Procedure

Trial of Labour (TOL) - Intrapartum Management

1. Purpose

According to the Consultative Council on Obstetric and Paediatric Mortality and Morbidity[1] in Victoria the caesarean section rate has been steadily increasing in public hospitals state-wide from 21% in 2000 to 30.6% in 2008.

The most common indications for caesarean section are previous caesarean section, dystocia, malpresentation and non-reassuring fetal status[2].

Trial of labour (TOL) should be considered as an option for all women who present for prenatal care with a history of previous caesarean birth. Where contraindications exist a repeat caesarean section will be advised, but in the majority of cases successful vaginal birth can be achieved safely for both mother and baby[2].

The success rate of trial of labour at The Women's is around 60-65%. Predictors of successful TOL include:

- Non-recurring indication of caesarean section (e.g. malpresentation)[2]
- Pregnancy induced hypertension[2]
- Previous vaginal birth[2]
- Onset of labour is spontaneous.

It is essential women make an informed choice regarding whether to attempt a vaginal birth or whether to plan another caesarean section. Therefore, these guidelines recommend that obstetricians and women discuss the risks and benefits of TOL (reinforced by the provision of appropriate literature) to plan the birth.

Contraindications to TOL

The following conditions are highlighted as being associated with an increased risk of uterine rupture or unsuccessful TOL:

- Previous classical or vertical lower uterine segment incision
- More than one previous caesarean section
- Less than 18 months since the previous caesarean section
- BMI >40
- Fetal weight > 4 kg.

2. Definitions

Trial of labour: a planned attempt to birth vaginally in a woman who has had a previous caesarean section[3]

Diagnosis of labour is the single most important issue in the management of labour; when the diagnosis is wrong, all subsequent measures and interventions are likely to be wrong as well.

The transition from full effacement to dilatation, in the presence of painful contractions is definitive, physical proof that labour has begun.

Diagnosis of labour should be made by explicit, clinical assessment and clearly documented.

Clinical evidence of the onset of labour includes:

- Basic prerequisite: painful contractions at intervals of less than 10 minutes
- Highly suggestive: spontaneous, bloody show or rupture of membranes
- Objective proof: full effacement of the cervix.

NOTE: *In a woman who has not previously laboured, the cervix must be fully effaced before dilatation can progress beyond 4cm. Therefore, effacement is a key determinant for diagnosis of labour. In women who have laboured before, effacement and dilatation occurs simultaneously[4].*

No previous labour	Has previously laboured
Painful, regular contractions Cervix is fully effaced	Painful, regular contractions In the presence of effacement, cervical dilatation is 3+cm

Latent phase of labour: from the start of uterine contractions until progressive cervical dilatation.
Women who are having uterine activity or have spontaneous rupture of membranes and a planned TOL, but who have not yet had labour diagnosed may be cared for on either the Birth Centre or the ward with an agreed plan of management. This plan should contain an agreed timeframe for further assessment and decision making. For example, should labour not establish within six hours of admission, consult with the woman and medical staff regarding a management plan.

Note: women with spontaneous rupture of membranes and regular, painful uterine contractions should be cared for on the Birth Centre as this combination indicates that labour has begun.

3. Responsibilities

Midwifery and obstetric medical staff.

4. Procedure

4.1 On admission

- Inform Senior Registrar /Consultant and midwife in charge on admission to Birth Centre of all women who have a uterine scar
- The senior registrar must refer to The Women's Next Birth after Caesarean Decision Aid (appendix 1) to review and revise the management plan prepared antenatally in consultation with the woman
- Notify anaesthetist and theatre of any patient for planned TOL in Birth Centre in labour
- IV access with 16G cannula from onset of labour.
- Blood to be taken for:
  - Group and save
  - Haemaglobin
  - Analgesia prescribed on request- epidural is not contraindicated in TOL[3].

Electronic fetal monitoring (EFM)

Refer to The Women's guideline CTG Interpretation and Response

A uterine scar is an indication for continuous electronic fetal surveillance in labour.

Continuous fetal monitoring using telemetry is an option available to women if they wish to ambulate during labour.

It is reasonable for women to have short breaks from electronic fetal monitoring in the following circumstances:

- If the electronic fetal heart rate monitoring has been and is considered normal
- The interruption is for a short period only i.e. 15 minutes
- If the number of interruptions is infrequent
- If the interruption does not occur immediately after any intervention that might be expected to alter the fetal heart rate
- This arrangement has been discussed prior to labour and documented in the antenatal notes.

