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Guideline for the Management of Uterine Rupture

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CHANGE HISTORY

Version	Date	Author Job Title	Reasoning
2	June2024	Sarah Morris PDM	Review

AUTHORSHIP, RESPONSIBILITY AND REVIEW

Author	Sarah Morris	Ratification Date	June 2024
Job Title	Practice Development Midwife	Review Date	June 2027

To be read in conjunction with:	<ul style="list-style-type: none">All Wales Maternity & Neonatal Network Guidelines. Prevention and Management of Postpartum Haemorrhage wisdom.nhs.wales/all-wales-guidelines/all-wales-guidelines/all-wales-prevention-of-postpartum-haemorrhage-2-8-2021-pdf/CTM Guideline Birth After Caesarean Section wisdom.nhs.wales/health-board-guidelines/cwm-taf-maternity-file/birth-after-caesarean-section-ctm-guideline-2020-pdf/CTM Guideline Induction of Labour Arrest of Labour https://wisdom.nhs.wales/health-board-guidelines/cwm-taf-file/induction-of-labour-including-arrest-of-labour-ctm-guideline-2020-pdf/
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Disclaimer

When using this document please ensure that the version is the most up to date by checking the
Obstetrics & Gynaecology Guidelines on WISDOM
PRINTED DOCUMENTS MUST NOT BE RELIED ON

Guidelines Definition

Clinical guidelines are systemically developed statements that assist clinicians and patients in making decisions about appropriate treatments for specific conditions.

They allow deviation from a prescribed pathway according to the individual circumstances and where reasons can be clearly demonstrated and documented.

Minor Amendments

If a minor change is required to the document, which does not require a full review please identify the change below and update the version number.

Type of change	Why change made	Page number	Date of change	Version 1 to 1.1	Name of responsible person

Equality Impact Assessment Statement

This Procedure has been subject to a full equality assessment and no impact has been identified.

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Definition

Uterine rupture is defined as disruption of the uterine muscle extending to, and involving, the uterine serosa or disruption of the uterine muscle with extension to the bladder or broad ligament. It is associated with bleeding, fetal compromise and expulsion of the fetus or placenta into the abdominal cavity. It differs from uterine dehiscence where there is disruption of the uterine muscle (either partial or complete), but the uterine serosa remains intact.

Most cases of uterine rupture occur intrapartum following previous caesarean birth or other intra-cavity uterine surgery, such as myomectomy. A uterine scar rupture is a rare, but potentially serious complication, for both the mother and/or the baby that requires immediate surgical intervention.

Incidence

The risk of scar rupture after one caesarean birth is one in 200 women with spontaneous labour (0.5%). However, this increases two- to three-fold with induction or augmentation of labour. Uterine rupture is rare with an unscarred uterus, affecting 2 per 10,000 individuals; these are usually multiparous women in labour. A previous uterine rupture has a greater than 5% risk of recurrence.

MBRRACE have highlighted that there was failure to identify the clinical features of uterine rupture in four out of five women affected, leading to delays in care. Studies have shown an increasing rate of uterine rupture, which is felt to be due to rising caesarean rates, increasing inductions or augmentation and potentially a higher clinical awareness leading to greater identification.

It is a rare event resulting in significant morbidity mortality to both mother and baby. Identification of risk factors, recognition of the signs of rupture and prompt action can reduce maternal and neonatal morbidity and mortality. The risk of uterine scar rupture has been estimated at around 0.5% and the death of a baby has occurred in 10% of all ruptures.

Women who are at greater risk of uterine rupture should have their Ante natal care managed by an experienced obstetrician. Plans for mode of birth, induction of labour, and care during labour should be clearly documented. The Royal College of Obstetricians and Gynaecologists (RCOG) Green Top Guideline for Birth after previous Caesarean Birth makes recommendations for antenatal counselling.

Risk Factors

None of these risk factors contraindicate attempting VBAC but require further consideration and discussion with the woman (and her partner) to ensure that an informed choice can be made. Currently, national guidance does not recommend routine third trimester ultrasound assessment to inform decision-making.

Related to previous caesarean	+ Unscarred uterus
Short inter-delivery interval (less than 12 months)	Grand multiparity
Post-dates pregnancy	Induction or augmentation of labour
Fetal macrosomia	Hyperstimulation
Maternal age >40 years	Malpresentation
Raised maternal BMI	Obstructed labour
Lower prelabour Bishop score	Uterine abnormalities
Decreased lower segment myometrial thickness on ultrasound assessment	Trauma

Signs and symptoms

Several signs of impending rupture have been identified, but do not necessarily occur with every uterine rupture. Signs of a partial or complete uterine rupture that may or may not be present are as follows.

