Uterusatonie – Mechanische und pharmakologische Therapie

G. Häusler

Univ. Frauenklinik Wien

Einteilung

- Primäre postpartale Blutung
  Tritt innerhalb der ersten 24h auf (4-6%)
  In mehr als 80% ist Uterusatonie Ursache der postpartalen Blutung
- Sekundäre postpartale Blutung
  Tritt zwischen 24h und 6-12 Wochen postpartum auf

Ätiologie der postpartalen Blutung

- **Primär**
  Uterusatonie
  Plazentareste
  Gerinnungsstörungen
  Inversio uteri
- **Sekundär**
  Subinvolution des Uterus
  Reste des Schwangerschaftsproduktes
  Infektionen
  Erbliche Gerinnungsdefekte

Epidemiologie

- In Österreich ist die postpartale Blutung mit 36% die häufigste, direkte Todesursache mütterlicher Sterbefälle in den Jahren 1996 bis 2004.
- Weltweit 140.000 Todesfälle/Jahr

Prevention of post-partum haemorrhage

Expectant versus active management

Expectant management

- Waiting for signs of placental separation
- Allowing the placenta to deliver spontaneously
- Aided by gravity or nipple stimulation

Active management

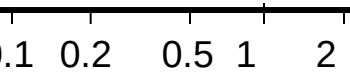
- Administration of a prophylactic oxytocic after delivery of the baby
- Early cord clamping and cutting
- Controlled cord traction of the umbilical cord

Active versus expectant management in the third stage of labour (review)

THE COCHRANE COLLABORATION®

- OUTCOME: PPH clinically estimated blood loss ≥500 ml

Study	Treatment n/N	Control n/N	RR (Fixed) 95% CI	Weight (%)	RR (Fixed) 95% CI
Abu Dhabi 1997	48/827	90/821		21.2	0.53 (0.38, 0.74)
Bristol 1988	50/846	152/849		35.6	0.33 (0.24, 0.45)
Dublin 1990	14/705	60/724		13.9	0.24 (0.14, 0.42)
Hinchingbrooke 1998	51/748	126/764		29.3	0.38 (0.32, 0.46)
Total	**3,126**	**3,158**		**100.0**	



Prendiville WJ, et al. Cochrane Database Syst Rev 2000;(3):CD000007

Prophylactic oxytocin for the third stage of labour

Amanda M Cotter, Amen Ness, Jorge E Tolosa
Cochrane Pregnancy and Childbirth Group., 2009

- Authors Conclusion:
  Oxytocin used routinely after birth can reduce blood loss, but more research is needed on possible adverse effects.

British Journal of Anaesthesia **98 (1):** 116–19 (2007)
doi:10.1093/bja/ael302 Advance Access publication December 2, 2006

BJA

Haemodynamic effects of oxytocin given as i.v. bolus or infusion on women undergoing Caesarean section

