

Postpartum Haemorrhage - Bakri Balloon Tamponade



1. Purpose

This document outlines the procedure details for the use of balloon tamponade in managing primary major postpartum haemorrhage at the Women's.

This procedure has been developed to assist clinicians managing primary postpartum haemorrhage in order to reduce the morbidities and mortality associated with major blood loss after childbirth. This procedure is linked to the following guideline and procedures:

- [Postpartum Haemorrhage](#)
- [Postpartum Haemorrhage - Immediate and Ongoing Postnatal Care after Major PPH](#)
- [Postpartum Haemorrhage - Prostaglandin F2 Alpha.](#)

This procedure is used by permission from the South Australian Perinatal Practice Guidelines 'Balloon tamponade and uterine packing for major PPH' available at: <http://www.health.sa.gov.au/PPG/Default.aspx?tabid=204>

2. Definitions

Bakri balloon is a balloon tamponade indicated for women not responding to uterotonics and uterine massage. It is used to control haemorrhage due to uterine atony in the upper segment of the uterus and to control bleeding in the lower uterine segment secondary to placental implantation in the lower uterine segment.

3. Responsibilities

Obstetric and midwifery staff are responsible for recognising and promptly managing postpartum haemorrhage, for collaborating with other clinicians necessary for the woman's care, escalating to senior clinicians in cases of major PPH.

Senior medical staff (on-call Obstetric Consultant) are responsible for attending all cases of major PPH or on request.

Anaesthetic staff are responsible for providing and advising on clinical care in cases of major PPH when intensive monitoring and resuscitation are required.

The **Haematology Consultant** should be consulted early to prevent development of DIC; all cases of developing/actual coagulopathies; resuscitation with blood products required.

Other available specialists such as Gynae/Oncology Consultant should be consulted early when bleeding is intractable, where hysterectomy or ligation/embolisation of uterine arteries are being considered.

4. Procedure

Balloon tamponade is indicated for women not responding to uterotonics and uterine massage

- To control haemorrhage due to uterine atony in the upper segment of the uterus
- To control bleeding in the lower uterine segment secondary to placental implantation in the lower uterine segment, either where the placenta has been delivered complete but the placental site has not properly contracted or there is an abnormally adherent placenta in the lower uterine segment
- Before laparotomy to arrest haemorrhage in placenta accreta

4.1 Insertion of the Bakri Balloon

In the case of uterine atony unresponsive to uterotonics:

Ensure the uterus is clear of any retained placental fragments, blood clot, arterial bleeding or lacerations before inflating balloon.

Postpartum Haemorrhage - Bakri Balloon Tamponade



Insert balloon catheter under spinal, epidural or general anaesthesia in theatre.

Introduce vaginal speculum and using sponge forceps, insert balloon catheter transvaginally into the uterine cavity under guided ultrasound.

Once in place, inflate balloon with a volume of 100 - 300 mL of warm 0.9 % sodium chloride until enough counter pressure is exerted to stop bleeding from uterine sinuses (usually fill balloon until visible in the cervix lumen).

The test result is considered successful if there is no bleeding through the cervix or through the drainage channel of the balloon catheter.

If bleeding continues, the tamponade test is unsuccessful and surgery is needed.

Document amount of fluid in balloon.

Apply gentle traction to balloon and tape balloon to the woman's inner thigh to maintain tension.

In the case of bleeding from the lower uterine segment:

As above steps 1 & 2.

Insert balloon into lower segment with the tip of the catheter in the uterine cavity.

Inflate balloon under ultrasound guidance with up to 500 mL warm 0.9 % sodium chloride.

Pack the vagina to ensure the balloon stays in place.

Continue to observe the uterus by ultrasound scanner, the output from the Bakri catheter and the vaginal loss.

4.2 Management following insertion

The woman requires care in an area of increased nursing to patient ratio. At Parkville this will be CCU or ICU. **If the woman is suitable to remain at the Women's at Sandringham, she should be cared for in Birth Suite.**

If the balloon tamponade is for uterine atony, maintain the 40 U oxytocin / 1000 mL 0.9% sodium chloride infusion for 4 hours. The oxytocin infusion can then be discontinued unless there is a clinical indication to continue/recommence it.

Observations

Hourly urine output, blood pressure, pulse rate, respiratory rate, oxygen saturation, fundal height and vaginal blood loss (through the lumen of the catheter) until stable.

Temperature every two hours (every hour if blood transfusion in progress).

A strict fluid balance chart must be kept with input/output recordings made at least hourly. The estimated/weighed blood loss from the postpartum haemorrhage must be included to ensure this is accounted for when making decisions about fluid balance.

Antibiotics

Administer IV antibiotics (ampicillin [or amoxycillin] 2g IV initial dose then 1g IV every 4 hours, gentamicin 5 mg / kg IV as a single daily dose, metronidazole 500 mg IV every 12 hours) until after removal of the balloon catheter.