Antepartum and Intrapartum Monitoring	
Maternal Observations	Maternal tachycardia should not be misinterpreted caution and awareness of this sign is needed for uterine rupture and not mistaken alone for intrapartum pain or infection. Hypotensive / low blood pressure alongside tachycardia is a sign of shock. Clinical signs of shock maybe due to concealed haemorrhage. Measurement should be recorded and closely monitored on MEOWS chart to ensure early identification.
Abdominal +/- or scar pain	Sharp pain between contractions Unusual abdominal pain or tenderness Sudden onset of pain at the site of the previous scar
Abnormal CTG	Most commonly bradycardia (slow heart rate). It is important to note that with a uterine rupture, labour sometimes

	continues, there is no loss of uterine tone or amplitude of contraction.
Vaginal bleeding	Vaginal bleeding may occur but is not a cardinal symptom, as it may be modest despite major intraabdominal haemorrhage.
Loss of station of the fetal presenting part	Recession of the fetal head (baby's head moving back up into the birth canal) Bulging under the pubic bone (baby's head has protruded outside of the uterine scar) Haematuria if the rupture extends into the bladder. Inability to pick up fetal heart rate at the old transducer site.
Cessation of previously efficient uterine activity	
Blood-stained liquor	

During labour, woman should be counselled and encouraged to report any acute scar tenderness or severe abdominal pain, especially if it persists between contractions. The most common presentation is an abnormal CTG. It is important to note that with a uterine rupture, labour sometimes continues, there is no loss of uterine tone or amplitude of contractions.

Postpartum Monitoring	
Occult uterine rupture	Can occur during birth and is characterized by pain and persistent vaginal bleeding despite use of uterotonic agents.
Haematuria	May occur if the rupture extends into the bladder.

Complications for mother and baby

Maternal	Perinatal
<ul style="list-style-type: none">• Mortality• Hysterectomy• Obstetric haemorrhage – antenatal and postpartum haemorrhage• ITU admission• Damage to other organs, for example bladder rupture• Longer hospital stay	<ul style="list-style-type: none">• Perinatal mortality• Perinatal morbidity, including hypoxic ischaemia encephalopathy, permanent neurological injury, neonatal acidosis and low Apgars

Prevention

A uterine rupture cannot be accurately predicted or diagnosed before it actually occurs. It can occur suddenly during labour or birth. Women should be advised to avoid becoming pregnant within 18-24 months of having a caesarean section.

Intrapartum care for 'Birth after caesarean' guideline should be used with the following management:

- Mechanical methods for induction of labour - avoid prostaglandins
- Cautious use of oxytocin
- Obstetric unit - ability for immediate recourse to caesarean if required
- One to one care - hourly observations and four hourly vaginal examinations
- Continuous electronic fetal monitoring in labour when regular contractions commence
- Intravenous access in labour
- Up to date full blood count and group and save

All women who do not progress during the first stage of labour should be reviewed by a senior obstetrician and a management plan clearly documented in the case notes. When slow progress is diagnosed an oxytocin infusion should be administered as detailed in the 'induction of labour' guideline. Oxytocin should not be administered to women who have had a previous LSCS unless specific instructions have been documented by a senior obstetrician.

Management of uterine rupture

The longer it takes to diagnose and respond to a uterine rupture the more likely it is that the baby and/or the placenta can be pushed through the uterine wall and into the mother's abdominal cavity putting women at increased risk for haemorrhage and babies at increased risk for neurological complications and very rarely, death. With access to a rapid caesarean, fetal death

from a uterine rupture is an extremely rare event. Therefore, **early recognition and prompt action are paramount.**

