

Uterine Rupture Guideline	
Summary statement: How does the document support patient care?	By providing evidence based guidance with regard to diagnosis and management of uterine rupture
Staff/stakeholders involved in development:	Obstetric Anaesthetists, Obstetric Consultants and Senior Midwifery Staff
Division:	Women and Children's
Department:	Maternity
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For use by:	All staff involved in the management of uterine rupture
Purpose:	To provide evidence-based guidance in the recognition and management of uterine rupture
This document supports:	RCOG 2015 Green top guideline 45 NICE 2007
Key related documents:	UH Sussex (WH & SRH) Maternity Guidelines: Vaginal Birth After Caesarean, Care of Women in Labour , Fetal Surveillance, Caesarean Section , Postpartum Haemorrhage Recognition and management of the severely ill woman (including HDU/ITU care)
Approved by:	Joint Obstetric Guideline Group (JOGG)
Approval date:	18 th January 2023 Date uploaded: 25 th January 2023
Ratified by Board of Directors/ Committee of the Board of Directors	Not Applicable- Divisional Ratification only required
Ratification Date:	Not Applicable- Divisional Ratification only required
Expiry Date:	January 2026
Review date:	July 2025
If you require this document in another format such as Braille, large print, audio or another language please contact the Trusts Communications Team	
Reference Number:	CG1151

Version	Date	Author	Status	Comment
1.0	June 2011	R. Mason	Archived	New Trust Wide Guideline
1.1	June 2014	JOGG	Archived	3 year review-no changes
2.0	July 2017	N Maguire	Archived	3 yearly review – minor amendments
3.0	January 2020	M. Lugein	Archived	3 yearly review – minor amendments
4.0	January 2023	B. Middleton, Obstetric Consultant	LIVE	3 year review. Risk factors reordered, new table on managing uterine rupture added. Incidence section updated.

**The interpretation and application of clinical guidelines will remain the responsibility of the individual clinician.
If in doubt contact a senior colleague or expert.**

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Uterine Rupture Guideline

1.0 Aim

To provide guidance on the diagnosis and management of uterine rupture during pregnancy and labour.

2.0 Scope

The objectives of this guideline are:

- To support staff in the diagnosis and management of uterine rupture.
- To ensure the safety of patients and optimal outcome for women/people and babies.

3.0 Responsibilities

Midwives and obstetricians:

- To access, read, understand and follow this guidance.
- To use their professional judgement in the application of this guideline.

Management:

- To ensure the guideline is reviewed as required in line with the Trust and National recommendations.
- To ensure the guideline is accessible to all relevant staff.

4.0 Abbreviations used within this guideline

VBAC - Vaginal Birth After Caesarean Section	CCU - Critical Care Unit
MEOWS - Maternal Early Obstetric Warning System	ERCS - Elective Repeat Caesarean Section
FBC - Full Blood Count	G&S - Group and Save
Us&Es - Urea and Electrolytes	

5.0 Introduction

5.1 Definition

Uterine rupture is a rare, but potentially catastrophic, obstetric emergency. It is associated with a high rate of maternal/birthing parent and fetal morbidity such as haemorrhagic shock, need for peripartum hysterectomy, hypoxic ischaemic encephalopathy permanent brain damage and even death, mainly due to substantial maternal/birthing parent haemorrhage.

Uterine rupture is defined as a full thickness separation of the uterus leading to significant haemorrhage and/or fetal distress, and/or extrusion of fetal parts and intra-amniotic contents into the peritoneal cavity requiring surgical repair.

By contrast, incomplete rupture or uterine scar dehiscence is where a surgical scar breaks down but the visceral peritoneum remains intact, defined as a disruption of the uterine muscle with intact serosa. It is usually asymptomatic, although labour may slow down. It may only be found in retrospect at caesarean birth.

5.2 Incidence

Uterine rupture is a rare event, occurring in just 2 per 10 000 pregnancies. However, when it does occur it frequently results in life threatening maternal/birthing parent and/or fetal compromise. In a UK study, 87% of uterine ruptures occurred in women/people who had a uterine scar, with just 13% occurring in women/people with an unscarred uterus.

The incidence among women/people who have had a previous caesarean birth and plan to have a normal birth is 21 per 10,000 pregnancies, which is higher than in those who elect for another caesarean birth, where the incidence is 3 per 10,000 births.

The risk increases with the number of caesarean births; with two previous caesarean births carrying a three to five-fold increase in risk compared to one previous caesarean birth. Uterine rupture in an unscarred uterus is mainly confined to multiparous women/people in labour. However, uterine rupture can occur without any predisposing factors.

The rate of uterine rupture causing maternal death in the UK is 1.4 per million maternities. The true incidence of incomplete rupture is unknown.

5.3 Prognosis

- 4.2% maternal/birthing parent mortality
- 46% perinatal mortality and morbidity

6.0 Risk factors for uterine rupture

Uterine rupture in an unscarred uterus is extremely rare (0.5 – 2 per 10000) and mainly occurs in multiparous women/people in labour.

