South Australian Perinatal Practice Guidelines

Uterine rupture

Definitions

- ***Uterine rupture*** 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
- Different terms may be used to describe partial separation (dehiscence) or healing defects (windows) of uterine scars
- Uterine scar dehiscence is a more common event that seldom results in major maternal or fetal complications
- ***Uterine scar dehiscence*** is 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 pregnancies (Rogers & Chang 2006)
- Dehiscence of a caesarean section scar is the most common cause of uterine rupture
- 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 scar (Rogers & Chang 2006)
- Uterine rupture is more frequent in obstructed labour

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Uterine rupture

Risk factors

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 (2nd birth)	0.77
Birthweight (of 2nd birth) 2500-3999 g ≥ 4000 g	 1.00 1.76
Gestational age (of 2nd birth) 37-41 42+	 1.00 1.58
Maternal age (at 2nd birth) 25-29 30-34 35+	 1.00 1.34 1.78
Maternal BMI (at 2nd birth) ≤ 25.0 25.0 – 29.9 30+	 1.00 0.93 1.30
Height (cm) – 159 cm 160-164 cm 165-169 cm	 2.09 1.64 1.13
Interpregnancy interval (months) < 12 12 to < 36	 1.26 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.

- 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 purpose (Dekker et al. 2010)

Diagnosis

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- 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 (Flamm et al. 1990; Farmer et al. 1991; Leung et al.1993; Menihan 1998; Lieberman et al. 2004, Martel et al 2004)
- 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 (Lieberman et al. 2004; Martel et al. 2004). 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

- Resuscitate while arranging urgent laparotomy / caesarean section
- 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 pregnancy

References

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Abbreviations

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

Version control and change history

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1.0	21 Oct 08	18 Jan 11	Original version
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