Action if uterine rupture is suspected:
Stop the oxytocin infusion that may be running
Emergency buzzer and call the obstetric team 2222 obstetric emergency bleep
Early escalation to consultants if not present.
Immediate resuscitation
Put the woman in to the left lateral position and give facial oxygen
Use the 'PROMPT Uterine Rupture Algorithm' (Appendix One)
Site two large bore (16g) cannulas and take blood for full blood count, coagulation screen, ROTEM if clinically indicated and cross match 4 units.
Commence an infusion with warmed colloids or blood as required
Continuously record maternal temperature, pulse and blood pressure and cardiotocograph for assessment of fetal well-being.
Prepare for theatre for CATEGORY 1 caesarean birth. Birth should take place within 30 minutes of decision or as soon as possible depending on clinical condition of mother and baby. Consider that neonatal condition may be potentially optimised if the baby is born within 18 minutes from suspected uterine rupture. Anticipate major obstetric haemorrhage- use All Wales Prevention and Management of Postpartum Haemorrhage guideline.
Anticipate a compromised baby. Call for an experienced paediatrician to attend the birth. Neonatal condition may be potentially optimised if baby is born within 18 minutes from suspected uterine rupture.
Anaesthesia Management
The choice between regional or general anaesthetic should be jointly made between the senior anaesthetic and obstetric teams based on safety, operative urgency and maternal condition, and with the inclusion of the woman where possible.
If an exploratory laparotomy is required, then a general anaesthetic may be the preferred option, because of the potential for increased operating times, major obstetric haemorrhage and challenging intraoperative pain management.
Epidural and spinal anaesthesia are generally contraindicated in patients with a severe bleeding diathesis because of the risk of epidural or spinal hematoma.
Obstetric Management
The obstetrician may consider midline laparotomy for improved surgical access if fetal body parts can be felt through the abdominal wall.

Uterine repair preferred but if extensive defect consider hysterectomy - if the defect is large or extends into the broad ligament with associated haemorrhage, then hysterectomy is more likely. It is important that the obstetric consultant is involved in the decision-making and is present in obstetric theatres.

Ensure systematic review of the pelvis including the broad ligament and bladder which may have been damaged.

Antibiotics and uterotonics should be given in line with local guidance – All Wales Prevention and Management of Postpartum Haemorrhage guideline.

Anticipate major obstetric haemorrhage due to trauma and tone and communication is vital and clear within the maternity team. Use cell salvage from the onset of the case for effective blood conservation.

Post Operative and Postnatal Care

Uterine rupture can be associated with complex surgery, prolonged recovery, and will require close monitoring in a critical care setting on labour ward or in an intensive care setting.

Best principles of postnatal care should apply, including:

- Aiming to keep mother and baby together
- Thromboprophylaxis
- Post-operative analgesia
- Catheter – monitor urine output for fluid balance and haematuria
- Documentation
- Debrief woman/parents
- Clinical incident reporting form

Documentation

- Records should be kept in accordance with the CTUHB ‘Standards for Record keeping’ Guideline.
- Completion of the ‘PROMPT Uterine Rupture Documentation Checklist’ (Appendix Two).
- Completion of the ‘Obs Cymru Four stage Postpartum Haemorrhage Management Checklist’.
- A plan of care for the immediate post-natal period should be documented by the operating obstetrician.
- A Datix incident form should be completed.

Debriefing

- An opportunity should be given for the woman and family to see a senior obstetrician prior to discharge home.

- If uterus is still in situ advice regarding future mode of delivery should be given and documented.
- The woman and her partner should be given an opportunity to have a further consultation after discharge from hospital.

References

RCOG Green top guideline. Birth After Previous Caesarean Birth. (2015)

Manoharan, M., Wuntakal, R. & Erskine, K. Uterine rupture: a revisit. *Obstetrician Gynaecol* 12, 223–230 (2010)

