



Induction of labour

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INDUCTION OF LABOUR


DEFINITION OF IOL



IOL means initiation of uterine contraction (after the period of viability)by any method(medical ,surgical or combined)for the purpose of vaginal delivery.

----D.C DUTTA

DEFINITION OF AUGMENTATION OF LABOUR



It is a process of stimulation of uterine contraction (both in frequency and intensity) that are already present but found to be inadequate.


D.C.DUTTA

PURPOSES OF INDUCTION OF IOL



Risk of
continuation of pregnancy
either to the mother or
fetus is more.

INDICATIONS FOR IOL

- 
- Hypertensive disorders of pregnancy
 - Maternal medical complications-DM ,chronic renal disease , cholestatis of pregnancy
 - Post maturity
 - Abruptio placentae
 - IUGR
 - Rh –isoimmunization
 - Premature rupture of membrane
 - Fetus with congenital anomaly
 - IUD
 - Polyhydraminos and oligohydraminos
 - Unstable lie after correction into longitudinal lie.


CONTRAINDICATIONS OF IOL



- **Contracted pelvis and CPD**
- **Malpresentation (breech , transverse or oblique lie)**
- **Previous classical caesarean section or hysterotomy**
- **Uteroplacental factors : unexplained , vaginal bleeding , vasa praevia, placenta praevia.**
- **High risk pregnancy with fetal compromise**
- **Active genital herpes infection**
- **Heart disease**
- **Pelvic tumour**
- **Elderly primigravidae with obstetric or medical complications**
- **Umbilical cord prolapsed**
- **Cervical carcinoma.**

PARAMETERS TO ASSESS PRIOR TO IOL

MATERNAL

- 
- To confirm the indication for IOL
 - Exclude the contraindication of IOL
 - Assess Bishop score (>6 , favourable)
 - Perform clinical Pelvimetry to assess pelvic adequacy
 - Adequate counselling about the risks, benefits and alternatives of IOL with the women and the family members

CONT..

FETAL

- To ensure fetal gestational age
- To estimate fetal weight (clinical and USG)
- Ensure fetal lung maturation status
- Ensure fetal presentation and lie
- Confirm fetal well- being



FACTORS FOR SUCCESSFUL IOL



- **Period of gestation-** term or post term
- **Pre- induction score-** Bishop score >6 is favourable .
- **Cervical ripening** – favourable in parous women and in case with PROM
- **Sensitivity to uterus-** positive oxytocin sensitivity test is favourable to IOL.
- **Presence of fibronectin in vaginal swab ($> 50\text{ng/ml}$)** - favourable for successful IOL
- **Other positive factors** –maternal height $>5'$ inches, normal BMI, EFW <3 kgs.

CERVICAL RIPENING

Series of complex biochemical changes in the cervix which is mediated by the hormones. Ultimately the cervix become soft and pliable.



METHODS OF CERVICAL RIPENING

PHARMACOLOGICAL METHODS

- 
- Prostaglandins-Dinoprostone ,
Misoprostol
 - Oxytocin
 - Progesterone receptor antagonist-
Mifepristone
 - Relaxin
 - Hyaluronic acid
 - Estrogen

Cont..



NON PHAMOCOLOGICAL METHODS

- Stripping of membrane
- Amniotomy(ARM)
- Mechanical dilators, osmotic dilators
- Transcervical balloon catheter
- Extra- aminotic saline infusion

BISHOP'S PREINDUCTION CERVICAL SCORING SYTEM(MODIFIED)

PARAMETERS	SCORE			
	0	1	2	3
CERVIX DILATATION	CLOSED	1-2	3-4	5+
EFFACEMENT %	0-30	40-50	60-70	≥80
CONSISTENCY	FIRM	MEDIUM	SOFT	-
POSITION	POSTERIOR	MIDLINE	ANTERIOR	-
HEAD-STATION	-3	-2	-1,0	+1,+2
CERVICAL LENGTH	>4	2-4	1-2	<1

CONT..

