Southampton NHS
University Hospitals NHS Trust

POSTPARTUM HAEMORRHAGE: GUIDELINES

Version:	3.0
Ratification Committee:	Women and Newborn Clinical Governance Steering Group
Date of Ratification	Friday 7th January 2011
Signature of ratifying Committee Group/Chair	Mr Ash Monga Chairman Women and Newborn Clinical Governance Steering Group.
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Date issued:	7th January 2011
Review date:	31st January 2014
Target audience:	Maternity Services
Key words	Postpartum haemorrhage primary or secondary, PPH, placenta accreta, interventional radiology, intraoperative cell salvage, B lynch suture
Main areas affected	Maternity Services
Consultation:	**Obstetric and Gynaecology Clinical Governance Steering Group**

Name of Committee/Group Consulted	**Date(s)**
. **Obstetric and Gynaecology Clinical Governance Steering Group**	June 2010
Name of Staff/Patient Group Consulted	**Date(s)**
General consultation Consultant Obstetricians Consultant Obstetric Anaesthetists Consultant Midwives Consultant Haematologist: Dr Jason Mainwaring Christina Nurmahi: pharmacist	June 2010 Comments from LC, MAC, SJM, JR, SA-R, AR, SB, MAC, SJ, MC, HS, JM, CN, NH. Re-circulated Aug 2010

Equality Impact Assessments completed and policy promotes Equity	YES
Number of pages:	24
Type of document:	Level 2

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Contents

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1 Introduction

Postpartum haemorrhage is a common obstetric emergency where prompt recognition and appropriate management can help to reduce associated maternal morbidity and potential mortality.

1.2 Scope

These guidelines apply to all women at risk of or experiencing postpartum haemorrhage.

1.3 Aim and Outcomes

The guidelines aim to set out the steps to be followed including the immediate management during and following postpartum haemorrhage.

1.4 Objectives

- To support staff in the management patients experiencing postpartum haemorrhage
- To ensure the safety of patients.

1.5 Definitions

Text book definitions:

Primary - The loss of more than 500 ml of blood from the genital tract within the first 24 hours after delivery.

Secondary - Haemorrhage from the genital tract more than 24 hours after delivery up to 42 days.

Local definitions of postpartum haemorrhage:

Postpartum haemorrhage for data collection purposes: Blood loss of 1000mls or above

Major obstetric haemorrhage - Blood loss of 2000mls or more

2 Related Trust Policies

- Resuscitation Policy (StaffNet)
- Women who decline blood transfusion: management of Guideline (StaffNet)
- Massive Blood Transfusion policy (StaffNet)
- Transfer of women antepartum, intrapartum and postpartum emergency transfer Guideline (StaffNet)

3 Roles and Responsibilities

This policy applies to all staff employed or contracted by Southampton University NHS Trust. Every member of staff has personal responsibility to ensure they comply with this document. It is the responsibility of department managers, consultants, team leads and education leads to ensure that their staff are aware of this policy.
Non-compliance with a Trust policy, procedure or guideline may result in disciplinary action.

Obstetric Consultant	The on call Obstetric Consultant has overall clinical responsibility for the management of women with PPH. The consultant should ensure effective communication between medical personnel and the women/family.
Consultant Anaesthetist	The Consultant Anaesthetist should be aware and available to assist at the request of obstetric staff in all cases of PPH
Labour Ward Coordinator	Has responsibility to coordinate the management and communication between obstetric staff, anaesthetists, transfusion services / Haematologists, porters and identified scribe.
Midwife	Should assist the team in the management of women with PPH and liaise with the women/family.
Haematologist / Blood Transfusion services	Should have continuous communication with the labour ward coordinator, clinical lead or delegated individual to ensure adequate resources are available as required.
Porters	The porters are responsible for the expedited collection and delivery of blood samples for transfusion.
Identified Scribe	Is responsible for documenting all events and management decisions as they occur.

Communication and Dissemination Plan

The Guideline will be displayed on the Staff Net, and sent to the Care Group Management Teams. The Teams will be expected to cascade to all relevant staff groups. In addition, the guidelines will be included in local induction programmes for all new staff members.

Education and Support Plan

- **See the Maternity Service TNA document**

All medical, nursing and midwifery staff caring for pregnant women will have support and training in implementing the contents of the guideline via Induction programmes, mandatory practice updates Maternity Mail and practice educators.

4. RISK FACTORS PREDISPOSING TO POSTPARTUM HAEMORRHAGE:

The recommended management of the third stage in **low risk** women includes the prophylactic administration of 10 units oxytocin (Syntocinon) im at delivery of the anterior shoulder. All Caesarean sections should have a slow iv injection of 5 units oxytocin for the third stage.