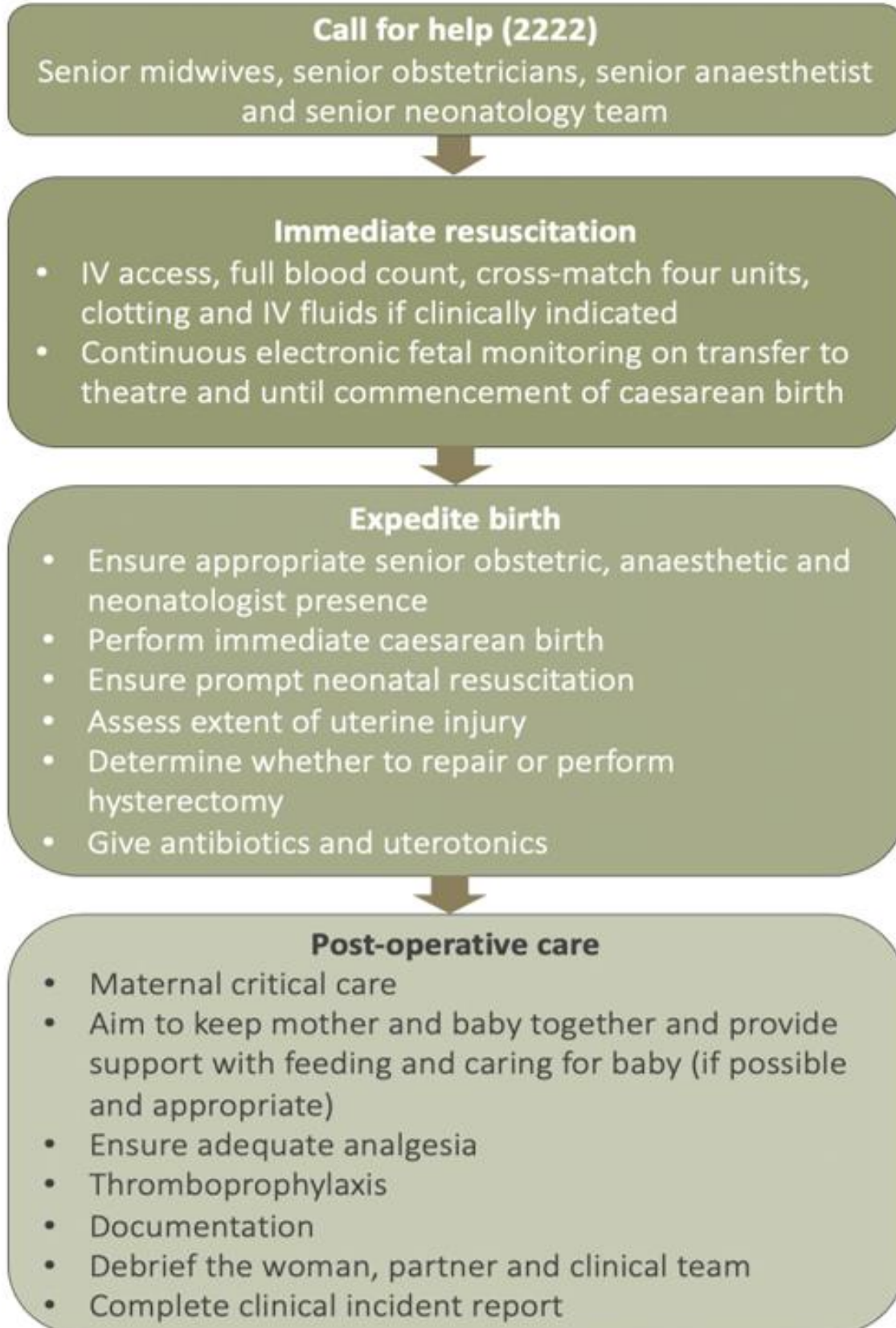
MBRRACE. Perinatal Confidential Enquiry: term, singleton, intrapartum stillbirth and intrapartum-related neonatal death. (2017)

NICE (2021) Caesarean Birth. Clinical Guideline NG 192 . London: NICE

PROMPT Maternity Foundation Annual Update Bristol (2022)

UKOSS: Rupture uterus (2012)

Appendix One – PROMPT Uterine Rupture Algorithm



Appendix Two - PROMPT Uterine Rupture Documentation Checklist

Uterine rupture – Documentation Checklist (P2)

Date:

Patient Name:
 DOB:
 Unit number:



IMMEDIATE POST EVENT PLAN		DOCUMENT DETAILS		
		Location/ level of care e.g. Critical care on CDS/ITU	<input type="checkbox"/>	<input type="checkbox"/>
Frequency of Observations		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Frequency of blood tests (FBC/U&E 6 hours post PPH unless otherwise stated)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Frequency of fluid input/output measurement		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Thromboprophylaxis plan		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Medication review		All medication prescribed		<input type="checkbox"/>
		Avoid 'NSAIDs' until review		<input type="checkbox"/>
Debrief and document in notes		Debrief with woman and birth partner		<input type="checkbox"/>
		Team debrief		<input type="checkbox"/>
		Incident report required? (Y/N)	<input type="checkbox"/>	Y / N
Stand down major obstetric haemorrhage (inform team including blood bank) <i>if applicable</i>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Any other management considerations in notes below:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PLAN AGREED BY: OBSTETRICIAN ANAESTHETIST MIDWIVES		NOTES		

Appendix Three - Annual auditable standards

The following standards will formulate the annual record keeping audit plan:-

- 1. Documentation of the event and completion of the uterine rupture proforma**
- 2. Family debrief following birth**
- 3. DATIX incident reporting**
- 4. Completion of Obs Cymru Four stage Management of PPH documentation**
- 5. Staff attendance at annual PROMPT Wales training**
- 6. Staff attendance at skill and drills within the labour ward setting**