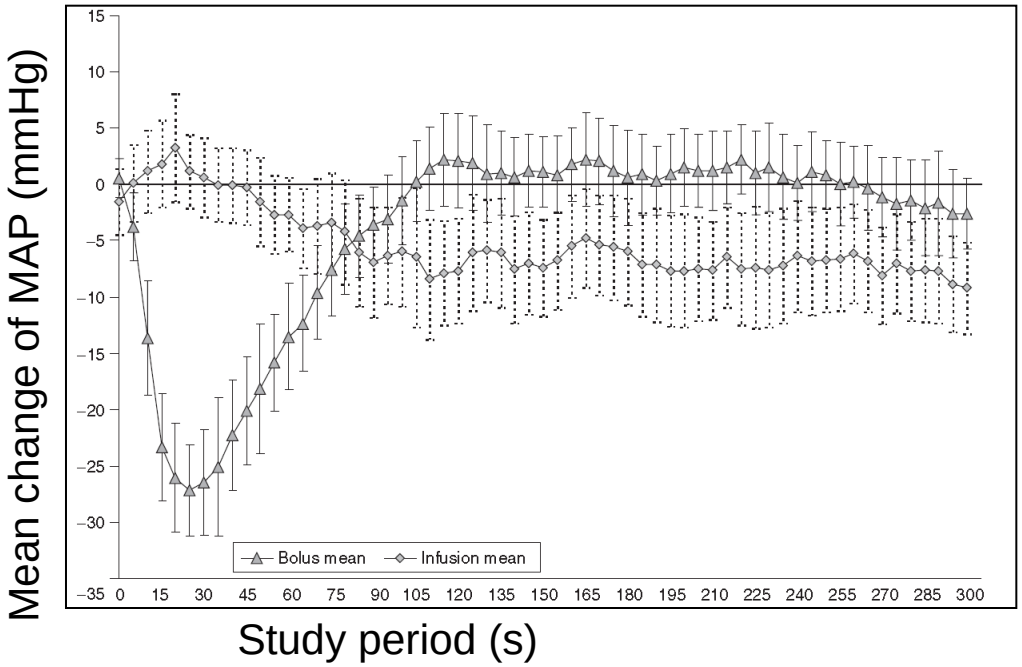
J. S. Thomas*, S. H. Koh and G. M. Cooper

Department of Anaesthesia, Birmingham Women's Hospital, Metchley Park Road, Edgbaston, Birmingham B15 2TG, UK

**Corresponding author: Department of Anaesthesia, Worcestershire Royal Hospital, Charles Hastings Way, Worcester WR5 1DD, UK. E-mail: jstgasman@btinternet.com*

- 30 women with elective caesarean section
- 5 u of oxytocin either as a bolus injection or an infusion over 5 min
- Heart rate and intra-arterial blood pressure recorded every 5 s

Mean arterial pressure (MAP) changes with oxytocin



Thomas JS, et al. Br J Anaesth 2007;98:116–119

Prophylactic use of ergot alkaloids in the third stage of labour

Tippawan Liabsuetrakul, Thanapan Choobun, Krantarat Peeyananjarassri, Q Monir Islam

Cochrane Pregnancy and Childbirth Group., 2009

- Authors Conclusion:
  So, while the ergot alkaloid group of drugs given IM is an option, there are other drugs, namely **oxytocin and prostaglandins** (which are assessed in other Cochrane reviews), **that can be used and may be preferable.**

Oxytocin agonists for preventing postpartum haemorrhage

Lin-Lin Su, Yap-Seng Chong
Cochrane Pregnancy and Childbirth Group, 2009

- Authors' conclusions:
  There is insufficient evidence that 100 micrograms of intravenous **carbetocin is as effective as oxytocin to prevent PPH**. In comparison to oxytocin, carbetocin was **associated with reduced need for additional uterotonic agents, and uterine massage**. There was limited comparative evidence on adverse events.

Prophylactic ergometrine-oxytocin versus oxytocin for the third stage of labour

McDonald S, Abbott J

Cochrane Pregnancy and Childbirth Group, 2009

- Authors' conclusions:
  The use of ergometrine-oxytocin as part of the routine active management of the third stage of labour appears to be associated with a small but statistically significant reduction in the risk of PPH when compared to oxytocin for blood loss of 500 ml or more. No statistically significant difference was observed between the groups for blood loss of 1000 ml or more.

A statistically significant difference was observed in the presence of maternal side-effects, including elevation of diastolic blood pressure, vomiting and nausea, associated with ergometrine-oxytocin use compared to oxytocin use.

Prostaglandins for preventing postpartum haemorrhage

Gülmezoglu A, Forma F

Cochrane Pregnancy and Childbirth Group, 2008

- Authors' conclusions:
  Misoprostol orally or sublingually at a dose of 600 mcg shows promising results when compared to placebo in reducing blood loss after delivery. The margin of benefit may be affected by whether other components of management of the third stage of labour are used or not.