In addition for **high risk** women a subsequent oxytocin infusion should be prepared in labour and given after delivery of the baby (40 units/500mls normal saline over 4 hours, running at 125mls/hr). Combined oxytocin and ergometrine (Syntometrine) im (1ml) may be used as an alternative prophylactic agent to an oxytocin infusion for high risk women (without hypertension) as it reduces the risk of minor PPH (500-1000mls). However, note that vomiting and a raised blood pressure are recognised side effects of this drug.

Risk factors include:

- Multiple pregnancy
- Prolonged labour >18 hours (especially when augmented with oxytocin)
- All Caesarean sections
- Abnormal placentation/retained products
- APH in labour
- Previous PPH (>1000mls)
- Possible or definite chorioamnionitis
- Instrumental deliveries for delay in second stage.
- Grand multiparity ≥5 children
- Large baby (>4.5kg)
- BMI >40
- Women with known large fibroids (eg >5cm)
- Significant anaemia <90g/l

All women who decline blood products should have an individual management plan documented in their health records (please refer to separate StaffNet guideline: Women who decline blood transfusion: management of).

5. MANAGEMENT OF PRIMARY PPH

The principles of management are to stop blood loss and replace circulating blood volume. Remember general resuscitation measures **ABC- Airway, Breathing (including additional inspired oxygen), Circulation.**

If the woman is unconscious and/or there is immediate massive bleeding, call 2222 and request the "emergency obstetric team" if in the Princess Anne Hospital or 01962 898226 if not.

Consider the possible causes to help direct management: atony, retained products, trauma, coagulopathy.

Should the lead clinician feel at any stage unable to manage the patient appropriately or the patient's condition continues to deteriorate they should urgently contact senior medical staff for assistance through the labour ward co-ordinator, bleep system or switchboard.

NB: In the case of women refusing blood, the triggers for action must be much lower (see "Management of women who decline blood transfusion" guideline).

5.1 IMMEDIATE ACTION

(Many of these actions should occur concurrently). See appendices 2 and 3 for documentation sheet and flow chart. Accurate documentation of events is very important and a scribe should be allocated.

- Rub up a contraction using bimanual uterine compression if necessary for uterine atony. Ensure **OXYTOCIN 10 units im or SYNTOMETRINE 1ml im** has been given.
- **Call For Help**. Inform the coordinating midwife (bleep 2415), medical staff (On call obstetric SHO bleep 2412; obstetric SPR Bleep 2411, obstetric SR bleep 2406). If major obstetric haemorrhage call 2222 and bleep "obstetric emergency team".
- **IV Access** Establish iv access (usually 2 large bore cannulae 16g grey or 14g brown) and start an infusion of 1 litre compound Sodium Lactate (Hartmann's). For any PPH a blood giving set should be used. Pressure infusion with a compression cuff on the plastic bag may be useful. Consider plasma substitute (Gelofusine) 500-1000mls. Until blood is

available, give up to 2 litres of Hartmann's and up to 1-2 litres of Gelofusine, preferably warmed and infused as rapidly as possible.

- **Transfer to PAH.** If delivery has occurred away from main PAH Labour Ward, consider and arrange early emergency transfer to PAH using 01962 898226 ambulance as necessary. Communication with the receiving hospital or Labour Ward is very important. See "Transfer Guideline" for further details.
- **Observations to be carried out:**
  - pulse, blood pressure and respiration rate
  - every 5 minutes during the haemorrhage or while unstable
  - every 15 minutes for an hour after this
  - every 30 minutes for 2 hours
  - every hour for 2 hours
  - 4 hourly for 24 hours

  Automated blood pressure machine - where available use this to monitor blood pressure and pulse.

  Ensure bladder is empty: a Foley catheter should be inserted and hourly fluid balance monitored.
- **Facial oxygen (15 litres/min)** should be given if there is significant and/or ongoing blood loss. Oxygen saturation should be monitored continuously via pulse oximetry and documented every 15 minutes. Hudson face masks with bag reservoirs are kept in theatre recovery if delivering high inspiratory oxygen levels.
- **Estimation of blood loss** For any PPH the weight of all swabs and pads should be recorded to help assess estimated blood loss (EBL).
- **Send blood samples urgently via porters** (bleep 1585) for FBC ± clotting screen including fibrinogen and group & save. If blood loss is continuing, check an immediate haemacue and cross-match 2-4 units as appropriate. For major haemorrhage, group-specific blood can be requested immediately (cross match automatically follows). Use pink cards in all blood bags to highlight urgency of sample. **Alert blood transfusion technician as soon as possible on ext 3339. Use red telephone in theatres or bleep technician if out of hours (bleep 2116). The term "major obstetric haemorrhage" should be used when contacting the laboratory for PPH >1500mls to indicate the urgency for results and blood products.** Regular FBC and clotting studies including fibrinogen should be performed to guide the need for red cells and/or clotting factors. The frequency and timing of these is determined by clinical events. Remember that there may be a delay of one hour before results are obtained.

