal infections (chorioamnionitis& endometritis) & neonatal infections
- PG also ➡⬇maternal infections & neonatal NICU admissions

IOL after CS:

- PG should not be used as it can result in rupture uterus
- Oxytocin or foley catheter may be used