

Uterine rupture

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Note:

This guideline provides advice of a general nature. This statewide guideline has been prepared to promote and facilitate standardisation and consistency of practice, using a multidisciplinary approach. The guideline is based on a review of published evidence and expert opinion.

Information in this statewide guideline is current at the time of publication.

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Health practitioners in the South Australian public health sector are expected to review specific details of each patient and professionally assess the applicability of the relevant guideline to that clinical situation.

If for good clinical reasons, a decision is made to depart from the guideline, the responsible clinician must document in the patient's medical record, the decision made, by whom, and detailed reasons for the departure from the guideline.

This statewide guideline does not address all the elements of clinical practice and assumes that the individual clinicians are responsible for discussing care with consumers in an environment that is culturally appropriate and which enables respectful confidential discussion. This includes:

- The use of interpreter services where necessary,
- Advising consumers of their choice and ensuring informed consent is obtained,
- Providing care within scope of practice, meeting all legislative requirements and maintaining standards of professional conduct, and
- Documenting all care in accordance with mandatory and local requirements

Explanation of the aboriginal artwork:

The aboriginal artwork used symbolises the connection to country and the circle shape shows the strong relationships amongst families and the aboriginal culture. The horse shoe shape design shown in front of the generic statement symbolises a woman and those enclosing a smaller horse shoe shape depicts a pregnant women. The smaller horse shoe shape in this instance represents the unborn child. The artwork shown before the specific statements within the document symbolises a footprint and demonstrates the need to move forward together in unison.



Australian Aboriginal Culture is the oldest living culture in the world yet Aboriginal people continue to experience the poorest health outcomes when compared to non-Aboriginal Australians. In South Australia, Aboriginal women are 2-5 times more likely to die in childbirth and their babies are 2-3 times more likely to be of low birth weight. The accumulative effects of stress, low socio economic status, exposure to violence, historical trauma, culturally unsafe and discriminatory health services and health systems are all major contributors to the disparities in Aboriginal maternal and birthing outcomes. Despite these unacceptable statistics the birth of an Aboriginal baby is a celebration of life and an important cultural event bringing family together in celebration, obligation and responsibility. The diversity between Aboriginal cultures, language and practices differ greatly and so it is imperative that perinatal services prepare to respectively manage Aboriginal protocol and provide a culturally positive health care experience for Aboriginal people to ensure the best maternal, neonatal and child health outcomes.

Purpose and Scope of PPG

The purpose of this guideline is to provide clinicians with information on uterine rupture. It includes risk factors, diagnosis, management and counselling for future pregnancies.



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Summary of Practice Recommendations

Prolonged fetal bradycardia is the first sign in over 70 % of cases of uterine rupture.

Atypical pattern of pain, or pain previously controlled by analgesia which becomes more severe requires complete clinical assessment by an experienced obstetrician

Shoulder tip pain and suprapubic pain may reflect uterine rupture and require further investigation

If uterine rupture suspected / diagnosed, resuscitate woman while arranging urgent laparotomy / caesarean section

Repair of the uterus is preferable, but in some cases hysterectomy may be required

Women with a history of uterine rupture should have a planned elective caesarean section in their next pregnancy



Abbreviations

BMI	Body mass index
cm	Centimetre(s)
et al.	And others
g	Gram(s)
%	Percent
VBAC	Vaginal birth after caesarean
WHO	World Health Organisation

Definitions

Uterine rupture	<p>Refers to a full thickness tear through the myometrium and serosa and may occur in a previously intact uterus or in one with a previous caesarean or myomectomy scar. By definition, it is associated with the following:</p> <ul style="list-style-type: none">> Clinically significant uterine bleeding> Fetal compromise> Protrusion or expulsion of the fetus and/or placenta into the abdominal cavity> Need for prompt caesarean delivery> Uterine repair or hysterectomy
Different terms may be used to describe partial separation (dehiscence) or healing defects (windows) of uterine scars	
Uterine scar dehiscence	A separation of a pre-existing scar that does not disrupt the overlying visceral peritoneum (uterine serosa) and that does not significantly bleed from its edges. In addition, the fetus, placenta, and umbilical cord must be contained within the uterine cavity.