- **Blood Loss >1500mls** If the estimated loss exceeds 1500 mls, the obstetric anaesthetist should be informed (bleep 2410) and they should attend if requested.
- **Placenta –** examine to check this is complete.

DRUGS: If uterine atony is perceived to be the cause of the bleeding, the following drugs should be instituted in turn until the bleeding stops:

- **OXYTOCIN infusion (40 units/500 ml normal saline** at rate 125mls/hr ie over 4 hours
- **ERGOMETRINE 500 micrograms im (Max dose of ergometrine is 1mg)**. Do not use ergometrine if there have been concerns about any hypertension. Side effects include hypertension, nausea and vomiting.
- **CARBOPROST (HAEMABATE) 250 micrograms** (1 ml) im every 15 minutes up to 8 doses (2mg). Carboprost can be given intramyometrially at Caesarean section as 500µg dose. Carboprost is contraindicated in women with moderate/severe asthma.
- **MISOPROSTOL 1000 micrograms rectally** for rapid absorption (5 x 200 micrograms tablets). The side-effects of misoprostol (prostaglandin E_1 analogue) include shivering and pyrexia. Misoprostol can be given directly into the uterine cavity at Caesarean section if needed.

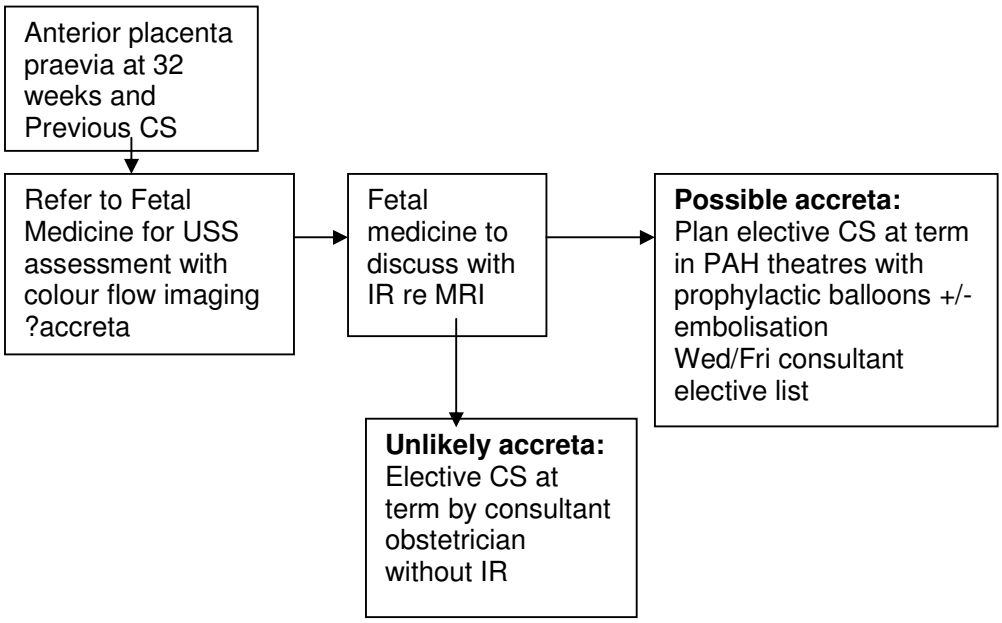
5.2. CONTINUED BLEEDING: the following medical and surgical measures should be considered:

- **EUA in theatre** If the situation is not rapidly brought under control there should be early consideration of transfer to theatre for examination under anaesthetic (EUA), particularly to ensure that there are no retained products or genital tract trauma.
- **Arterial line monitor (+/-) central venous pressure monitoring** should be considered along with blood gases and acid base status.
- **Blood loss >2000mls**. The Consultant obstetrician on call should be informed as soon as possible if the blood loss exceeds 2 litres or earlier if there are other concerns about the control of the bleeding or condition of the mother.
- **Balloon Tamponade** The 500ml intrauterine balloon catheter (Bakri balloon available on the PPH trolley) may be useful when the PPH continues due to abnormal placentation, abnormal clotting or a large placental bed. It is important to continue an oxytocin infusion to keep the uterus contracted around the balloon. The balloon should remain in situ for at least 24 hours before decompressing.
- **Surgical manoeuvres** to consider at laparotomy include:
  a) B-Lynch brace suture (number 1 vicryl W9289) (see figure 1).

b) Parallel vertical compression sutures for bleeding placenta praevia/accreta (see figure 2)
c) Uterine/internal iliac artery ligation
d) Hysterectomy (?subtotal) may be required. The decision on when to proceed with a hysterectomy is often very difficult and it may be helpful to discuss this with a senior colleague. Any Obstetrician who does not feel competent to perform these procedures should immediately call the on-call Consultant Gynaecologist or, if necessary, a vascular surgeon.
e) For uncontrolled surface bleeding, such as from a placenta accreta, there may be a role for surgical sealants, such as Floseal or Quixil, in combination with surgicel (eg Fibrillar).

