

Shok emorragico peripartum
Quali implicazioni medico-legali nella scelta della
strategia terapeutica
Prof Greco



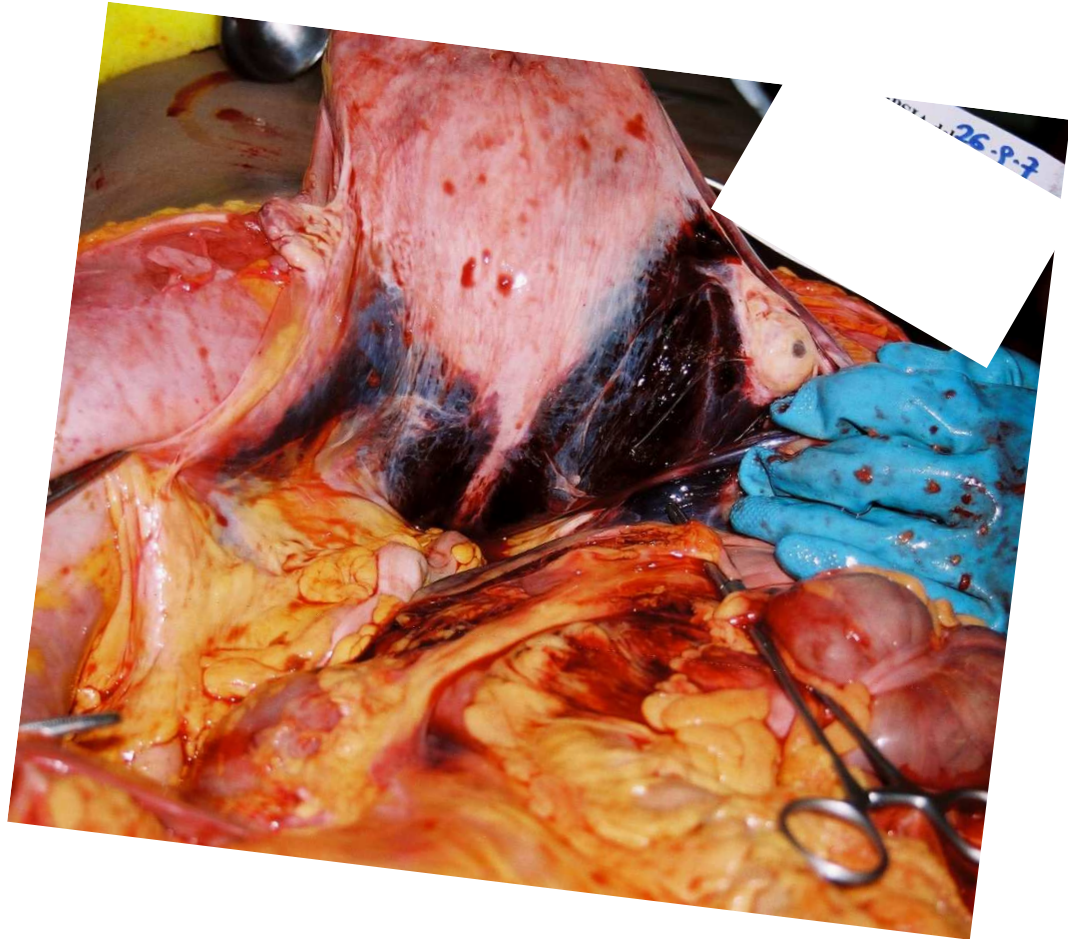
SHOCK EMORRAGICO DEL PERIPARTUM

EPIDEMIOLOGIA:

- nel 5-17 % dei PS
- nell' 1% dei casi si verifica una PPH massiva
- 3° causa di mortalità materna in gravidanza nei paesi sviluppati (59% dei decessi per emorragia post-partum è attribuibile ad un trattamento non ottimale)

MORTALITA' MATERNA:

- nei Paesi in via di sviluppo
= 1:1000 parti
- nei Paesi industrializzati
=3-5 casi su 1.000.000 parti



Emorragia post partum

MMR

La decima revisione dell'International Classification of Diseases (ICD-10) definisce "morte materna" la morte di una donna durante la gravidanza o entro 42 giorni dal suo termine, indipendentemente dalla sede o dalla durata della gravidanza, per qualsiasi causa correlata o aggravata dalla gravidanza o dal suo trattamento, ma non da cause accidentali o incidentali

Morte materna:

la morte di una donna durante la gravidanza o entro 42 giorni dal termine della gravidanza per qualsiasi causa correlata o aggravata dalla gravidanza o dal suo trattamento, ma non da cause accidentali o incidentali. Viene distinta in:

- diretta quando causata da complicazioni ostetriche della gravidanza, del parto e del puerperio per interventi, omissioni, trattamenti non corretti, o da una catena di eventi che possono risultare da ognuna delle cause precedenti;
- indiretta quando causata da malattie preesistenti o insorte durante la gravidanza, non dovute a cause ostetriche, ma aggravate dagli effetti fisiologici della gravidanza (es. patologia cardiaca, neoplasie e morti da malattie psichiatriche).