Incidence

- > Uterine rupture occurs in 0.05 % to 0.086 % of all pregnancies¹
- > Dehiscence of a caesarean section scar is the most common cause of uterine rupture and the incidence varies according to type and location of the uterine incision (previous **classical caesarean uterine incision** risk is 1 to 12 %)
- > Uterine rupture is rarely seen in developed countries in the absence of previous surgery, but is more commonly seen with the use of oxytocics in the presence of a uterine scar¹
- > Uterine rupture is more frequent in obstructed labour
- > Uterine scar dehiscence is a more common event seldom results in major maternal or fetal complications

Risk factors²

Known or suspected risk factors	Odds ratio (adjusted)
Previous vaginal birth	1.00
Previous caesarean section	41.79
Induction of labour	2.06
Instrumental birth (2 nd birth)	0.77
Birthweight (of 2 nd birth)	
2500-3999 g	1.00
≥ 4000 g	1.76
Gestational age (of 2 nd birth)	
37-41	1.00
42+	1.58
Maternal age (at 2 nd birth)	
25-29	1.00
30-34	1.34
35+	1.78
Maternal BMI (at 2 nd birth)	
≤ 25.0	1.00
25.0 – 29.9	0.93
30+	1.30
Height (cm)	
– 159 cm	2.09
160-164 cm	1.64
165-169 cm	1.13
Interpregnancy interval (months)	
< 12	1.26
12 to < 36	1.00

Adapted from: Kaczmarczyk M, Sparen P, Terry P, Cnattingius S. Risk factors for uterine rupture and neonatal consequences of uterine rupture: a population-based study of successive pregnancies in Sweden. BJOG 2007; 114: 1208-1214.

- > **NB:** In third world countries, lower uterine segment caesarean sections are often performed with a midline skin incision. If this can be identified from the history, these cases can be managed in the same manner as other lower segment caesarean sections
- > An Australian study has shown increased risks of uterine rupture associated with induction of labour and augmentation of labour irrespective of the agents (oxytocin or prostaglandin) used for that purpose³



Diagnosis

- > Rupture at the site of a previous uterine scar may occur with few warning signs because the scar is relatively avascular
- > Studies on vaginal birth after caesarean (VBAC) report that prolonged fetal bradycardia is the first sign in over 70 % of cases of uterine rupture. In these series, only 8 % presented with pain and 3 % with bleeding^{4,5,6,7,8}
- > If there is an atypical pattern of pain, or pain previously controlled by analgesia (epidural or otherwise) which becomes more severe, complete clinical reassessment by an experienced obstetrician is required^{7,8}. Shoulder tip pain may indicate peritoneal irritation and suprapubic pain may reflect local, including bladder, irritation

Presentation

- > Sudden, severe abdominal pain (may decrease after rupture)
- > Bleeding – intra-abdominal and / or vaginal unless the fetal head blocks the pelvis (blood may be retained within the broad ligament)
- > Tender abdomen
- > Easily palpable fetal parts
- > No fetal presentation on vaginal examination
- > Cessation of uterine contractions
- > Abdominal distension / free fluid
- > Abnormal uterine contour
- > Rapid maternal pulse
- > Absent fetal heart activity
- > Haematuria suggests bladder involvement
- > Hypovolaemic shock if rupture involves major blood loss

Management

- > Early involvement of senior experienced staff, including obstetrician, anaesthetist, midwife(s), paediatrician, and haematologist and intensivist as required (if available)
- > Resuscitate while arranging urgent laparotomy / caesarean section
 - > The most senior person should take charge and assign roles and responsibilities to all other individuals
 - > If major blood loss, recruit as many people as possible to assist during resuscitation e.g. to record events, drugs given, someone to make urgent phone calls, to organise transport of laboratory samples, to bring blood (products) to the site of resuscitation, and additional staff to support family members and significant others
- > Repair of the uterus is preferable, but in some cases hysterectomy may be required
- > Provide standard post-operative and post-natal care
- > Provide adequate counselling as soon as possible and arrange further follow-up

Counselling for future pregnancies

- > If tubal ligation was not performed at the time of laparotomy, explain the increased risk of rupture with subsequent pregnancies, and discuss the option of permanent contraception
- > If the defect is confined to the lower segment the risk of rupture in a subsequent pregnancy is similar to that of someone with a previous caesarean section
- > If there are extensive tears involving the upper segment, future pregnancy may be contraindicated
- > Women with a history of uterine rupture should have a planned elective caesarean section (37 to 38 weeks' gestation) in their next pregnancy⁹

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Write Group Lead

Allison Rogers
Dr Chris Wilkinson
Dr Elinor Atkinson
Dr Brian Peat
Dr Kym Osborn

Write Group Members

Prof Marc Keirse
Dr Geoffrey Matthews

SAPPG Management Group Members

Sonia Angus
Dr Kris Bascomb
Lyn Bastian
Elizabeth Bennett
Dr Feisal Chenia
John Coombas
A/Prof Rosalie Grivell
Dr Sue Kennedy-Andrews
Jackie Kitschke
Catherine Leggett
Dr Anupam Parange
Dr Andrew McPhee
Rebecca Smith
A/Prof John Svigos
Dr Laura Willington



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Developed by: SA Maternal, Neonatal & Gynaecology Community of Practice
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