- **Interventional radiology** can be used as a prophylactic measure eg where there is a known or suspected case of placenta accreta antenatally using ultrasound and/or MRI, such as anterior placenta praevia with a previous Caesarean section (see appendix 1 for further detail on recommended imaging and subsequent management of possible accreta). Balloons are placed in the internal iliac or uterine arteries immediately before delivery. The balloons can be inflated to occlude the vessels prior to uterine incision or in the event of PPH and embolisation performed via the catheters if bleeding continues. As considerable coordination of obstetric surgical, radiological and neonatal teams is required for these procedures to take place, it is vital that early discussion and organisation occurs. Contact Consultant Interventional Radiologists via switchboard. Elective procedures may be performed in the interventional radiology suite at SGH or in the obstetric theatre at PAH.

Radiological embolisation of the uterine arteries/internal iliac arteries can be beneficial in certain emergency PPH eg persistently atonic uterus despite B-Lynch brace suture, surgical complications or uterine tears at the time of Caesarean section, bleeding following Caesarean hysterectomy, persistent bleeding ?cause after vaginal delivery. Again it is preferable that early contact is made in anticipation of the service being required. Call Interventional Radiology Radiographer/Radiologist on call via switchboard. Organisation of interventional radiology may require transfer to SGH and depends on the availability of a radiologist (**not** a 24 hour/7 day on call service).



- **Consider transfer to ITU.**

  This often involves a significant planning and advanced communication. Consider early if required. It is often useful to discuss with ITU clinicians even if transfer is eventually not required. Any woman with a blood loss of >1500mls must be admitted to HDU whilst considering ITU.

6. BLOOD AND BLOOD PRODUCT REPLACEMENT

Blood transfusion. Follow Trust recommendations:

If clinical condition warrants (bleeding very heavy with or without shock) consider O negative blood, although group specific blood is preferable. 3 units of O negative blood are available on delivery suite at PAH. Blood should be administered through blood warming equipment, but filtering is unnecessary. Remember to use the blood transfusion peach-coloured prescription and record forms

Fresh frozen plasma (FFP)

It is important to use FFP **before** coagulation results are known in case of uncontrollable bleeding. With on-going bleeding a red cell to FFP transfusion ratio of 2:1 is recommended. When the Prothrombin Time (PT) +/- Activated Partial Thromboplastin Time (APPT) is >1.5 x normal control, there is an association with an increased risk of microvascular bleeding. Anticipate PT/APPT >1.5 x normal if the mother has received ≥ 1 total circulating blood volume

replacement (total blood volume = approximately 100mls/kg in pregnancy). FFP at a dose of **15mls/kg body weight or 4 units for most adults** would be appropriate in this setting. Allow 30 minutes for thawing. Once thawed FFP may be stored at 4ºC for up to 24 hours and it may be worthwhile for the blood transfusion laboratory to thaw a therapeutic dose once they become aware of a massive transfusion situation in order to minimise delay. Repeat a coagulation screen 30-60 minutes after completion of FFP infusion to assess the response and aim for PT/APPT < 1.5x the normal control value.

Platelets

A platelet count of < 50 x 10^9/litre is associated with an increase in microvascular bleeding. Anticipate platelet count < 50 x 10^9/litre if the patient has received ≥ 1 blood volume replacement. Give one adult therapeutic dose (ATD) of platelet concentrate if the platelet count is < 50 x 10^9/litre. Repeat the FBC 30-60 minutes post transfusion to ensure the platelet count is ≥ 75 x 10^9/litre. Use 1 ATD of platelets before a FBC result is available in cases of uncontrollable bleeding.

Cryoprecipitate.

A fibrinogen level of < 0.5g/litre is strongly associated with microvascular bleeding. Give cryoprecipitate if the fibrinogen is <1g/litre despite initial appropriate treatment with FFP, which is a rich source of clotting factors including fibrinogen. In the presence of an abruption, cryoprecipitate should always be considered due to the associated low fibrinogen levels. The usual dose is 1 single pack per 7.5kg body weight. This would equate to 2 pooled packs (10 single packs) for most adult patients. Allow 30 minutes for thawing. Assess the response to cryoprecipitate by repeating a coagulation screen 30-60 minutes after the blood components have been given. Depending on the results, further blood components may be needed.

