Induction of Labour
-Transcervical Catheter-

SCOPE (Area): Maternity
SCOPE (Staff): Medical and Midwifery

BACKGROUND/RATIONALE

The use of transcervical catheters for cervical ripening prior to induction of labour (IOL) has been shown to be efficient, safe, cost effective and is associated with a low incidence of uterine contractile abnormalities compared to prostaglandins. The value of mechanical methods of inducing labour in women with an unfavourable cervix is inconclusive, but is an option for cervical ripening when there are contraindications to pharmacological agents, especially for those women attempting a vaginal birth after a caesarean (VBAC). Mechanical procedures such as balloon catheters should not be used routinely for induction of labour.

The fluid filled catheter balloon(s) provide local endocervical pressure that stimulates the release of prostaglandins. This in turn, softens and effaces the cervix, making it favourable for IOL. A 16 gauge Foley catheter or a Cervical Ripening Balloon Catheter (previously Atad catheter) may be considered.

DESIRED OUTCOME/OBJECTIVE

- To use a transcervical catheter to promote cervical ripening (softening and effacement) and to stimulate myometrial contractions where delivery is indicated but not urgent. This increases the likelihood of a spontaneous vaginal birth.

DEFINITIONS

Induction of labour (IOL): is an intervention designed to artificially initiate cervical ripening and uterine contractions resulting in progressive effacement and dilation of the cervix and birth of the baby

Cervical ripening- process of IOL employed when the cervix is unfavourable; in order to facilitate cervical dilatation as labour is established.

Bishop Score: is a measure of cervical suitability for IOL. A favourable Bishop score is >7.

<table>
<thead>
<tr>
<th>Score</th>
<th>Dilation</th>
<th>Effacement</th>
<th>Station</th>
<th>Position</th>
<th>Consistency</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>closed</td>
<td>0-30%</td>
<td>-3</td>
<td>Posterior</td>
<td>Firm</td>
</tr>
<tr>
<td>1</td>
<td>1-2 cm</td>
<td>40-50%</td>
<td>-2</td>
<td>Mid-position</td>
<td>Moderately firm</td>
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<tr>
<td>2</td>
<td>3-4 cm</td>
<td>60-70%</td>
<td>-1,0</td>
<td>Anterior</td>
<td>Soft</td>
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<tr>
<td>3</td>
<td>5+</td>
<td>80+%</td>
<td>+1,+2</td>
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INDICATIONS

See CPG/I037 Induction of Labour

CONTRAINDICATIONS

The following are contraindications to IOL with transcervical catheter:

- Membranes are ruptured and exogenous prostaglandin is in current use
- Malpresentation (transverse or oblique lie, footling breech, brow)
- Previous classical uterine incision or previous caesarean section of unknown type
- Cord presentation
- Abnormal fetal surveillance (e.g. CTG) requiring immediate delivery
- Placenta praevia or vasa praevia
- Active genital herpes
- Cervical carcinoma
- Or any other contraindication to labour or vaginal birth

The following require lead obstetrician discussion:

- Frank breech
- Previous caesarean section
- Severe intrauterine growth restriction
- Cardiotocographic non-reassuring fetal status

ISSUES TO CONSIDER

- A recent randomised trial found that ripening an unfavourable cervix in primiparous women with a Foley catheter with a balloon inflated with 80ml rather than 30ml, provided a more effective dilatation, faster labour, and a decreased need for oxytocins. This did not apply to the multiparous women and using the larger balloon may increase the risk for cord prolapse in this group.

- Risks of this method of induction include infection, placental abruption, uterine rupture (very unlikely), rupture of membranes, device entanglement, maternal discomfort, failed dilatation, cervical laceration and bleeding.

INSERTION OF FOLEY CATHETER

EQUIPMENT

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
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<tbody>
<tr>
<td>Large bi-valve speculum</td>
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<tr>
<td>Sponge forceps</td>
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<tr>
<td>50ml sterile water</td>
<td></td>
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<td>16 gauge Foley catheter</td>
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<td>Syringe 10ml or 20ml</td>
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<tr>
<td>Lubricating gel</td>
<td></td>
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<td>Tape</td>
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</table>
PROCEDURE

1. Informed consent must be obtained from the woman and documented in the medical record.

2. Initial assessment must include a reassuring CTG and vaginal examination must reveal that the Bishop Score is 6 or less.