TOTAL SCORE=13

Favorable score=6-13

Unfavorable score=0-5



METHODS OF IOL

- 
- ❖ Mechanical
 - ❖ Medical
 - ❖ Surgical
 - ❖ Combined

MECHANICAL INDUCTION



- Effective
- Low cost
- Low risk of tachysystole
- Disadvantage-infection

DRUGS USED FOR MEDICAL INDUCTION



- Prostaglandins(PGE2,PG E1)
- Oxytocin
- Mifepristone

PROSTOGLANDLINS(PGE2)



- It act locally on the contiguous cells and both causes the myometrial contraction .
- Intracervical application of Dinoprostone (PGE2-0.5mg) gel is the gold standard for cervical ripening.
- It may be repeated after 6 hours for 3 – 4 doses if required.
- The women should be in bed 30 min following application and is monitored for uterine activity and fetal heart rate .

MISOPROSTOL(PGE1)



- **ROUTE-** Transvaginally or orally
- **DOSE-** 25µg vaginally every 4 hours is found either superior or similarly effective to that of **PGE2** for cervical ripening and labour induction. Maximum doses is 6-8
- **SIDE EFFECTS**-tachysystole ,meconium passage ,fetal heart rate irregularities and uterine rupture
- **Contraindicated** –previous LSCS

OXYTOCIN



- **ACTION** : Uterine activity (CONTRACTION), Produce cervical dilation and effect delivery (WHEN RIPEN)
- Oxytocin is effective for IOL when cervix is ripe.

Cont..



- **DOSE- 0.5 -2.5 mu/min**
- Initiated at the dosage of 1 mu/min, with increases of 1 or 2 mU/minute every 20–30 minutes until a maximum administration rate of 16–32 mU/minute is reached or adequate uterine activity is present

MEFEPRISTONE



- It blocks both progesterone and glucocorticoid receptor .
- RU 486,200mg vaginally daily for 2 days has been found to ripen the cervix and to induce labour.
- Onapristone is a more selective progesterone receptor antagonist.

SURGICAL INDUCTION

METHODS

1. Artificial rupture of membrane

- Low rupture of membrane
- High rupture of membrane(rare)

2. Stripping of membrane




ARTIFICIAL RUPTURE OF MEMBRANE

- **INDICATION :**

- Abruptio placenta
- Chronic hydramnios
- Severe pre-eclampsia/eclampsia
- To place scalp electrode for electronic fetal monitoring.



ARM

- 
- **CONTRAINDICATIONS:**
 - IUFD
 - Maternal AIDS
 - Genital active Herpes Infection

PROCEDURE OF ARM



Preliminaries : empty the bladder .

The procedure can be done in labour room or in OT if the risk of cord prolapsed is high

Actual steps

1. Position the patient in lithotomy position
2. Full surgical asepsis to be maintained
3. Two fingers are introduced into the vagina smeared with antiseptic ointment
4. The index finger is passed through the cervical canal beyond the internal os

AMNIOHOOK



KOCHER'S FORCEPS



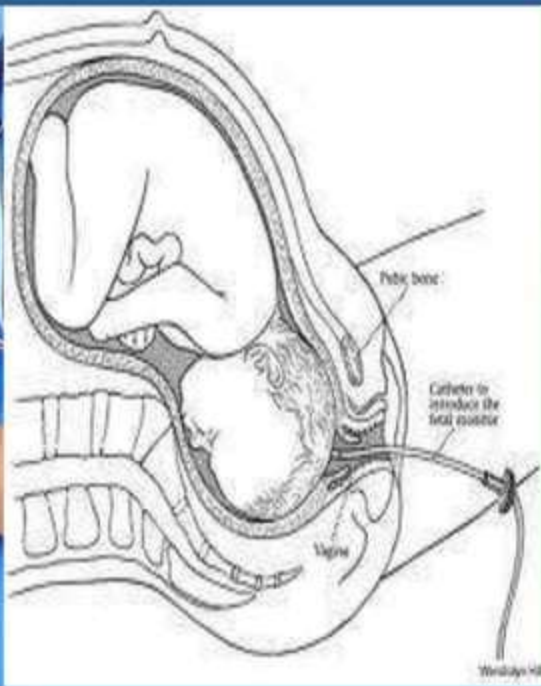
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5. The membranes are swept free from the lower segment as far as reached by the fingers
6. With one or two fingers still in the cervical canal with the palmer surface upwards , a long kocher's forceps with the blades closed or an amnion hook is introduced along the palmer aspect of the fingers up to the membranes
7. The blades are opened to seize the membranes and are torn by twisting movements
8. Amnihook is used to scratch over the membranes . This is followed by visible escape of amniotic fluid .