In case of severe bleeding the following drugs to consider **after discussion with the Consultant haematologist:**

- Vitamin K 10mg given slowly iv.
- IV tranexamic acid (Cyclokapron) 1g every 8 hours (iv or oral)

Recombinant Factor VIIa (Novoseven)

If bleeding continues despite surgical intervention and attempts to correct coagulopathies using the aforementioned blood components plus tranexamic acid, Novoseven should be considered after discussion with the on call haematologist. Refer to separate SUHT guideline on recombinant factor VIIa. It is important to note that Novoseven is unlikely to work if the platelet count is < 50x 10^9/litre, fibrinogen is < 0.5g/litre and the pH is < 7.2. The

initial dose would be 90 micrograms/kg. Novoseven is available in 1, 2 and 5mg vial size doses. It is recommended to round up to the nearest whole vial dose. If bleeding continues it is essential that every possible effort has been made to raise the platelet count to 50 ≥ 10^9/litre and the fibrinogen concentration to at least 0.5g/litre but ideally 1g/litre before giving further Novoseven. Further Novoseven can be given after 1-2 hours at a dose of 120 micrograms/kg but if bleeding persists after two doses, further Novoseven is unlikely to be of benefit. Tranexamic acid is useful in addition to Novoseven in order to stabilise the clot.

7. INTRAOPERATIVE CELL SALVAGE (ICS)

ICS is being increasingly implemented in obstetrics reducing the use of donated red blood cells and being potentially life-saving in women who refuse blood transfusion, such as Jehovah's witnesses, but who may agree to autologous cell salvage. Acceptance may be conditional on assuring continuity of the circuit with the patient's circulation. Cell salvage only conserves red blood cells, not platelets or clotting factors, so it will not prevent or correct coagulopathy. A cell saver with a leucocyte depletion filter is used with separate suction for amniotic fluid and blood salvage to minimise amniotic fluid contamination. Theatre staff need to be appropriately trained in the use of ICS and it is currently available at PAH for suitable elective Caesarean sections by prior arrangement. Such cases include women who refuse blood transfusion, placenta praevias and large fibroids. Consider the potential use of ICS in high risk emergency cases. Estimating blood loss can be more difficult when ICS is used and careful clinical assessment of the woman's haemodynamic staus is required by the anaesthetist, supplemented by serial haemacues. To prevent sensitisation in women who are Rhesus D negative the standard 1500 units anti-D is given, with a Kleihauer performed one hour after cell salvage has finished to determine whether further anti-D is required.

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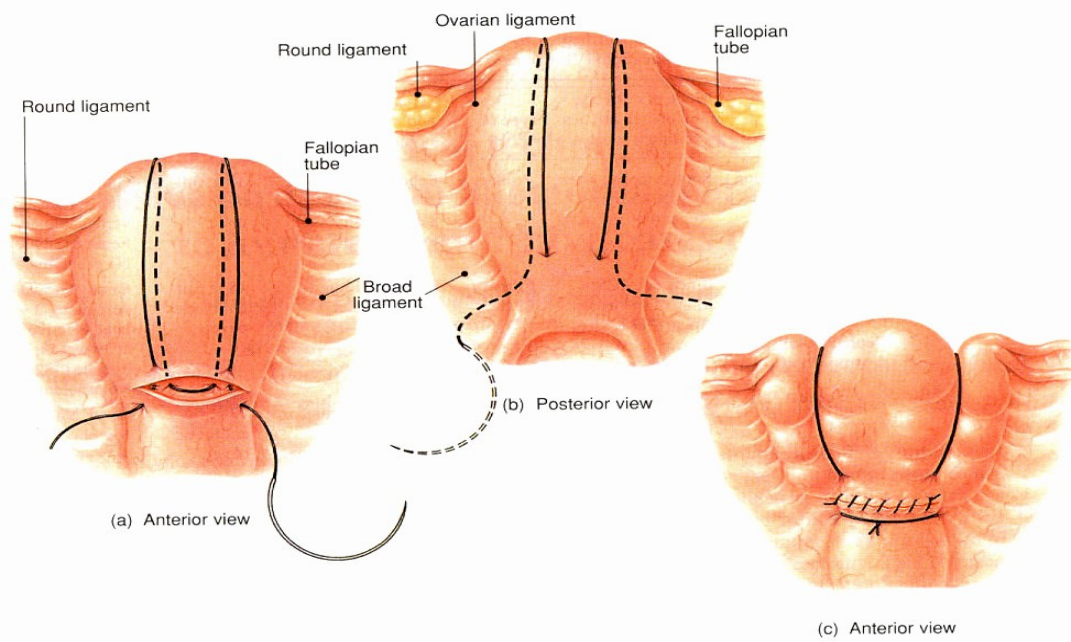
8. MANAGEMENT OF SECONDARY PPH

- This is usually due to retained products of conception (RPOC) or infection.
- The diagnosis of retained products is clinical and an ultrasound scan is rarely helpful (see below). Evacuation of the uterus is indicated if the bleeding is heavy or if the uterus is bulky with an open cervix. Intravenous antibiotics should be given prior to surgical evacuation.
- If the clinical picture is consistent with endometritis and the bleeding is not heavy, commence oral antibiotics (usually co-amoxiclav) and review. Only if there are clinical signs of septicaemia are iv antibiotics necessary. Discussion with a microbiologist may be beneficial in this situation.
- In the case of repeated presentation in the postpartum period with abnormal bleeding, an SPR should review and an ultrasound scan should be considered even in the presence of a

closed cervix to exclude RPOC.