The Women's at Sandringham

If the woman is considered stable during a period of observation in Recovery within 2 hours of Bakri balloon insertion, she may remain at the Women's at Sandringham. During this period of observation, the patient's observations should not exceed the Recovery Room Clinical Review Criteria. Any coagulopathy should be documented to be improving as determined either by laboratory results or use of the ED iStat.

When a woman is transferred to theatre for post partum haemorrhage, the room on Birth suite should be held for her return from theatre. If the room is required due to Birth Suite activity, this must be communicated to Theatre on transfer.

The woman should be observed on birth suite for a period of 6 hours post insertion of Bakri balloon. During this time she should have urine output, blood pressure, pulse rate, temperature, respiratory rate, oxygen saturation, fundal height and vaginal blood loss (through the lumen of the catheter) documented every 2 hours. After this

Postpartum Haemorrhage - Bakri Balloon Tamponade



period she may be transferred to the ward (with the balloon in situ). An FBE and coagulation studies should be repeated in this observation period.

Transfer to Parkville may be requested by the obstetric consultant if they have any concerns regarding the woman's state in consultation with the anaesthetic team. Transfer to Parkville may also be requested if the woman is unable to be accommodated at the Women's at Sandringham postpartum due to either bed or staffing constraints.

4.3 Removal of Bakri balloon

Leave balloon tamponade in place for 8 to 24 hours to allow time for blood transfusion and coagulopathy correction^{3,5}.

Once parameters are within acceptable limits, deflate the balloon in two stages – withdraw half the 0.9 % sodium chloride, and if no significant bleeding after 30 minutes, withdraw the remaining volume to deflate and remove balloon.

Continue to observe the woman for any active bleeding².

Documentation

Time and date of Bakri balloon insertion and removal to be documented in surgical record.

5. Evaluation, monitoring and reporting of compliance to this procedure

Compliance to this procedure will be monitored, evaluated and reported through the notification of clinical incidents on VHIMS and by monthly clinical audit of PPHs greater than 1500mLs.

6. References

1. Ramanathan G, Arulkumaran S. Postpartum haemorrhage. *Current Obstet Gynaecol* 2006; 16: 6-13.
2. Condous GS, Arulkumaran S, Symonds I, Chapman R, Sinha A, Razvi K. The "Tamponade Test" in the management of postpartum hemorrhage. *Obstet Gynecol* 2003; 101: 767-772.
3. Lalonde A, Daviss BA, Acosta A, Herschderfer K. Postpartum hemorrhage today: ICM/FIGO initiative 2004 – 2006. *Int J Gynecology and Obstet* 2006; 94: 243-253.
4. Magann EF, Lanneau, GS. Third stage of labor. *Obstet Gynecol Clin N Am* 2005; 32: 323–332.
5. Vitthala S, Tsoumpou I, Anjum ZK, Aziz NA. Use of Bakri balloon in post-partum haemorrhage: A series of 15 cases. *ANZJOG* 2009; 49: 191-94.
6. South Australian Perinatal Practice Guidelines (2012) "Balloon tamponade and uterine packing for major PPH, available at: <http://www.health.sa.gov.au/PPG/Default.aspx?tabid=204>

7. Legislation related to this procedure

Not applicable.

8. Appendices

Not applicable.

Postpartum Haemorrhage - Bakri Balloon Tamponade



Please ensure that you adhere to the below disclaimer:

PGP Disclaimer Statement

The Royal Women's Hospital Clinical Guidelines present statements of 'Best Practice' based on thorough evaluation of evidence and are intended for health professionals only. For practitioners outside the Women's this material is made available in good faith as a resource for use by health professionals to draw on in developing their own protocols, guided by published medical evidence. In doing so, practitioners should themselves be familiar with the literature and make their own interpretations of it.

Whilst appreciable care has been taken in the preparation of clinical guidelines which appear on this web page, the Royal Women's Hospital provides these as a service only and does not warrant the accuracy of these guidelines. Any representation implied or expressed concerning the efficacy, appropriateness or suitability of any treatment or product is expressly negated

In view of the possibility of human error and / or advances in medical knowledge, the Royal Women's Hospital cannot and does not warrant that the information contained in the guidelines is in every respect accurate or complete. Accordingly, the Royal Women's Hospital will not be held responsible or liable for any errors or omissions that may be found in any of the information at this site.

You are encouraged to consult other sources in order to confirm the information contained in any of the guidelines and, in the event that medical treatment is required, to take professional, expert advice from a legally qualified and appropriately experienced medical practitioner.

NOTE: Care should be taken when printing any clinical guideline from this site. Updates to these guidelines will take place as necessary. It is therefore advised that regular visits to this site will be needed to access the most current version of these guidelines.