Morte tardiva:

la morte di una donna per cause ostetriche dirette o indirette oltre i 42 giorni ma entro un anno dal termine della gravidanza.

Morte correlata alla gravidanza:

la morte di una donna durante la gravidanza o entro 42 giorni dal suo termine, indipendentemente dalla causa di morte, include anche le morti accidentali e gli infortuni.

Hogan MC, Foreman KJ, Naghavi M, Ahn SY, Wang M, Makela SM, et al. Maternal mortality for 181 countries, 1980–2008: a systematic analysis of progress towards Millennium Development Goal 5. **Lancet** 2010;375:1609–23.

3.9 per 100 000 live births

ITALIA

16 per 100 000 live births

EUROPA



Maternal mortality in Italy: a record-linkage study

S Donati, S Senatore, A Ronconi, the Regional maternal mortality working group*

National Centre for Epidemiology, Surveillance, and Health Promotion, Istituto Superiore di Sanità-Italian National Institute of Health, Rome, Italy

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63% di SOTTOSTIMA

Maternal mortality in Italy: a record-linkage study

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Accepted 7 January 2011. Published Online 10 May

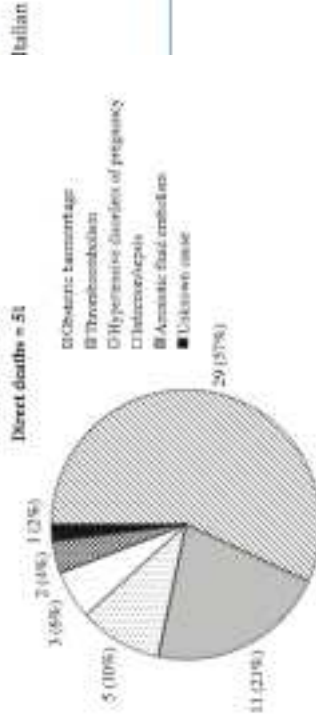


Figure 2. Distribution of causes of direct maternal deaths (542 days).

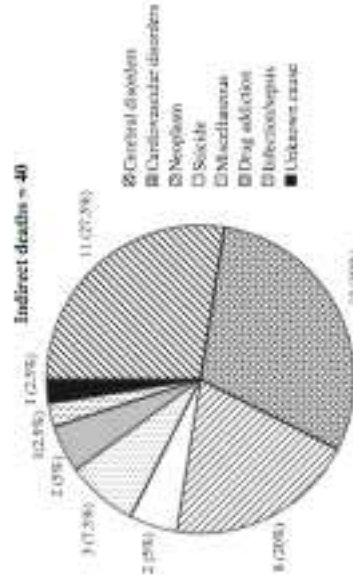


Figure 3. Distribution of causes of indirect maternal deaths (542 days).

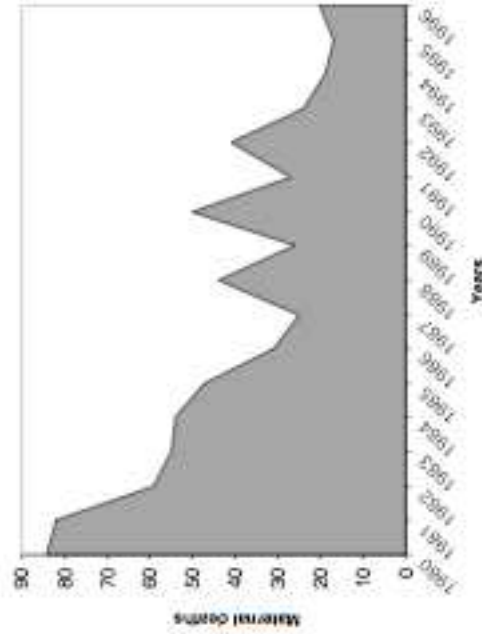


Maternal mortality in Italy, 1980–1996

Arabella Biaggi, Giancarlo Paradisi, Sergio Ferrazzani, Sara De Carolis,
Angela Lucchese, Alessandro Caruso*

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Received 11 December 2001; received in revised form 10 July 2003; accepted 15 October 2003



Causes of maternal death in Italy, from 1980–1996 (ISTAT)

Causes of death	n	Percentage	Mean	S.D.
Haemorrhage	164	23.2	9.7	23.2
Hypertension	145	20	8.5	20
Others labour and delivery complications	100	14.1	5.8	2.7
Abortion	87	12.3	5.1	3.3
Obstetric lesions	30	4.2	1.7	1.9
Pulmonary embolism	28	3.9	1.6	1.3
Puerperal infection	9	1.2	0.5	1.0
Others	142	21.1	-	-
Total	705	100	-	-

NEAR MISSES / Morbosità grave

casi in cui le donne sviluppano complicazioni potenzialmente fatali, durante la gravidanza, il parto o entro 42 giorni dal parto, alle quali sopravvivono o per buona sorte o per appropriata assistenza ospedaliera

9,5-16 casi ogni 1.000 parti

Pattinson RC, Hall M. Near misses: a useful adjunct to maternal death enquiries. Br Med Bull, 67 (1): 231-243, 2003.