9. Figure 1 B Lynch Suture (No 1 vicryl W9289)

B-Lynch et al 1997



10. Figure 2: Parallel vertical compression sutures for placenta praevia/accreta
Hwu et al 2005

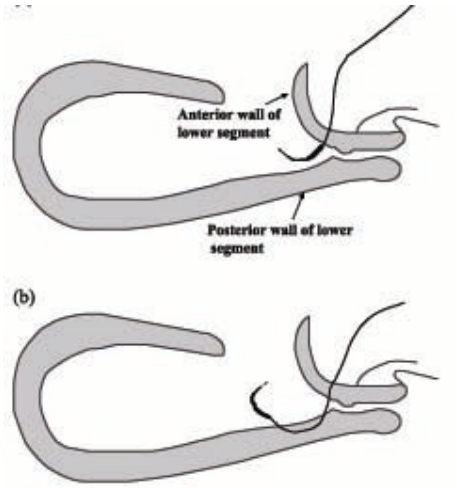


Fig. 1. (a) The needle is placed through the anterior wall of the lower segment. (b) From inside the uterine cavity, the stitch is placed in the middle layer of the posterior wall of the lower segment.

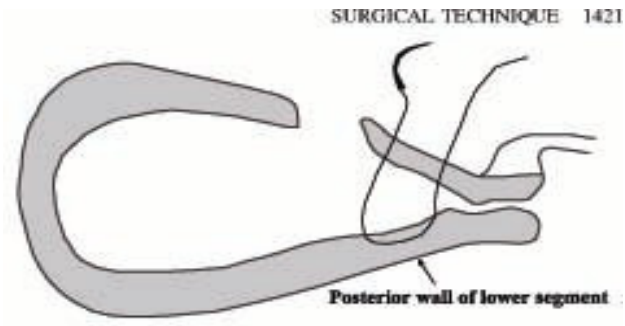


Fig. 2. The suture is pulled from back to front through the uterine cavity and anterior wall of the lower segment.

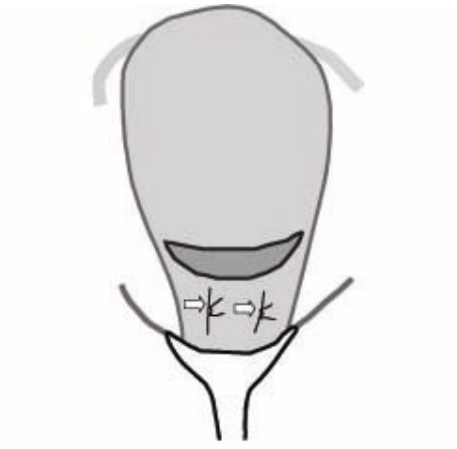


Fig. 3. Front view of the anterior lower segment after the knots (white arrow) are tied.

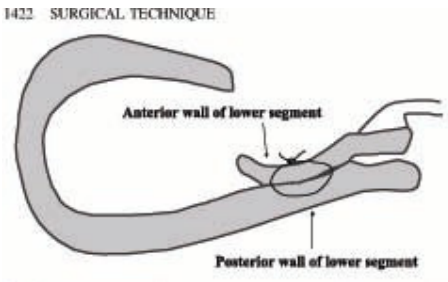


Fig. 4. The knots are tied to compress the anterior and posterior walls of the lower segment.

11. Documentation

Observations Should be made as contemporaneously as possible and a "scribe" appointed to do this. A MEOWS chart and fluid balance chart should be used to document observations. All original documentation, if not made on the appropriate chart, should be filed in the records. Any entries made after the event should be timed and dated and clearly identify the time period referred to.

Actions and drugs given Should be documented on the Postpartum Documentation Record or "drills" sheet in Appendix 2, which should be filed in the records afterwards

Transfer It is important that the following are documented as a minimum:

- times of telephone calls
- who the call is made to
- the time the ambulance arrives and departs, and when it arrives at the Princess Anne Hospital.
- brief content and timing of any follow up calls - The latter is especially important if any untoward delay is experienced.
- communication with the midwife in charge of the Labour Ward explanation and reassurance to the woman and her companions

12. Review plan for this document – Monitoring compliance and effectiveness

Audit Plan

Southampton NHS
University Hospitals NHS Trust

ADDRESSOGRAPH

CASES ARE DESCRIBED AS: POSTPARTUM HAEMORRHAGE is described as all blood losses over 500 ml

FREQUENCY DESCRIBED AS: Continuous audit in this criterion is described as on individual occurrences of all cases 2000mls or when there were other related extraordinary details.