Several TOL studies have reported that in over 70 % of cases of uterine rupture, the first signs or symptoms presented as prolonged fetal bradycardia. Of these cases, only 8 % presented with pain and 3 % with bleeding.

4.2 First Stage

- Prostaglandins (Prostin E2 Gel) is contraindicated
- Oxytocin administration is not contraindicated for induction of labour in women undergoing a TOL. However this decision must be taken in consultation with the Birth Centre Consultant[3]
- Consideration should be given to the use of an intrauterine pressure catheter to monitor contraction strength and guide oxytocin dosage
- *Augmentation* with oxytocin is not recommended.

The available evidence suggests that the use of oxytocin is associated with a 1% increased risk of rupture/dehiscence [3,5,6]. Oxytocin may be used with caution in women with a previous caesarean section, following discussion with the obstetric consultant on-call for Birth Centre.

Progress and recognition of delay:

- Trial of labour mandates vigilant assessment of progress of labour with vaginal examinations at least 3 hourly in the active phase of labour and more frequently as full dilatation approaches[3]

  Note: vaginal assessments ideally to be conducted by a Level 4 registrar or above. The responsibility lies with the registrar to notify the consultant of findings at each assessment.
- The cervix should dilate at least 1cm per hour in the active phase of labour[3] *(from diagnosis of labour)*
- Any delay in either the latent or active phase of labour or significant fetal heart rate abnormalities should be discussed immediately with the midwife in charge, obstetric senior registrar and/or consultant on-call for Birth Centre. Recommendations on how to progress should be discussed with the woman and a plan for care and further assessment documented[3]
- In suspected uterine dehiscence activate a Code Green[2].

Signs and symptoms of uterine rupture[3]

- Abnormalities in the fetal heart trace, such as variable or late decelerations, prolonged fetal bradycardia, warrant immediate review by senior registrar or consultant. These abnormalities may be the first signs of scar rupture/dehiscence.

Be vigilant for the symptoms and signs of scar rupture, which may include[3]

- Abnormal fetal heart rate or CTG
- Abnormal vaginal bleeding or frank haematuria
- Suprapubic tenderness and/or severe constant abdominal pain which continues between contractions
- Maternal tachycardia, hypotension or shock
- Chest pain or shoulder tip pain, sudden onset shortness of breath
- No progress/inadequate progress in labour
- In-coordinate uterine action in active labour or cessation of contractions
- Changes of the uterine shape
- Loss of station of the presenting part (disengagement of presenting part)
- If pain does develop an atypical pattern, particularly with unusual radiation (such as to the shoulder tips), or pain previously controlled by analgesia (epidural or otherwise) which becomes more severe, then complete clinical reassessment is required by a Senior Registrar or Consultant.

4.3 Second Stage

- Notify consultant when patient assessed / considered to be fully dilated
- Duration should not exceed 2 hours: 1 hour to allow for passive descent, but no more than 1 hour of active pushing (or 30 minutes if the woman has had a prior vaginal birth)[3]
- The option of any mid-cavity assisted vaginal birth **must** be discussed with the consultant
- No mid-cavity assisted delivery to be performed without the consultant being present, and then to be performed in the operating theatre.

4.4 Third Stage

- Active management. Refer to guideline: Third Stage Management
- Exploration of the uterus to detect dehisced scar after a vaginal birth is not advisable as it may increase the risk of puerperal infections and may cause iatrogenic perforation. However, excessive vaginal bleeding, abdominal pain or unexplained maternal collapse at the birth, will require prompt assessment and the need to repair the dehiscence or rupture if this occurred[3].

5. Evaluation, monitoring and reporting of compliance to this procedure

To be developed.

