

Policy

Clinical Guideline

South Australian Perinatal Practice Guidelines – Uterine inversion

Policy developed by: SA Maternal & Neonatal Clinical Network

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Summary Guideline for the management of the pregnant woman with uterine inversion.

Keywords uterine inversion, labour, shock, haemorrhage, fundus, pelvic examination, vagina, placenta, syntocinon, crystalloids, o'sullivan, hydrostatic, lithotomy, irrigation, laparotomy, cervical incision, neurogenic, haemorrhagic, inversion, abdominal pain, haemorrhage, shock, uterine rupture, glycereryl trinitrate, salbutamol, terbutaline, laparotomy, uterotonic, Perinatal Practice Guidelines, clinical guideline

Policy history Is this a new policy? **N**
Does this policy amend or update an existing policy? **Y**
Does this policy replace an existing policy? **Y**
If so, which policies? Uterine inversion

Applies to All SA Health Portfolio
All Department for Health and Ageing Divisions
All Health Networks
CALHN, SALHN, NALHN, CHSALHN, WCHN, SAAS
Other

Staff impact All Clinical, Medical, Nursing, Allied Health, Emergency, Dental, Mental Health, Pathology

PDS reference CG128

Version control and change history

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uterine inversion

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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

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Uterine inversion flow chart

Recognition of signs and symptoms

- > Severe abdominal pain in the third stage of labour
- > Shock
- > +/- haemorrhage
- > Fundus not palpable
- > Pelvic examination reveals a mass in the vagina

Call for help

- > Senior obstetric and anaesthetic assistance

Replace the inversion as soon as possible

- > With sterile gloves grasp the uterus and push through the cervix towards the umbilicus
- > The sooner the inversion is replaced the better
- > Maintain hand in place until a sustained contraction

- > Do not remove the placenta if it is adherent
- > Withhold oxytocin until inversion corrected

O'Sullivan's hydrostatic technique

If initial uterine replacement unsuccessful:

- > O'Sullivan's hydrostatic repositioning can be done in theatre or in labour ward +/- anaesthesia
- > Exclude uterine rupture first
- > Position in lithotomy
- > With 2 bags of warmed irrigation fluid and wide bore giving set +/- silastic ventouse cup to produce a better seal
- > Run copious amounts of warmed fluid into the vagina (by gravity or pressure)
- > If unsuccessful repeat or consider Surgical management (laparotomy or transvaginal cervical incision)

- > Once uterine inversion corrected, perform manual removal of placenta in theatre under anaesthesia if still attached
- > Give stat dose oxytocin 10 IU IV
- > Commence oxytocin infusion (oxytocin 40 IU in 500 mL sodium chloride 0.9 %) at 125 mL / hr over 4 hours

Assess and manage shock

- > Lie flat
- > Administer oxygen 8 L
- > X 2 IV cannulas
- > Group and cross match 4 units of blood, CBP
- > Resuscitate with rapid infusion of crystalloids
- > Monitor vital signs

Introduction

- > Uterine inversion is almost always caused by applying cord traction before the uterus has contracted firmly and placental separation has occurred. Teaching should emphasise the maxim that the uterus must be palpated to confirm that it is contracted before applying any traction on the cord
- > Uterine inversion is often associated with acute lower abdominal pain and severe shock of neurogenic and haemorrhagic origin. The shock is often out of proportion to the degree of blood loss (Blood loss may not occur if the placenta remains attached)
- > Bimanual examination will confirm the diagnosis and also reveal the degree of inversion

Definition¹

- > Uterine inversion is the folding of the fundus into the uterine cavity in varying degrees
 - > First degree: The uterus is partially turned out
 - > Second degree: The fundus has passed through the cervix but not outside the vagina
 - > Third degree: The fundus is prolapsed outside the vagina
 - > Fourth degree: The uterus, cervix and vagina are completely turned inside out and are visible
- > Acute inversion occurs within 24 hours of birth
- > Subacute inversion occurs between 24 hours and 30 days postpartum
- > Chronic inversion occurs after 30 days postpartum and is rare

Recognition²

- > Early recognition is key to initiate prompt treatment and reduce associated morbidity

Symptoms and signs include:

- > Severe lower abdominal pain in the third stage of labour
- > Haemorrhage (present in 94 % of cases)
- > Severe shock
- > Placenta may or may not be attached
- > Uterine fundus is not palpable abdominally or in mild degrees there may be a dimple in the fundal area
- > Pelvic examination reveals a mass in the vagina (first or second degree) or outside the introitus (third degree)²

