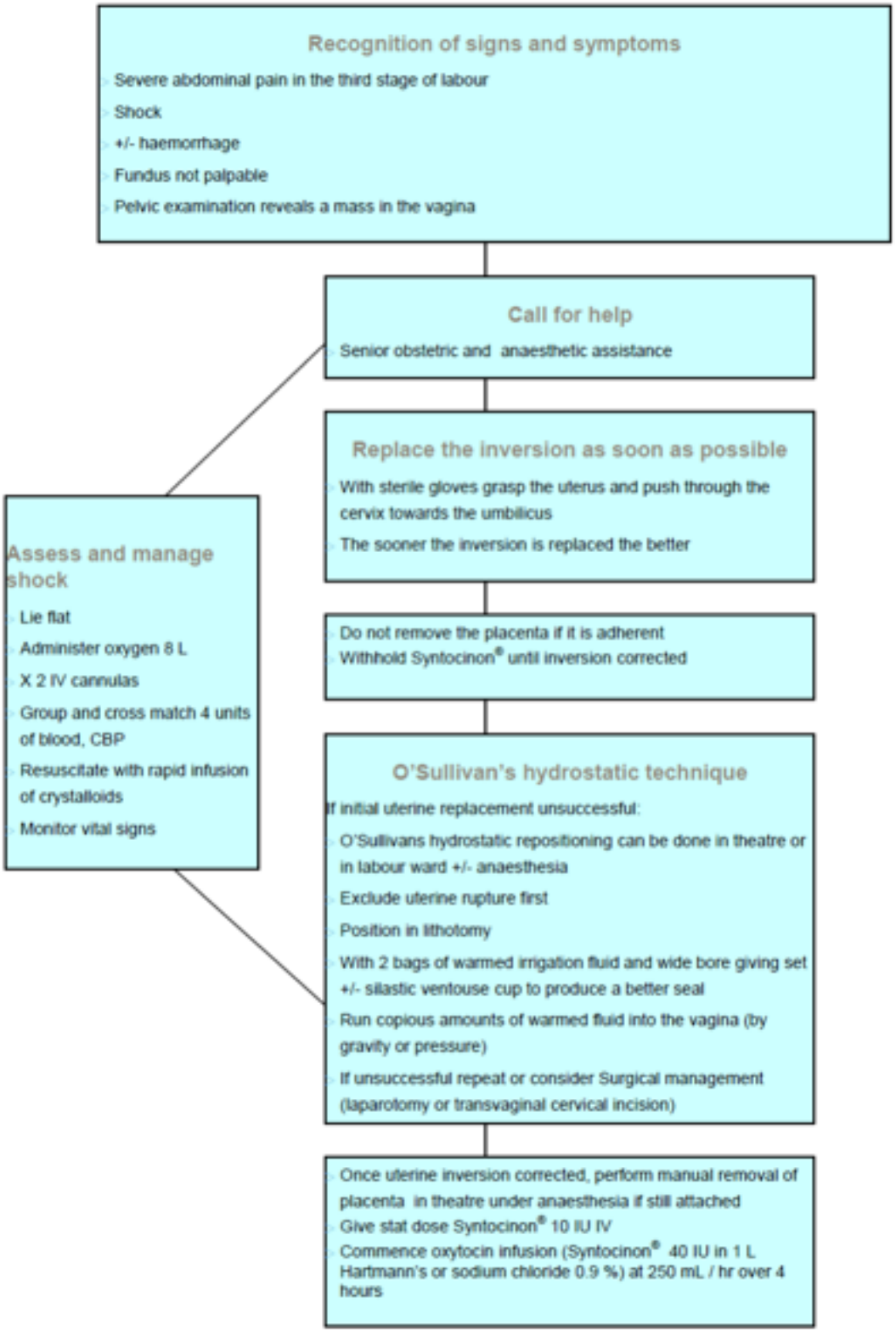
Uterine inversion

© Department of Health, Government of South Australia. All rights reserved.

Uterine inversion flow chart



Government of South Australia
SA Health

ISBN number: UNKNOWN
Endorsed by: SA Maternal & Neonatal Clinical Network
Contact: South Australian Perinatal Practice Guidelines workgroup at: cywhs.perinatalprotocol@health.sa.gov.au

Uterine inversion

© Department of Health, Government of South Australia. All rights reserved.

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

Definition[1]

- 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

Recognition[2]

- 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]

ISBN number: UNKNOWN
Endorsed by: SA Maternal & Neonatal Clinical Network
Contact: South Australian Perinatal Practice Guidelines workgroup at:
cywhs.perinatalprotocol@health.sa.gov.au

Government of South Australia
SA Health

© Department of Health, Government of South Australia. All rights reserved.

- 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 Syntocinon® until after successful correction of inversion
- Do not attempt to remove the placenta from an inverted uterus (danger of massive haemorrhage)
- Administer oxygen via 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, SpO_2
- 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 Syntocinon® intravenously followed by an oxytocic infusion (Syntocinon® 40 IU in 1000 mL Hartmann's solution or sodium chloride 0.9 % at 250 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

ISBN number: UNKNOWN
Endorsed by: SA Maternal & Neonatal Clinical Network
Contact: South Australian Perinatal Practice Guidelines workgroup at: cywhs.perinatalprotocol@health.sa.gov.au

Uterine inversion

© Department of Health, Government of South Australia. All rights reserved.

- If immediate uterine replacement is unsuccessful, consider using a uterine relaxing agent such as:
  - Glycereryl 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, refer to the PPG '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

References

1. Belfort MA, Dildy III GA. Postpartum hemorrhage and other problems of the third stage. In: James DK, Weiner CP, Steer PJ, Gonik B, Crowther C, Robson SC, editors. High risk pregnancy management options. 4th ed. St Louis: Elsevier Saunders; 2011. p. 1307-1308.

ISBN number: UNKNOWN
Endorsed by: SA Maternal & Neonatal Clinical Network
Contact: South Australian Perinatal Practice Guidelines workgroup at: cywhs.perinatalprotocol@health.sa.gov.au

© Department of Health, Government of South Australia. All rights reserved.

2. Wykes CB. Uterine inversion. In: Grady K, Howell C, Cox C, editors. Managing Obstetric Emergencies and Trauma. Second ed. London: RCOG Press; 2009. p. 238-241.
3. World Health Organization (WHO). Managing complications in pregnancy and childbirth: a guide for midwives and doctors. Section 3: Correcting uterine inversion. P. 91. Department of Reproductive Health and Research, WHO, Geneva. Available at URL: http://whqlibdoc.who.int/hq/2000/WHO_RHR_00.7.pdf
4. Catanzarite VA, Moffitt KD, Longmire Baker M, Awadalla SG, Argubright KF, Perkins RP. New approaches to the management of acute puerperal uterine inversion. Obstet Gynecol 1986; 68: Suppl 7S – 10S.
5. Sibai BM. Evaluation and management of postpartum hemorrhage. In: Sibai BM. Management of acute obstetric emergencies. Philadelphia: Elsevier; 2011. p. 63-70.

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

PDS reference: OCE use only

Version	Date from	Date to	Amendment
1.0	21 July 04	25 Jan 05	Original version
2.0	25 Jan 05	25 Mar 08	Reviewed
3.0	25 Mar 08	20 Mar 12	Reviewed
4.0	20 Mar 12	current	

ISBN number: UNKNOWN
Endorsed by: SA Maternal & Neonatal Clinical Network
Contact: South Australian Perinatal Practice Guidelines workgroup at: cywhs.perinatalprotocol@health.sa.gov.au

Government of South Australia
SA Health