6. References

1. The Consultative Council on Obstetric and Paediatric Mortality and Morbidity, Hospital Profile of Perinatal Data, Royal Women's Hospital (2008).
2. Society of Obstetricians and Gynaecologists of Canada (SOGC) Clinical Practice Guidelines No 155 (2005): Guidelines for Vaginal BirtInserth After Previous Caesarean Birth *International Journal of Gynaecologists and Obstetricians 89 319-331.*
3. The Royal Australian and New Zealand College of Obstetricians and Gynaecologists Statement: C-Obs 38 (2013) Planned Vaginal Birth after Caesarean (Trial of Labour) Avail at http://www.ranzcog.edu.au.
4. Llewellyn-Jones D (1999*) Fundamentals of Obstetrics & Gynaecology* Mosby, London.
5. The Royal Australian and New Zealand College of Obstetricians and Gynaecologists Clinical Guidelines: Intrapartum Fetal Surveillance (2014).
6. Sentilhes L et al (2013) delivery for women with a previous caesarean: Guidelines for clinical practice from the Freach College of Gynaecologists and Obstetricians (CNGOF) *European Journal of Obstetrics, Gynaecology and Reproductive Biology 170 25-32.*

7. Legislation/Regulations related to this procedure

Not applicable.

8. Appendices

Appendix 1 - Next Birth after Caesarean: Decision Aid

Refer to the Women's procedure: Next Birth After Caesarean Section: Antenatal Management

If prelabour ROM, management as per appropriate procedure Rupture of Membranes: Premature at Term.

Next Birth after Caesarean: Decision Aid

Next Birth after Caesarean: Decision Aid

Use this sheet to assist with decision making, ensure consistent and accurate information is imparted and documentation of same.
A copy of this form should be printed out and given to the woman at time of discussion.
The completed document should be filed in the woman's medical record.

		Date and Initials
Contraindications to TOL • Two or more caesareans • Previous classical, inverted T or J incision • Previous uterine rupture • Myomectomy that breached the uterine cavity • Medical or obstetric reason for repeat C/S	Considered and excluded	
Review previous intrapartum progress and caesarean operative notes. Determine indication for CS. • Breech/fetal compromise (76% success) • Poor progress/ CPD (50-60% success) • Failed instrumental birth (14% success rate)	Considered and discussed	
Discuss with the woman: **Maternal risks and benefits of TOL** • Risks: 05% of scar rupture, 24-28% chance of emergency C/S, 10-15% chance of instrumental delivery and/or perineal trauma, 1.7% risk of blood transfusion, 2.9% risk of endometritis. • Benefits of TOL: 72-76% chance of successful VBAC, shorter hospital stay, increased likelihood that future pregnancies may be delivered vaginally, more likely to have immediate skin-to-skin contact at birth which has been shown to increase the rate of those still breastfeeding at 3 months.	Considered and discussed	
Maternal risks and benefits of elective C/S • Risks: 0.1-0.2% serious surgical complications, increased risk of placenta previa/accreta, longer hospital stay will require repeat C/S. • Benefits: Plan to known delivery date, lower risk of blood transfusion (1%) and endometritis (1.8%), zero risk of uterine rupture, no risk of vaginal tears, can be surgically sterilized at the same time.	Considered and discussed	
Perinatal risks and benefits of TOL • Risks: 0.1% risk of antepartum stillbirth beyond 39 weeks (10 per 10 000), 0.04% risk of delivery-related perinatal death, 0.08% risk of HIE during labour. • Benefits: 1% risk of transient respiratory morbidity	Considered and discussed	
Perinatal risks and benefits of emergency C/S • Risks: 1-3% transient respiratory morbidity (6% if delivered at 38 weeks), need for antenatal corticosteroids if elective C/S before 39 weeks. • Benefits: Avoid prospective risk of antepartum stillbirth, avoid risk of delivery-related perinatal death or HIE.	Considered and discussed	
Risks of emergency C/S after failed TOL • Increased risks of uterine rupture (2.3 vs 0.11%), uterine dehiscence (2.1 vs 0.15%), hysterectomy (0.5 vs 0.15%), transfusion (3.2 vs 1.2%), endometritis (7.7 vs 1.2%).	Considered and discussed	
Future fertility • One previous C/S has a four-fold increased risk for placenta previa. • The risk for placenta accreta increases with every subsequent C/S: 0.24, 0.31, 0.57, 2.13, 6.74%. • The risk of hysterectomy also increases with every subsequent C/S: 0.65, 0.42, 0.90, 2.41, 3.49, 8.99%.	Considered and discussed	
Induction and augmentation • Should only be considered with consultant involvement as the risk of uterine rupture is increased • Consider use of an intrauterine pressure catheter during labour if IOL/augmentation is undertaken	Considered and discussed	
	Form completed by: name and designation	