THIRD STAGE MANAGEMENT FOLLOWING VAGINAL BIRTH

This LOP is developed to guide clinical practice at the Royal Hospital for Women. Individual patient circumstances may mean that practice diverges from this LOP.

1. AIM

- Complete delivery of placenta and membranes
- Prevention of postpartum haemorrhage (PPH)

2. PATIENT

- Woman in the third stage of labour following vaginal birth

3. STAFF

- Medical and midwifery staff

4. EQUIPMENT

- Needle
- Syringe
- Abdominal sponges
- Suturing equipment
- 16-gauge intravenous (IV) cannula
- Indwelling urinary catheter (IDC)/bedpan

5. CLINICAL PRACTICE

- Discuss with woman antenatally/intrapartum and recommend active management of third stage of labour
- Obtain verbal consent for active management of third stage if woman agrees
- Perform risk stratification for woman antenatally, intrapartum and postpartum and define woman as low risk or high risk for postpartum haemorrhage (PPH) according to Appendix 1. Document in medical record

Active management of third stage:

- Draw up 10 international units (IU) of oxytocin at the bedside when birth is imminent
- Check dose of oxytocin with either a registered midwife or medical officer
- Administer 10 IU of oxytocin intramuscularly (IM) after the birth of the anterior shoulder (as per standing orders)
- Observe for signs of placental separation
- Guard the uterus by placing a hand suprapubically and apply steady cord traction until placenta is visible at the introitus then support delivery of placenta and membranes. Do not apply increased traction to cord if resistance is felt
- Discuss ongoing management with the obstetric registrar if the placenta and membranes have not been delivered within 15 minutes, or if the blood loss is ≥500mL (as per RHW Retained Placenta – Management local operating procedure (LOP)). If in homebirth environment, contact birth unit to advise and organise ambulance for transfer to hospital
- Recommend the following steps if placenta not delivered within 30 minutes (define it as a retained placenta):
  - insert IDC
  - insert large bore IV cannula e.g. 16-gauge, and send blood for group and hold (G+H) and full blood count (FBC)
  - administer oxytocin infusion (40 IU oxytocin in 1000 millilitres(mLs) of Normal Saline (sodium chloride 0.9%) and run at 250 mLs/hour)
  - reassess for signs of separation of placenta prior to transfer to theatre
  - aim for manual removal of the placenta (MROP) within the next 60 minutes (90 minutes from birth). The amount of blood loss will determine the speed of the removal
  - consider performing MROP in the Birth Unit if an epidural is in-situ and effective, after notification of anaesthetic registrar

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For woman at high risk of Postpartum Haemorrhage (See Appendix 1):

- Recommend additional active management of third stage:
  - EITHER ergometrine (if no contraindications), 250 micrograms IM or IV **after** expulsion of the placenta
  - AND/OR oxytocin infusion (40 IU oxytocin in 1000 mLs of Normal Saline (sodium chloride 0.9%) and run at 250 mLs/hour)
- Recommend in labour:
  - Large bore IV cannula e.g. 16-gauge
  - G+H
  - FBC

Physiological management of third stage:

- Advise woman that risk of PPH is twice as likely if active management of third stage declined
- Await spontaneous delivery of the placenta and membranes following birth
- Do not pull on the cord or apply fundal pressure/massage, however, maternal effort may be appropriate
- Encourage woman to adopt upright position, to breastfeed neonate and to empty her bladder
- Advise woman that there is no evidence of benefit or harm of delayed cord clamping in the term neonate. If woman requests, delay clamping and cutting of the umbilical cord until the cord stops pulsating or when the placenta and membranes have been delivered
- Recommend administration of 10 IU of oxytocin IM if the placenta and membranes have not been delivered within 30 minutes, or if the blood loss is ≥500mL. Inform the obstetric registrar of same. If in homebirth environment, contact birth unit to advise and organise ambulance for transfer to hospital
- Plan ongoing management:
  - In hospital setting:
    - request obstetric registrar review woman if the placenta and membranes have not been delivered within 15 minutes of giving oxytocin or if the total blood loss ≥500mL
    - commence management for retained placenta as per RHW Retained Placenta – Management LOP
  - In homebirth setting:
    - transfer to hospital by ambulance if placenta not delivered within 15 minutes of giving oxytocin or it total blood loss ≥500mL
    - commence management for retained placenta as per RHW Retained Placenta – Management LOP prior to transfer to hospital (IV, IDC, 40 IU oxytocin infusion)