PROCESS DESCRIBED AS: For methodology – Review of Health Care records by the daily labour ward Clinical Events Review Group on a case by case basis

REPORT TO: Intrapartum Care Committee (ICC)

DISEMINATION OF LESSONS LEARNT: Will be disseminated ICC the education & risk teams. These teams will disseminate through appropriate forums

METHODOLOGY: 1 By review of Health Care records of all of the following minimum requirements using an audit tool :

1. Documentation of blood loss and identification of haemorrhage as per maternity services definition
2. Were there any apparent difficulties with communication between relevant clinicians including
    - Consultant Obstetrician
    - Consultant Anaesthetist
    - Haematologist
    - Blood transfusion personnel
    - Labour ward co-ordinator
    - Porters
3. Documentation of management plan
4. Documentation of maternal decision to decline blood products in intrapartum narrative appropriately
5. Documentation of intraoperative cell salvage, if appropriate
6. Documentation of use of interventional radiology, if appropriate
7. Appropriately trained clinicians in attendance (As per the Training Needs Analysis)

- Was the blood loss confirmed as more than 2000mls or were there other extraordinary other details

YES ☐ NO ☐ Is Action Plan and/or Monitoring required YES/NO

- Documented lines of communication between the consultant obstetrician, consultant anaesthetist, haematologist, blood transfusion personnel and labour ward coordinator

YES ☐ NO ☐ Is Action Plan and/or Monitoring required YES/NO

- Clear plan of management documented in the Health care records

YES ☐ NO ☐ Is Action Plan and/or Monitoring required YES/NO

- Is there clear documentation that the porter was contacted

YES ☐ NO ☐ Is Action Plan and/or Monitoring required YES/NO

- Documentation of an individual management plan in the health records of women who decline blood products

YES ☐ NO ☐ Is Action Plan and/or Monitoring required YES/NO

- IF intraoperative cell salvage was used in this case were there any problems or difficulties?

YES ☐ NO ☐ Is Action Plan and/or Monitoring required YES/NO

- If interventional radiology used in this case were any problems or difficulties?

YES ☐ NO ☐ Is Action Plan and/or Monitoring required YES/NO

- Was there appropriately trained staff in attendance

YES ☐ NO ☐ Is Action Plan and/or Monitoring required YES/NO

Action plans to be reported and monitored by the ICC meeting

13. Arrangements for review of the policy

This guideline will be reviewed every three years or as clinically indicated.

14. References

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RCOG Green Top Guideline No.52: Prevention and management of postpartum haemorrhage May 2009.

Appendix 1: Imaging and management of placenta praevia

	CLINICAL SCENARIO	IMAGING	RECOMMENDED MANAGEMENT RE INTERVENTIONAL RADIOLOGY (IR)
1	Anterior placenta praevia, No previous Caesarean	MRI, US FMED not recommended	Elective Caesarean IR on standby (aware of procedure but not "set up")
2	Anterior placenta praevia, Single previous Caesarean	MRI negative, US negative	Elective Caesarean IR on standby
3	Anterior placenta praevia Single previous Caesarean,	MRI or US (FMED) or both positive (ie significant concerns about accreta or other concerns)	Elective Caesarean IR present and set up for intervention, (IR details determined by clinical details)
4	Anterior placenta praevia more than 1 previous Caesarean,	MRI negative, US negative	Elective Caesarean IR on standby
5	Anterior placenta praevia more than 1 previous Caesarean,	MRI or US (FMED) or both positive (ie significant concerns about accreta or other concerns)	Elective Caesarean IR present and set up for intervention, (IR details determined by clinical details)
6	Placenta praevia not anterior, previous Caesarean (any number)	Specific imaging not recommended	Delivery details determined by other clinical details, usually deliver locally.
7	IOW (? other hospital) Anterior placenta praevia single previous Caesarean	MRI (done locally) negative, US negative	Deliver locally unless other additional concerns
8	IOW (? other hospital) Anterior placenta praevia single previous Caesarean,	MRI (done locally) or US (FMED) or both positive (ie significant concerns about accreta or other concerns)	Deliver Southampton Elective Caesarean IR present and set up for intervention, (IR details determined by clinical details)
9	IOW (? other hospital) Anterior placenta praevia more than 1 previous Caesarean		Deliver Southampton IR determined by imaging results as per previous examples