TIMINGS

- ARM---to be done in morning hrs when pt is empty stomach---risk of cord prolapse---immediate LSCS may be taken.
- Precautions-----
 - Timing---- when Cx is dilated >3cm.
 - colour of amniotic fluid for meconium staining.
 - Application of scalp electrodes for fetal heart monitoring.
 - Syntocinon drip started after 12 hrs/earlier .
 - watch for any bleeding in cases of APH ., bleeding increases or decreases.



ARM

- Advantages:
 - Increases frequency and intensity of uterine contractions
 - Release of prostaglandins
 - Facilitates descent of presenting part
 - Allows for internal monitoring
 - Ability to assess amniotic fluid
- Disadvantages:
 - Increased risk for infection
 - Possibility of prolapsed umbilical cord



HAZARDS OF ARM

AMNIOTIC FLUID
EMBOLISM



Amnionitis

www.emmasaying.com

COMBINED METHOD



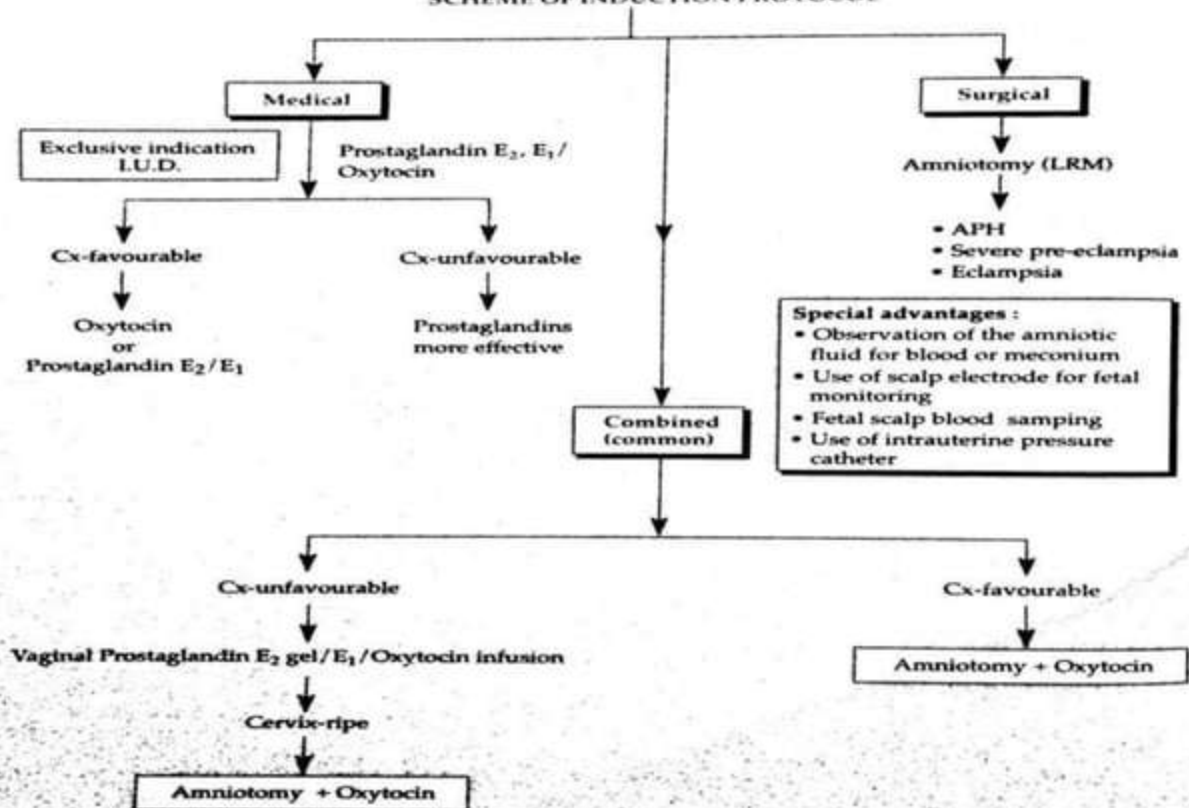
ADVANTAGES OF COMBINED METHOD



- ❑ More effective than any single procedure
- ❑ Shortens the induction-delivery interval thereby minimizes the risk of infections and lessens the period of observation

SCHEME OF IOL

SCHEME OF INDUCTION PROTOCOL





THANK YOU