Management^{1, 2, 5}

- > Call for assistance – both senior obstetric and anaesthetic assistance
- > Immediately try to correct the inversion
 - > With sterile gloves on, grasp the uterus and push it through the cervix towards the umbilicus to its normal position, using the other hand to support the uterus
 - > Keep the hand in the uterus until firm contraction of the uterus is felt

Simultaneous maternal resuscitation:

- > Withhold oxytocin until after successful correction of inversion

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- > Do not attempt to remove the placenta from an inverted uterus (danger of massive haemorrhage)
- > Administer oxygen 8-12 L via re-breathing face mask
- > Ensure the head of the bed is flat. (The woman may remain with her legs bent or in lithotomy)
- > Commence monitoring immediately, including automated blood pressure recording, pulse, respirations, SpO₂
- > Assess for clinical signs of shock e.g. cool, clammy, pale, rapid pulse, decreased blood pressure
- > Insert intravenous access x 2 using 16 gauge cannulas
- > Group and cross match at least 4 units of blood, complete blood picture
- > Resuscitate with appropriate intravenous fluid, e.g. sodium chloride 0.9 %, Hartmann's solution (crystalloids) or Gelafusine[®] (gelatin – based colloid). When using crystalloid, the ratio of resuscitative intravenous fluid required to blood lost is 3:1
- > To resuscitate more quickly, administer intravenous fluids using a pressure infusion device
- > Insert indwelling catheter without hindering resuscitation
- > If the uterus is successfully returned to its normal position then the placenta can be manually removed in theatre under anaesthesia
- > Following removal of the placenta, administer 10 IU of oxytocin intravenously followed by an oxytocin infusion (40 IU in 500 mL sodium chloride 0.9 % at 125 mL / hour over 4 hours)
- > If the above measures are unsuccessful then employ O'Sullivan's hydrostatic technique. Failure to reduce a uterine inversion may be the result of contraction of the cervix once the uterus has prolapsed through it. This leaves insufficient room for the prolapsed uterus to be inverted back through the cervix

Guideline for O'Sullivan's hydrostatic technique^{1, 2, 5}

- > Hydrostatic reduction is a method of correcting the inversion by infusing warm saline into the vagina
- > Exclude uterine rupture before performing the procedure
- > If immediate uterine replacement is unsuccessful, consider using a uterine relaxing agent such as:
 - > Glyceryl trinitrate spray 400 micrograms - sublingual (works within 2 minutes and has a short half-life) OR
 - > Intravenous salbutamol up to 250 micrograms OR
 - > Subcutaneous terbutaline 250 micrograms (for further information see [Tocolysis for uterine hypercontractility](#))
- > Arrange theatre to reduce / correct the inversion. Once the uterine inversion is corrected perform a manual removal of placenta if necessary
- > The hydrostatic method does not always require anaesthesia and may be done in the labour and delivery room while waiting for theatre or on the way to theatre
- > Position the woman in lithotomy
- > Use 2 x 1 litre bags of warmed irrigation fluid (e.g. sodium chloride 0.9 %) attached to a wide bore giving set (or cystoscopy irrigation set).
- > The open end of the tubing may be inserted into the vagina and the introitus sealed by holding the labia tightly around the forearm, using the other hand, to prevent the warmed

fluid from leaking out (may require an assistant)

OR

- > The open end of the tubing may be attached to a 6 cm silastic ventouse cup. The silastic ventouse suction cup is positioned in the lower vagina at the inner aspect of the introitus to create a seal
- > Run in copious amounts of the warmed fluid by gravity or by pressure on the bag. Up to four litres may be required
- > In most cases this will reduce the inversion, with rapid resolution of the shock. The placenta can then be removed under anaesthesia
- > Thereafter contraction of the uterus must be maintained by appropriate oxytocic treatment

Surgical management

- > If manual / hydrostatic methods are unsuccessful, resuscitate and anaesthetise the woman (halogenated gases may be needed to provide full uterine relaxation). Once anaesthetised and with aid of uterine relaxants, repeat the procedure
- > If this fails again proceed to trans vaginal cervical incision and repair or laparotomy to correct the defect
- > At laparotomy, the uterine position may be corrected by traction on the round ligaments. If this fails the retraction ring at the level of the cervix should be incised. The incisions should be made at 12 o'clock and 6 o'clock to avoid the uterine vessels. In the trans cervical approach the bladder and rectum are also vulnerable
- > Uterotonic drugs are then given to maintain uterine contraction and to prevent reinversion

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Abbreviations

CBP	Complete blood picture
e.g.	For example
hr	Hour
%	Percentage
IU	International Units
®	Registered trademark
IV	Intravenous
L	Litre(s)
mL	Millilitre(s)
URL	Uniform resource Locator
+/-	Plus or minus

Version control and change history

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