US FMED: Ultrasound scan in Fetal Medicine department

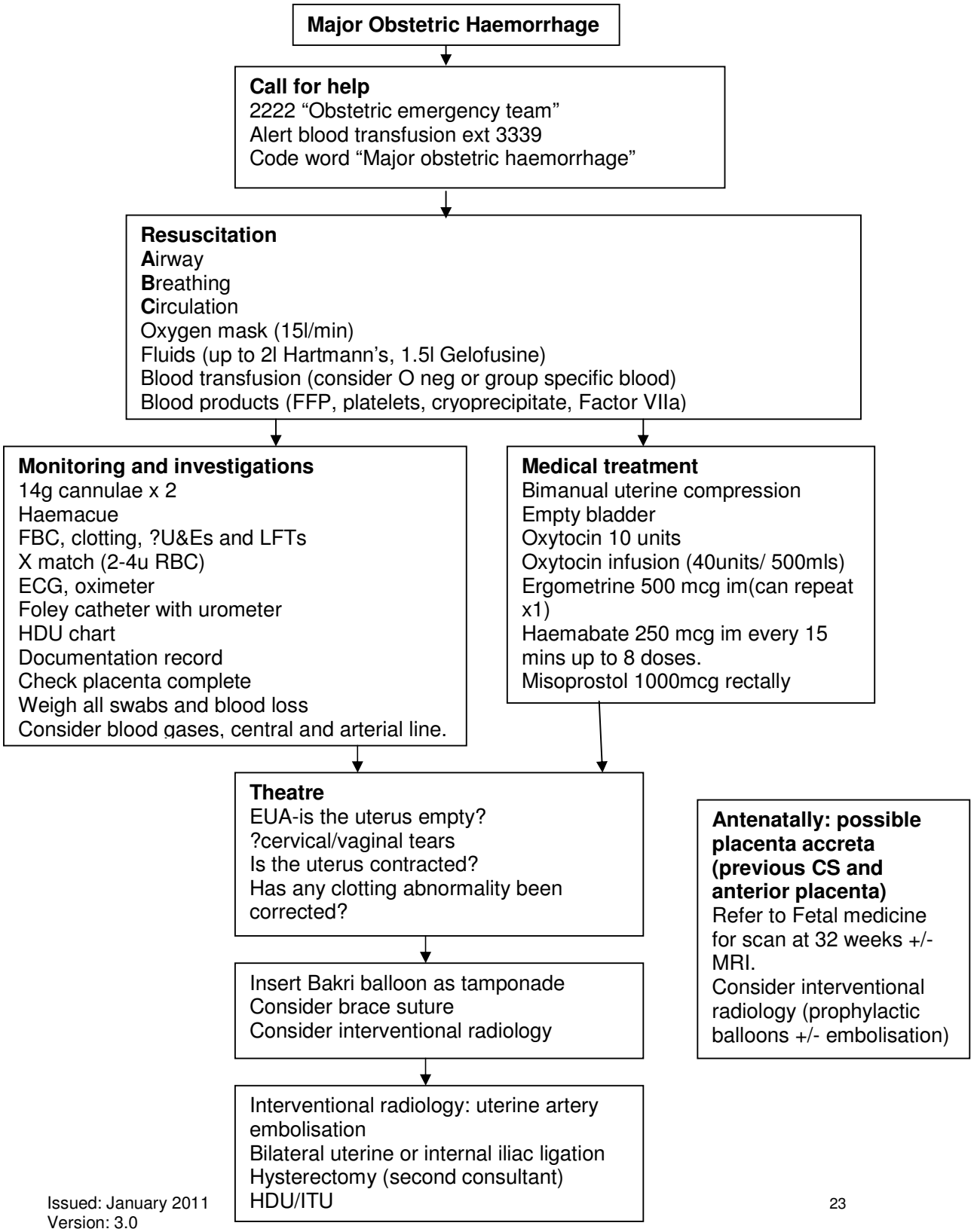
IOW: Isle of Wight

Appendix 2: POST PARTUM HAEMORRHAGE DOCUMENTATION RECORD

The following treatment measures may occur concurrently	
	TIME
Medical assistance called	
Medical assistance arrived (Emergency Trolley)	
Consider cause (Tone, Tissue, Trauma, Thrombin)	
Placenta in or out?	
	Please tick as appropriate
Contraction rubbed up (if placenta out)	
Resuscitation Assess mother/vital signs • A-B-C	
• Left tilt	
• Oxygen	
• IV cannulae 14g X 2	
• Bloods (Pink card) – FBC, clotting, fibrinogen, Gp & save/crossmatch	
• Fluids (1-2 litre of Hartmann's; 1.5 litres Gelofusin)	
• Haemacue	
The following options are available • Ensure 3rd stage drug given (Syntocinon 10iu IM or Syntometrine 1ml)	
• Syntocinon infusion (40iu in 500mls of normal saline at 125mls an hour)	
• Ergometrine (500mcg IM)	
• Haemabate (Max. 2mg (8x 250mcg IM at 15 min intervals)	
• Misoprostol (1000 mcg (5 tabs) PR)	
Urinary Catheter	
Bimanual compression	
Theatre	

Appendix 3:

Flow chart for management of major obstetric haemorrhage: resuscitation, monitoring, investigations and treatment should all occur simultaneously.



Appendix 4:

Lines of Communication