Neither intramuscular prostaglandins nor misoprostol are preferable to conventional injectable uterotonics as part of the management of the third stage of labour especially for low-risk women.

Prevention of PPH

- **Vaginal birth:**
  - Active management
  - Favoured drug: Oxytocin alone
  - No prostaglandins (except when oxytocin/methylergometrin not available)
- **Caesarean section:**
  - Preventive drugs: Oxytocin or carbetocin
  - Oxytocin w/o bolus
  - Carbetocin has some advantages

Treatment for primary postpartum haemorrhage

Mousa H, Zarko A
Cochrane Pregnancy and Childbirth Group, 2009

- Authors' conclusions:
  There is insufficient evidence to show that the addition of misoprostol is superior to the combination of oxytocin and ergometrine alone for the treatment of primary PPH.

A Critical Review on the Use of Recombinant Factor VIIa in Life-Threatening Obstetric Postpartum Hemorrhage

Massimo Franchini, M.D.,[1] Massimo Franchi, M.D.,[2] Valentino Bergamini, M.D.,[2] Gian Luca Salvagno, M.D.,[3] Martina Montagnana, M.D.,[3] and Giuseppe Lippi, M.D.[3]

- Systematic review – 31 studies
- 118 cases of massive post-partum hemorrhage treated with recombinant factor VIIa (rFVIIa)
- **Effective in stopping or reducing bleeding in nearly 90%**
- First dose of rFVIIa 60–90 µg/kg, event. 2nd dose with 70–90 µg/kg

Franchini M, et al. Semin Thromb Hemost 2008;34:104–112

Anti-fibrinolytic agents in post partum haemorrhage: a systematic review.

Ferrer P, Roberts I

BMC Pregnancy Childbirth, 2009

Cyklokapron

- CONCLUSION: **Tranexamic acid may reduce blood loss in post partum haemorrhage**. However, the quality of the currently available evidence is poor. Adequately powered, high quality randomised controlled trials are needed.

Medical Management

Treatment:

- No evidence for a specific uterotonic or a combination
- Treatment of hypovolaemic shock
- Use activated Factor VIIa (Novo Seven)

Treatments for secondary postpartum haemorrhage

Alexander J, Thomas P
Cochrane Pregnancy and Childbirth Group, 2008

- Authors' conclusions:
  No information is available from randomised controlled trials to inform the management of women with secondary postpartum haemorrhage.

Uterine massage for preventing postpartum haemorrhage

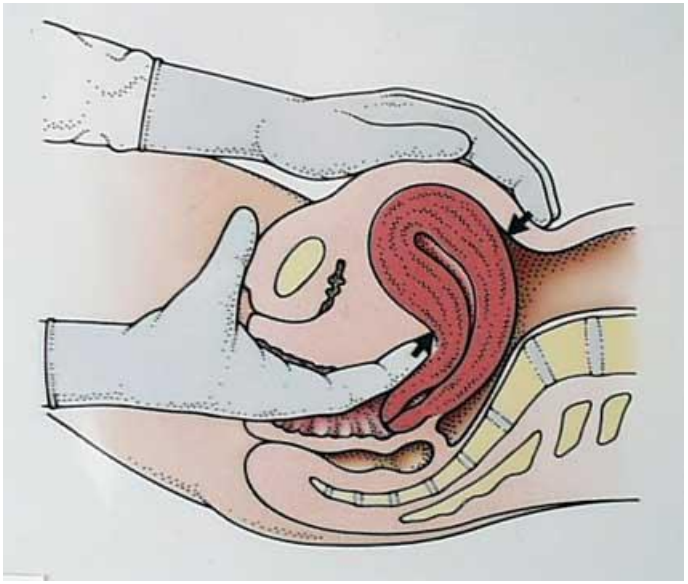
Hofmeyr G, Abdel-Aleem H
Cochrane Pregnancy and Childbirth Group, 2008

- Authors´Conclusions:
  Uterine massage after delivery of the placenta is advised to prevent PPH. However, due to the limitations of the one trial reviewed, trials with sufficient numbers to estimate the effects of sustained uterine massage with great precision, both with and in the absence of uterotonics, are needed.