The most **common risk factor** in the developed world is **previous caesarean birth**. The incidence of uterine rupture rises to 5 in 1000 in the presence of a uterine scar following previous caesarean birth. The incidence is 3 per 10000 (0.2%) in elective repeat caesarean birth ERCS.

The classical vertical caesarean incision and inverted T or J incisions confer a much higher risk of future uterine rupture than the more common transverse lower segment approach.

This risk is further increased in women/people who have never given birth vaginally and in those whose labour is induced with prostaglandins when attempting vaginal birth after caesarean birth (VBAC). Induction of labour either with oxytocin or prostaglandins is an independent risk factor. Cervical ripening with trans-cervical Foleys catheters is not associated with increased risk of uterine rupture.

Rates of uterine rupture differ according to whether VBAC labour is spontaneous (0.15 – 0.4%), induced (0.54 – 1.4%) or augmented (0.9 – 1.91%).

The risk of uterine rupture increases if women/people with a uterine scar also have the following factors:

- Short inter-delivery interval (< 12 months)
- Post-dates pregnancy
- Maternal/birthing parent age over 40
- Obesity
- Low pre-labour Bishop score
- Macrosomia
- Multiple pregnancy
- Polyhydramnios

The perinatal mortality is ten times greater than the maternal/birthing parent mortality.

6.1 Risks during pregnancy

- Previous classical caesarean birth
- Previous hysterotomy (very rare)
- Previous hysteroscopic metroplasty
- Placenta accreta
- Mullerian anomalies of uterus
- Previous difficult curettage for miscarriage

Rare causes described in primigravida women/people:

- Ehler-Danlos syndrome
- Chronic steroid use
- Use of cocaine

6.2 Risks during labour

- Previous caesarean birth
- Previous myomectomy
- Grand multiparity
- Mal-presentation: unrecognised brow, face and shoulder presentation
- Unrecognised cephalopelvic disproportion
- Obstructed labour

- Prostaglandin and oxytocin augmentation in women/people with high parity and previous caesarean birth
- Use of high doses of misoprostol in parous women/people
- Instrumental birth (injudicious use of Kielland forceps)
- Assisted breech deliveries, external cephalic version, internal podalic version
- Manoeuvres to relieve shoulder dystocia
- Precipitate labour

Rare causes:

- Tumour obstructing the birth canal
- Pelvic deformity

6.3 Risks post-birth

- Manual removal of placenta
- Uterine manipulation (intrauterine balloon)
- Placenta accreta

6.4 Traumatic or spontaneous risk factors

- Blunt or direct trauma e.g. motor vehicle accident

6.5 Spontaneous

- Previous uterine rupture
- Previous uterine or cervical surgery (e.g. caesarean sbirth, cornual ectopic pregnancy, manual removal of placenta, previous iatrogenic uterine perforation)
- Grand multiparity
- Unrecognised obstructed labour
- Hypertonic uterine contractions
- Congenital uterine anomalies (e.g. undeveloped uterine horn)
- Placenta accreta spectrum
- Multiple pregnancy
- Mal-presentation (brow or face)
- Macrosomia and fetal anomaly (e.g. hydrocephalus)

7.0 Management of women/people with a previous uterine scar

Birth plans should be discussed antenatally by a senior registrar or consultant and documented clearly in the notes. This will facilitate best practice in antenatal counselling, shared decision making and documentation. (Please refer to [CG1152 Birth After Caesarean Section \(BAC\) Guideline](#)).

In women/people with complicated uterine scars, caution should be exercised and decisions should be made on a case-by-case basis by a senior obstetrician with access to the details of previous surgery.

Women/people should be advised that planned VBAC should be conducted in a suitably staffed and equipped delivery suite with continuous intrapartum care and monitoring with resources available for immediate caesarean birth and advanced neonatal resuscitation.

7.1 Intrapartum care

IV cannula sited in established labour or at the discretion of the senior midwife / registrar on call and blood sent for FBC, G&S and U&E's.

Women/people should be advised to have continuous electronic fetal monitoring for the duration of planned VBAC, commencing at the onset of regular uterine contractions.

Staff caring for these women/people should be vigilant for the signs and symptoms of uterine rupture. Uterine rupture can occur before the woman is considered to be in established labour, and a high index of suspicion is required, especially if the woman/person requires analgesia.

Note: In all cases of surgical delivery, especially where there are risk factors for uterine rupture, a thorough examination of uterus and birth canal is required.

8.0 Signs and symptoms of uterine rupture

Warning signs and symptoms are inconsistent; vigilance by staff and early detection are vital to ensure best possible outcomes.

8.1 Prior to rupture

Women/people may exhibit restlessness, constant pain in the lower part of the uterus.

- Contractions may become longer, stronger and more frequent in an effort to overcome the obstruction, this can eventually lead to tonic contractions and the uterus becoming continuously hard.
- There may be poor progress in labour (i.e. less than 0.5 cm per hour).
- The mother/birthing parent is often in significant, continuous pain and may complain of scar pain or tenderness.
- Maternal/birthing parent pyrexia, tachycardia, vomiting +/- signs of dehydration may occur.
- The uterus may appear closely moulded around the fetus.
- The presentation usually remains high.
- The fetus may show signs of severe compromise.

