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## Guideline for the Management of Uterine Rupture

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**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
New Guideline for CTMUHB	Amalgamation of POW into CTMUHB	All	07.12.2019	1	Intrapartum Guideline Committee

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## 1. Introduction - Uterine Rupture

### Definition

Uterine rupture is full-thickness loss of integrity of the uterine wall and visceral peritoneum.

It differs from uterine scar dehiscence which does not involve the visceral peritoneum and the placenta and fetus remains in the uterine cavity.

Most cases of uterine rupture occur during labour following previous caesarean section or other uterine surgery, such as myomectomy.

The risk of scar rupture after one caesarean section is one in 200 women with spontaneous births; however, this increases two- to three-fold with induction and augmentation of labour.

Uterine rupture is rare with an unscarred uterus, affecting 0.5–2.0 per 10 000 births;

It is a rare but a life threatening event. Identification of risk factors, recognition of the signs of rupture and prompt action can reduce maternal and neonatal morbidity and mortality.

Women who are at greater risk of uterine rupture should have their antenatal care managed by an experienced obstetrician. Plans for mode of delivery, induction of labour, and care during labour should be clearly documented

## 2. Risk Factors

- High parity,
- Previous uterine surgery that breached the cavity
- Induction or augmentation of labour
- Hyperstimulation
- Malpresentation

- Macrosomia
- Uterine abnormalities
- Trauma including road traffic accident and obstetric manoeuvres
- Previous uterine rupture
- Previous fundal or high vertical hysterectomy

Uterine ruptures have also been known to occur in some women who have never had a caesarean section. This type of rupture can be caused by weak uterine muscles after several pregnancies, excessive use of labour inducing agents, a prior surgical procedure on the uterus, or mid-pelvic use of forceps.

### 3. Signs and symptoms

Several signs of impending rupture have been identified, but do not necessarily occur with every uterine rupture. Symptoms are often fairly non-specific and conventional signs may be absent, as women may compensate well for massive concealed haemorrhage. Signs of a partial or complete uterine rupture that may or may not be present are as follows;

#### A) Antepartum and intrapartum

- Abnormal fetal heart monitoring:

Variable decelerations, or bradycardia (slow heart rate) have been consistently associated with uterine rupture. It is important to note that with a uterine rupture, labour sometimes continues, there is no loss of uterine tone or amplitude of contractions

#### **Abdominal pain**

- Sharp pain between contractions

- Unusual abdominal pain or tenderness
- Sudden onset of pain at the site of the previous scar

### **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.
- Hemodynamic instability
- Intraabdominal haemorrhage can lead to rapid maternal hemodynamic deterioration (hypotension and tachycardia).

Changes in contraction patterns

- Contractions that slow down or become less intense

B) Postpartum:

- In postpartum women, occult uterine rupture that occurred during delivery is characterized by pain and persistent vaginal bleeding despite use of uterotonic agents.
- Haematuria may occur if the rupture extends into the bladder.

## Prevention

- A uterine rupture cannot be accurately predicted or diagnosed before it actually occurs. It can occur suddenly during labour or birth.
- Some studies have suggested that measuring the thickness of the scar by ultrasound or following closely the pattern of contractions in labour may be useful in anticipating and therefore preventing a scar rupture. However, there is not enough information to prove that these methods should be widely adopted.
- Women should be advised to avoid becoming pregnant within 18-24 months of having a caesarean section
- All women who fail to 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.

## 4. Management (Appendix A)

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 death. Therefore, early recognition and prompt action are paramount.

The majority of studies report that in the rare event of a uterine rupture, if the labour was carefully monitored, the birth attendant was trained to attend VBAC births, and if the medical response was rapid, mothers and babies usually do well. With access to a rapid caesarean, fetal death from a uterine rupture is an extremely rare event.

The following action should be taken when a uterine rupture is suspected;

If rupture is suspected before delivery :

Fetal heart rate abnormalities, maternal hemodynamic instability, and severe abdominal pain generally require urgent delivery, regardless of the underlying aetiology.