Lower uterine segment compression for management of early postpartum hemorrhage after vaginal delivery at Charoenkrung Pracharak Hospital

Chantrapitak W, Srijanteok K

J Med Assoc Thai, 2009



64 cases

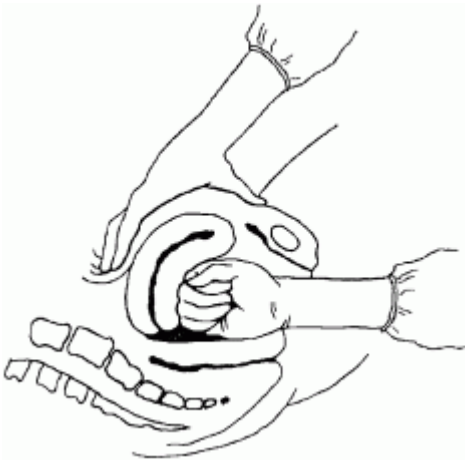
The addition of lower uterine compression resulted in 105 ml or 47% reduction of blood loss (225 +/- 401 ml vs. 120 +/- 211 ml; p = 0.026)

Kompression der Aorta

External aortic compression device: the first aid for postpartum hemorrhage control.

Soltan MH, Faragallaha MF

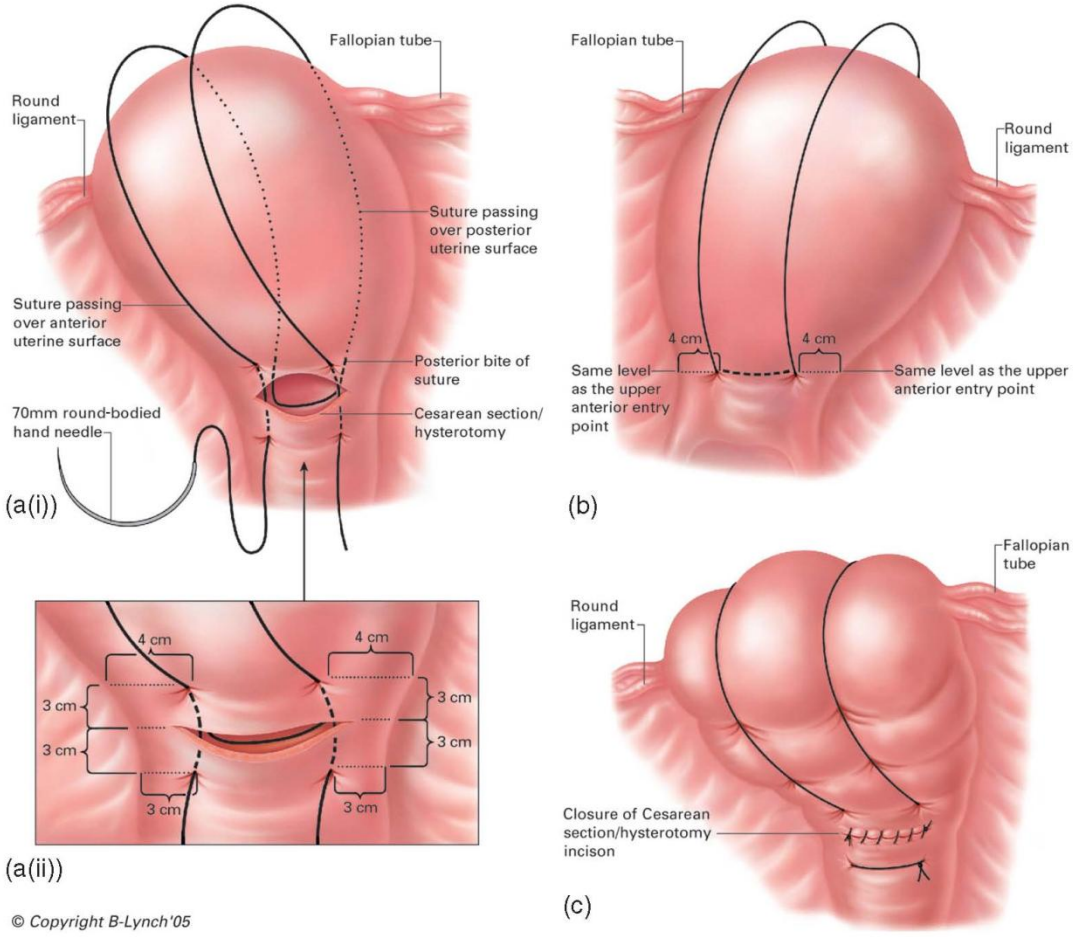
J Obstet Gynaecol Res, 2009



Time to stop bleeding was significantly shorter (36.8 +/- 23.4 vs 118.6 +/- 36.8 min)

No morbidities or mortality among those who received EACD compared with control women, among who had five surgical hysterectomies and one mortality.