These signs are poor indicators and rupture can occur suddenly and without warning.

8.2 Following rupture

Women/people may describe a sudden feeling of something giving way with complete cessation of uterine activity.

- An abnormal CTG (e.g. tachycardia, variable or late decelerations or bradycardia) is the most consistent finding in uterine rupture (present in 55-87% of these events) with bradycardia being the most common fetal heart rate abnormalities.
- Severe tearing abdominal pain and tenderness, persisting between contractions.
- Breakthrough persistent pain with an apparently functional epidural block.
- Acute onset of scar tenderness or crepitus over the lower uterine segment.
- Fresh vaginal bleeding, blood stained liquor or haematuria (because the bladder is often adherent to a previous uterine scar).
- Signs of maternal/birthing parent shock: tachycardia, hypotension, fainting.
- Sudden onset of dyspnoea, chest pain or shoulder tip pain.
- Intrauterine fetal death.
- Cessation of labour / contractions.
- Loss of station of the presenting part.
- Change in the abdominal contour and inability to pick up fetal heart rate at the old transducer site.
- In some cases the fetus may be palpable outside the uterus.

Note: epidural analgesia is not thought to mask the pain/tenderness of uterine rupture as abdominal pain alone is not a reliable indicator. However if a sudden increase in analgesia requirements is noted then close observation for other signs of rupture is needed.

9.0 Management of suspected uterine rupture

This is an obstetric emergency. It is imperative that surgical delivery is achieved quickly as response time is critical to outcome. Early diagnosis of uterine dehiscence or rupture followed by expeditious laparotomy and neonatal resuscitation are essential to reduce associated morbidity and mortality.

It is important to note that scar dehiscence may be asymptomatic in up to 48% of women/people, and the classic triad of complete uterine rupture (pain, vaginal bleeding, and FHR abnormalities) may be present in less than 10% of cases.

The best results are attained where surgical delivery is achieved as soon as diagnosis is made.

Once the emergency has been declared and the emergency call **2222** is made, staff should follow [CG1148 Recognition and management of severely ill pregnant woman/person](#) guideline.

Give a brief explanation to the woman/person and their partner and obtain consent for emergency LSCS including that surgery may involve the need for hysterectomy.

Category 1 caesarean birth should be performed by an experienced obstetrician, while the consultant is on their way if not already present. As this is a rare obstetric emergency, a second consultant presence is recommended. Ensure that accurate notes are made contemporaneously with timings recorded.

A Datix form must be completed if uterine rupture is confirmed.

Communication:	Clinical actions:
<ul style="list-style-type: none"> • Call for help – Activate emergency buzzer. • Put out an emergency 2222 plus contact the on-call consultant via switchboard. • Liaise with haematologist regarding blood products – it may be necessary to initiate the major haemorrhage protocol. • Alert theatre staff to prepare for laparotomy. • Inform paediatrician and the neonatal team. 	<ul style="list-style-type: none"> • Check Airway, Breathing and Circulation (ABC) and maternal/birthing parent observations and level of consciousness. • Administer oxygen via face mask at 15L per minute. • Commence/maintain continuous electronic fetal monitoring. • If the labour is being augmented – turn off the oxytocin. • Gain IV access for FBC, G&S, U&E's and coagulation screen. • Commence IV infusion of a crystalloid solution. Infuse rapidly to attempt to maintain circulatory volume until blood available. • Nurse the woman/person in left lateral. • Perform catheterisation. • Transfer to theatre as soon as possible where management will be dependent upon individual findings at the time. (Repair will be performed by a consultant obstetrician or supervised registrar).

9.1 Surgery

- Have cell salvage available where possible.
- Deliver the uterus through the wound and examine for lacerations. An assistant can hold the uterus up from behind and occlude the uterine vessels manually to diminish uterine vascularity and improve visibility.
- When future child bearing important and risks acceptable, rupture repair can be attempted.
- Repair lacerations and ligate bleeding points.
- Use several layer closure of uterus and any lacerations.

- Inspect carefully for other visceral damage (esp. bladder, broad ligaments and fallopian tubes).
- Consider the use of interventional radiology if appropriate.
- Early recourse to hysterectomy: risk of hysterectomy is 3.4/10000 women/people choosing VBAC and 4 – 13% following uterine rupture in women/people with a previous caesarean birth.
- Give antibiotic cover.
- If there is suspicion of uterine rupture after successful vaginal birth, laparotomy may be required to assess damage and control bleeding.

9.2 Post birth

- Manage the woman/person in the Recovery or Critical Care Unit (CCU) initially with careful monitoring of clinical state using modified early obstetric warning score (MEOWS).
- Check full blood count postnatally and consider need for transfusion/iron therapy.
- Discuss events and management with woman/person and their family and debrief staff.
- Involve neonatal unit staff and chaplaincy as appropriate.
- Complete Incident Report form via Datix.

Women/people who have had a previous uterine rupture should be advised to have future elective caesarean births.

10.0 Monitoring/audit uterine rupture

Incidence of uterine rupture are reviewed and audited (including presence of obstetric consultant) via Datix reporting.

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