For Every Woman:

- Measure and document blood loss as accurately as possible
- Follow PPH LOP if blood loss is ≥500mL
- Palpate uterus at completion of third stage to ensure it is contracted and express clots where necessary
- Check the perineum, vagina and vulva for vaginal bleeding and tears, immediately following the delivery of the placenta and arrange repair if required as soon as possible
- Perform assessment of blood loss and the uterine fundus every 15 minutes (or more frequently if clinical situation indicates) ensuring fundus is firm and central. Assess heart rate and blood pressure every 30 minutes for two hours after birth (or more frequently if clinical situation indicates)
- Ensure woman who is at high risk of PPH is handed over to appropriate staff when moves from Birthing Services to theatre and/or postnatal ward
- Encourage breastfeeding and offer assistance as required

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6. DOCUMENTATION

- Medical record

7. EDUCATIONAL NOTES

- Management of the third stage should be discussed in the antenatal period with the woman so she can make an informed decision prior to labour[4]
- When compared to physiological third stage, active management of the third stage has been proven to reduce severe PPH in high-risk women >1000ml by 70%, and is the most effective way of preventing PPH. For low-risk women, there is less evidence that active management of the third stage is of benefit in preventing severe PPH[3]
- Timing of cord clamping is not likely to have a major effect on blood loss[3]
- Omission of controlled cord traction in active management of third stage has little effect on the risk of severe haemorrhage, however, increases the duration of the third stage of labour on average from 6-12 minutes, and may lead to an increase in the rate of manual removal of placenta[2]
- Oxytocin is the drug of choice for management of third stage with the advantage of rapid onset and lower risk of side effects. It does not increase the risk of retained placenta or lengthen the duration of the third stage[4]
- Syntometrine® (ergometrine maleate and oxytocin) is associated with a small but statistically significant reduction in PPH where blood loss is < 1000mLs[4]. This advantage needs to be weighed against the adverse effects of nausea, vomiting, hypertension, headache, dizziness, abdominal pain, cardiac arrhythmias, and chest pains. Syntometrine®, one ampule IM (ergometrine 500 mcg and oxytocin 5 units) could be given (if no contraindications) after expulsion of the placenta, or with anterior shoulder or birth of the baby, instead of oxytocin 10 units[4]
- Ergometrine and Syntometrine® are associated with vomiting, and antiemetics should be considered
- Contraindications for ergometrine include:
  - ergot alkaloid hypersensitivity
  - retained placenta
  - eclampsia
  - pre-eclampsia
  - severe or persistent sepsis
  - peripheral vascular disease
  - heart disease
  - hypertension, including a history of hypertension
  - impaired hepatic or renal function.
- Precautions for ergometrine include:
  - calcium deficiency
  - coronary artery disease
  - porphyria
  - venoatrial shunts
  - mitral valve stenosis
  - IV administration (especially rapid or undiluted)
- In the 2013 Cochrane systematic review "Effect of timing of umbilical cord clamping of term infants on maternal and neonatal outcomes" those with delayed clamping had improved iron status through early infancy but were more likely to receive phototherapy[5]. Phototherapy may require admission to Special Care Nursery and separation of mother and baby. There is insufficient evidence to support or refute a recommendation for delayed cord clamping [5,7]
- When performing delayed cord clamping the aim should be to hold the neonate at a level below the vulva and then place the baby on the mother's abdomen

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- In the 2013 Cochrane review of term babies there were no significant differences between early versus late cord clamping groups for the primary maternal outcome of severe postpartum haemorrhage (risk ratio (RR) 1.04, 95%confidence interval (CI) 0.65 to 1.65; five trials with data for 2066 women with a late clamping event rate (LCER) of ~3.5%, I2 0%) or for postpartum haemorrhage of 500 mL or more (RR 1.17 95% CI 0.94 to 1.44; five trials, 2260 women with a LCER of ~12%, I2 0%)[5]
- The updated Cochrane Review "Effect of timing of umbilical cord clamping and other strategies to influence placental transfusion at preterm birth on maternal and infant"[8], delaying cord clamping was associated with fewer infants requiring transfusions for anaemia, less intraventricular haemorrhage and lower risk for necrotising enterocolitis compared with immediate clamping[8]. The concerns this review makes in its summary is the small total number of infants < 30weeks gestation, the wide confidence intervals, and the unclear risk of bias in the studies to date. There is also no long-term follow-up of the infants. The recommendation is that further larger trials need to be conducted. There are limited data on the hazards or benefits of delayed cord clamping in the non-vigorous infant[8].