B-Lynch Suture

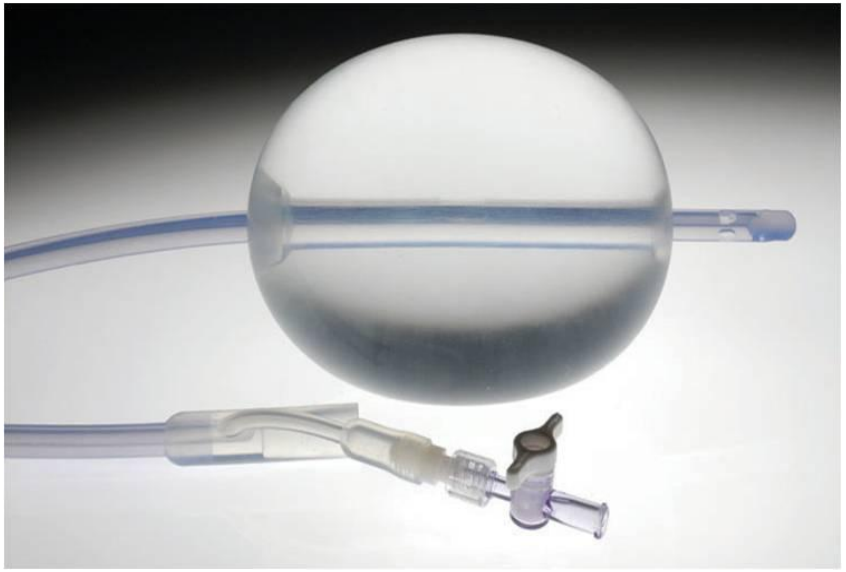


Bakri Postpartum Balloon

Balloon tamponade in the management of postpartum haemorrhage: a review

Georgiou C

BJOG, 2009

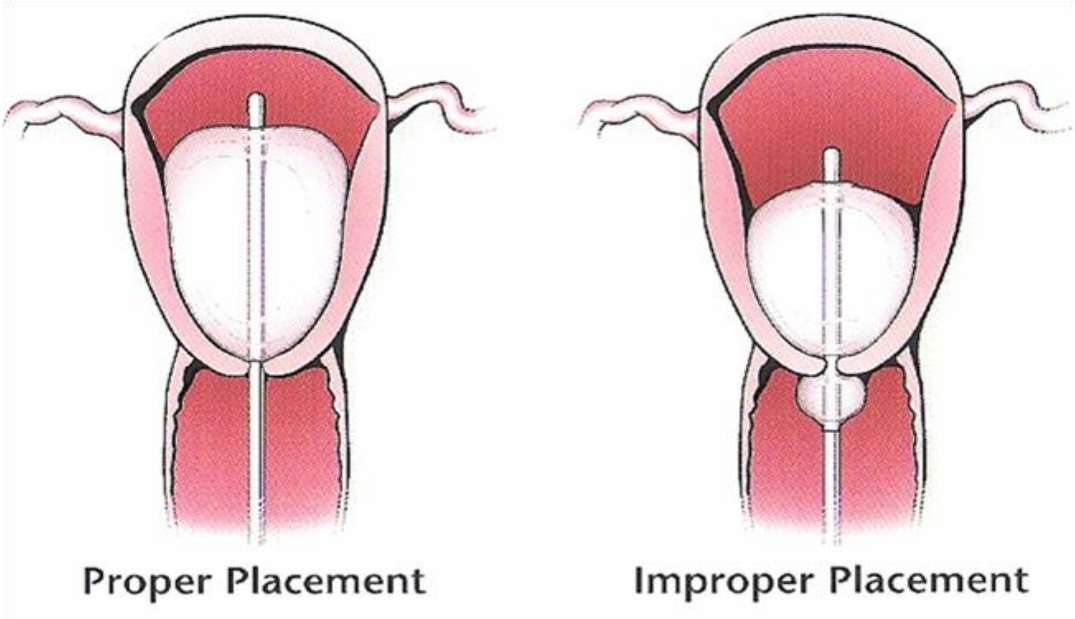


Bakri Postpartum Balloon

- Use of this device is intended to provide temporary control or reduction of postpartum uterine bleeding when conservative management is warranted.

- May be used after vaginal or cesarean deliveries.
- Should not be left indwelling for more than 24 hours.
- Patient monitoring is very important.

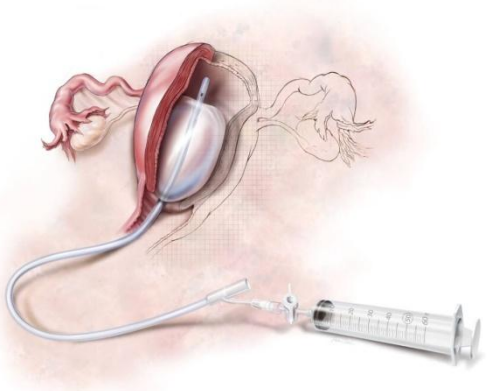
Balloon Inflation



- Place an indwelling urinary bladder Foley catheter at this time, if not already in place, to collect and monitor urine output.
- Never inflate with air, carbon dioxide or any other gas. Due to the compressibility of air, fluids are always safer.
- 500 cc is the maximum inflation volume.

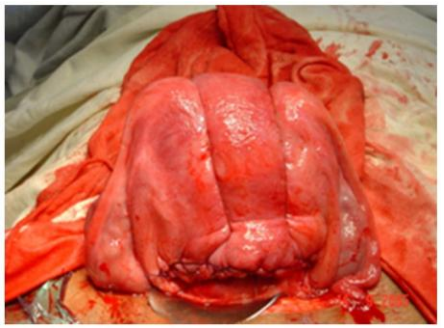
B-Lynch suture, intrauterine balloon, and endouterine hemostatic suture for the management of postpartum hemorrhage due to placenta previa accreta.

Adruini M, Epicoco G
Int J Gynaecol Obstet. 2009



Combined B-lynch suture with intrauterine balloon catheter triumphs over massive postpartum haemorrhage

D Danso, P Reginald
BJOG, 2002



Using recombinant activated factor VII, B-Lynch compression, and reversible embolization of the uterine arteries for treatment of severe conservatively intractable postpartum hemorrhage: new method for management of massive hemorrhage in cases of placenta increta.

Mechsner S, Baessler K
Fertil Steril, 2008

- This is a case of abnormal placenta adhesion with massive postpartum hemorrhage in which different conservative and operative treatments were combined to avoid a hysterectomy with loss of fertility and major psychological impact for the young mother.

Mechanische Methoden

Kompression

Danke