Hemodynamically unstable patients should be stabilized with fluids and blood transfusion, as appropriate, and prepared for caesarean delivery.

Anaesthetic staff should be notified. The choice of regional versus general anaesthesia is based on the clinical stability of the patient and urgency of delivery. Epidural and spinal anaesthesia are generally contraindicated in patients with a severe bleeding diathesis because of the risk of epidural or spinal hematoma.

The choice of abdominal incision is based on the leading diagnoses in differential diagnosis. A Pfannenstiel incision only provides good exposure of the lower uterine segment and pelvis. A midline incision provides better exposure for comprehensive abdominal exploration, including the uterine fundus, which extends above the umbilicus by the late second trimester.

B) Management of women with uterine rupture at laparotomy

Repair versus hysterectomy:



Depends on the extent of uterine damage, patient's stability, patient future reproduction plans and surgeon's experience. However, if an adequate closure and haemostasis cannot be achieved, hysterectomy should be performed.

Management of coexistent complications — Concomitant uterine atony may result in persistent bleeding, which is managed by standard methods (uterotonic agents, haemostatic sutures, intrauterine balloon).

Uterine rupture may lead to bladder injury. If the uterine laceration extends to the bladder or a ureteral injury is suspected, intraoperative consultation with an experienced urologic surgeons is required.

#### 5. Documentation

Records should be kept in accordance with the CTUHB 'Standards for Record keeping' Guideline.

A plan of care for the immediate post-natal period should be documented by the operating obstetrician.

6. A Datix incident form should be completed.

#### 7. 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.

## 8. References

All documents should comply with current approved practice and the author will need to reference these within the document.

Oxford Desk Reference: Obstetrics and Gynaecology (2011), Sabaratnam Arulkumaran et al.

Advanced Life Support in Obstetrics (2004) *Course Syllabus*: American Academy of Family Physicians.

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CMACE (2011) Saving Mothers Lives: reviewing maternal deaths to make motherhood safer

Confidential Enquiries into Stillbirths and Infant Deaths (1996) *5<sup>th</sup> Annual Report, Focus Group – Ruptured Uterus*, Maternal and Child Health Research Consortium

Mercer, BM, Gilbert, S, Mark B. Landon, MB, et al. Labour Outcomes With Increasing Number of Prior Vaginal Births After Caesarean Delivery. *Obstetrics & Gynaecology* 2008;111:285-291

[www.UpToDate.com](http://www.UpToDate.com) : Accessed on 6/12/2019

## **Appendix A - Management of Ruptured Uterus**

**Call for the emergency obstetric team.**



**The Consultant Obstetrician on call should be informed and asked to attend.**



**Put the woman in to the left lateral position and give facial oxygen**



**Stop any oxytocin infusion that may be running**



**Site two large bore (16g) cannulas and take blood for full blood count, coagulation screen and cross match 6 units.**



**Commence an infusion with colloids or blood as required**



**Continuously record maternal temperature, pulse and blood pressure and cardiotocograph for assessment of fetal wellbeing.**



**Prepare for theatre for emergency caesarean or instrumental birth. Birth should take place within 30 minutes of decision (Category 1).**



**Anticipate a compromised baby. Call for an experienced paediatrician to attend the birth**

## **9. Appendix B Annual Auditable Standards**

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

1. DATIX form completed
2. OBSCUMRU chart in event of postpartum haemorrhage, compliance with completion
3. Incidence of rupture uterus following VBAC (DATIX reporting for evidence)

### 10. Directorate of Women & Child Health Checklist for Clinical Guidelines being submitted for Approval by Quality & Safety Group

Title of Guideline:	Management of Uterine Inversion and Ruptured Uterus
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Chair of Group or Committee supporting submission:	Mohamed Elnasharty, Karin Bisseling, Kathryn Greaves
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