8. RELATED POLICIES / PROCEDURES / CLINICAL PRACTICE LOP

- Retained Placenta - Management
- Postpartum Haemorrhage - Prevention and Management
- First Stage of Labour Care - Recognition of normal progress and management of delay
- Second Stage of Labour Care- Recognition of normal progress and management of delay
- Perineal/Genital Tract Repair
- Labelling of Injectable Medicines Fluids and Lines
- NSW Health Policy Directive. Maternity - Prevention, Detection, Escalation and Management of Postpartum Haemorrhage (PPH) 2017. GL2017_018

9. RISK RATING

- Medium

10. NATIONAL STANDARD

- Medication Safety – standard 4
- Comprehensive Care – standard 5
- Recognising and Responding to Clinical deterioration – standard 8

11. REFERENCES

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4 RCOG 2016. Prevention and Management of Postpartum Haemorrhage. Green-Top Guideline No. 52 https://www.rcog.org.uk/en/guidelines-research-services/guidelines/gtg52/

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8 Rabe H, Diaz-Rossello JL, Duley L, Dowswell T. Effect of timing of umbilical cord clamping and other strategies to influence placental transfusion at preterm birth on maternal and infant outcomes. *Cochrane Database of Systematic Reviews* 2019, Issue 9. Art. No.: CD003248. DOI: 10.1002/14651858.CD003248.pub4

9 Catling-Paull C, Coddington RL, Foureur MJ, Homer SE. Publicly funded homebirth in Australia: a review of maternal and neonatal outcomes over 6 year. The Medical Journal of Australia. 2013; 198 (11): 616-620

10 NICE 2020 Care of third stage of Labour. National Institute for Health and Care Excellence Pathway https://pathways.nice.org.uk/pathways/intrapartum-care/care-in-third-stage-of-labour

REVISION & APPROVAL HISTORY

Reviewed and endorsed Maternity Services LOPs group 1/6/21
Approved Quality & Patient Safety Committee 19/12/13
Endorsed Obstetrics LOPs 3/12/13
Reviewed October 2013
Approved Quality & Patient Safety Committee December 2012
Reviewed and endorsed Maternity Services LOPs group October 2012 (title : Third Stage Management following vaginal birth)
Approved Clinical Performance & Quality Committee 19/3/07
Maternity Services Clinical Committee 13/3/07 (title: Third Stage Management Guideline)

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Appendix 1

High Risk of Postpartum Haemorrhage

Etiologic category and process	**Clinical risk factors**
Tone: abnormalities of uterine contraction	
Over-distension of uterus	Polyhydramnios Multiple gestation Macrosomia
Uterine muscle exhaustion	Rapid labour Prolonged labour Grand multiparity Oxytocin use
Intra-amniotic infection	Fever Prolonged rupture of membranes
Functional/anatomic distortion of uterus	Fibroids Placenta praevia Uterine anomalies
Uterine-relaxing medications	Halogenated anaesthetics Nitro-glycerine
Bladder distension	Which may prevent uterine contraction
Tissue: retained	
Retained products of conception • Abnormal placentation • Retained cotyledon or succenturiate lobe	Incomplete placenta at delivery Previous uterine surgery High parity Abnormal placenta seen on ultrasonography
Retained blood clots	Atonic uterus
Trauma:	
Lacerations of the cervix, vagina, or perineum	Precipitous delivery Operative delivery
Extensions, lacerations at caesarean section	Malposition Deep engagement
Uterine rupture	Previous uterine surgery High parity
Uterine inversion	Fundal placenta Excessive cord traction
Thrombin: abnormalities of coagulation	
Pre-existing states: • Haemophilia A • Von Willebrand's disease • History of previous PPH	History of hereditary coagulopathies or liver disease
Acquired in pregnancy: • Idiopathic thrombocytopenic purpura • Thrombocytopenia with preeclampsia • Disseminated intravascular coagulation	Bruising
Therapeutic anticoagulation	History of thrombotic disease
Gestational hypertensive disorder of pregnancy (e.g. pre-eclampsia)	Elevated blood pressure
With adverse conditions: • Dead fetus in utero • Severe infection • Abruption • Amniotic fluid embolus	 Fetal demise Fever, neutrophilia/neutropenia Antepartum haemorrhage Sudden collapse

* RCOG 2016. Prevention and Management of Postpartum Haemorrhage. Green-Top Guideline No. 52