3. The woman is transferred to a bed with stirrups, placed in lithotomy position and a good light source must be used.

4. Cleanse the vulvo-vaginal area.

5. Insert the speculum and visualise the cervix.

6. Pass the Foley catheter through the internal os of the cervix using the sponge forceps to assist.

7. Inflate the balloon with 50ml sterile water.

8. Spigot the catheter.

9. Gently withdraw the catheter until it rests at the level of the internal os.

10. Tape the catheter to the inner aspect of the woman's thigh.

11. On completion of the procedure assess maternal observations, fetal heart rate and obtain CTG to assess maternal and fetal wellbeing.

INSERTION OF CERVICAL RIPENING BALLOON

EQUIPMENT

- Large bi-valve speculum
- Sponge forceps
- Aqueous chlorhexidine
- Cervical Ripening Balloon
- 200ml normal saline
- 20ml Luer-lock syringe

PROCEDURE

1. Informed consent must be obtained from the woman and documented in the medical record.

2. Initial assessment must include a reassuring CTG and vaginal examination must reveal that the Bishop Score is 6 or less.

3. Cleanse the vulvo-vaginal area.

4. Insert the speculum and visualise the cervix.

5. Pass the cervical ripening balloon through the cervix using the sponge forceps and advance until both balloons have entered the cervical canal.

6. Inflate the uterine balloon with 40ml of normal saline using a 20ml Luer-lock syringe through the red Check-Flo valve marked "U".

7. Once the uterine balloon is inflated, gently pull the device back until the uterine balloon is against the internal os.
8. The vaginal balloon is now visible outside the external cervical os. Inflate the vaginal balloon with 20ml normal saline using a standard 20ml Luer-lock syringe through the green Check-Flo valve marked "V.

9. Once the balloons are situated on each side of the cervix and the device has been fixed in place, remove the bivalve speculum.

10. Add more fluid to each balloon in turn, in 20ml increments until each balloon contains 80ml (maximum) of fluid (**NOTE: Do not overinflate the balloons**).

11. Tape the catheter to the inner aspect of the woman's thigh.

12. On completion of the procedure assess maternal observations, fetal heart rate and obtain CTG to assess maternal and fetal wellbeing.

### MANAGEMENT AFTER INSERTION

**Management for both catheters is as follows:**

1. The procedure must be performed in labour ward.

2. If the woman has an **uncomplicated** pregnancy she is considered safe for transfer to an inpatient bed 1 hour after catheter insertion if both maternal and fetal observations are normal.

3. A vaginal examination is done at **12 and 18** hours post foley catheter insertion, to ensure that the catheter balloon is not sitting in the vagina. The catheter may remain in situ for **18-24** hours before medical review for removal, ARM or for the use of Prostaglandin E2 (PGE2) Vaginal Gel (Prostin). It is recommended that the cervical ripening balloon be removed after **15** hours.

4. If at any time the membranes rupture, the woman is transferred to Labour Ward for assessment and review.

5. If the catheter falls out prior to **12** hours post insertion a vaginal examination should be performed. If the cervix is still unfavourable, medical staff must review re further management of use of Prostaglandin E2 (PGE2) Vaginal Gel (Prostin).

**Observations include:**

- 4 hourly fetal heart rate and movements- commence a CTG if any fetal heart rate abnormalities are detected.
- 4 hourly uterine activity, vaginal loss, pulse and blood pressure.
- Assess and record any systemic effects (e.g. nausea, vomiting).

**Indications for catheter removal include:**

- Ruptured membranes
- Uterine hyperstimulation or uterine tachystole
- Abnormal CTG requiring urgent delivery
- Urinary retention- remove some or all fluid from the balloon(s)
- Maximum recommended time reached

**Method of removal:**

- Deflate device balloon(s) and remove catheter gently.
RELATED DOCUMENTS

Internal

- CPH/I037 Induction of labour
- CPG/I038 Induction of labour with Prostaglandin E2 (PGE2) Vaginal Gel (Prostin)
- CPG/S001 Oxytocin (Syntocinon) – Induction and Augmentation of Labour
- PRO/S001 Oxytocin (Syntocinon) Infusion
- CPG/U005 Uterine Hyperstimulation (Tachysystole) – Management of
- PRO/T005 Tocolysis – Preterm Labour and Inhibition of Established Labour

REFERENCES