153.

Indications and outcome for intensive care unit admission during puerperium.

Loverro G, Pansini V, Greco P, Vimercati A, Parisi AM, Selvaggi L.

Arch Gynecol Obstet. 2001 Nov;265(4):195-8.

PMID: 11789744

[PubMed - indexed for MEDLINE] Related citations

CLASSIFICAZIONE dei NEAR MISS

- criteri clinici basati su specifiche condizioni patologiche: pre-eclampsia grave, eclampsia, emorragia grave, sepsi, rottura uterina, sindrome HELLP (Lu *et al.*, 2005; Waterstone *et al.*, 2001; Zhang *et al.*, 2005);
 - criteri basati su specifiche procedure/interventi: ricovero in terapia intensiva, trasfusioni massive di sangue, isterectomia (Murphy, Charlett, 2002);
 - criteri basati su disfunzioni d'organo a livello sistemico: disfunzione/insufficienza cardiaca, epatica, renale, metabolica (Mantel *et al.*, 1998).
- disfunzioni di organo a livello sistemico;
 - intubazione prolungata (>12 ore);
 - ricovero in terapia intensiva;
 - intervento chirurgico;
 - trasfusione di sangue (>3 unità).

Criteri di Waterstone (et al., 2001)	Criteri di Mantel (et al., 1998)
- pre-eclampsia severa	- disfunzione cardiaca
- eclampsia	- disfunzione vascolare
- HELLP syndrome	- disfunzione immunologica
- emorragia severa	- disfunzione renale
- sepsi severa	- disfunzione epatica
- rottura uterina	- disfunzione metabolica
	- disfunzione della coagulazione
	- disfunzione cerebrale
	- ricovero in terapia intensiva
	- isterectomia d'urgenza
	- complicanze anestesologiche

Tabella 16. Morbosità materna grave (Emilia-Romagna, 2004-2005)

Anni	N parti di donne residenti*	Near miss	Tasso di morbosità per 1.000 parti
2004	36.609	93	2,5
2005	37.494	112	3,0
Totale	74.103	205	2,8

* fonte SDO di parto

Tabella 20. Condizioni ostetriche associate ai casi di near miss con ricovero in terapia intensiva (Emilia-Romagna, 2004-2005)

Cause	n.
Emorragia ostetrica	75
Iperensione/eclampsia	50
CID	20
Patologie cerebro/cardiovascolari	19
Infezioni	7
Tromboembolie	5
Neoplasie	3
Altre cause	17
Cause non note	9
Totale	205

MMR

NEAR MISSES

alias

MORTALITA'

MORBOSITA'

FROM BENCH TO BEDSIDE!





Quali sono i nostri punti critici?

emorragia post partum

Guidelines
by the Scottish Executive Committee of the
RCOG

- ✓ **COMMUNICATE**
- ✓ **RESUSCITATE**
- ✓ **MONITOR / INVESTIGATE**
- ✓ **STOP THE BLEEDING**

FIRST RESUSCITATE
THEN
STOP THE BLEEDING

- Uterine compression
- IV syntocinon 10 units
- IV ergometrine 0.5 mg
- Syntocinon infusion (30-40 units in 500 ml)
- Misoprostol 800 µg rectally
- Balloon tamponade
- Surgical management
 - Uterine artery ligation
 - Hypogastric artery ligation
 - B-Lynch technique
 - Selective arterial embolization
 - Hysterectomy

Misoprostol

Synthetic analog of prostaglandin E1

- Shelf life of several years if kept in their packets
- Low cost
- Can be administered orally, rectally, vaginally and by sublingual route
- Being selective for the PGE1 receptors: hence fewer systemic side-effects



emorragia post partum



Advance distribution of misoprostol for preventing and treating excessive blood loss after birth

Oladapo OT, Fawole B, Blum J, Abalos E

Published Online: February 15, 2012

There is no evidence from randomised or quasi-randomised trials on the benefits or risks of a strategy of advance misoprostol distribution for PPH prevention or treatment in non-facility births. In view of the increasing interest to scale up this strategy, there is an urgent need for large and well-designed randomised trials to evaluate its comparative benefits and risks.

Carbetocin for preventing postpartum haemorrhage (Review)

Su LL, Chong YS, Samuel M



This review includes 11 randomised controlled trials involving 2635 women. The trials compared carbetocin against either oxytocin or syntometrine given after delivery, vaginally or by caesarean section. The comparison between intramuscular carbetocin and oxytocin showed that there was no difference in the risk of heavy bleeding, but that women who received carbetocin were less likely to require other medications to produce uterine contractions following caesarean sections. Comparisons between carbetocin and syntometrine showed that women who received carbetocin had less blood loss compared to women who received syntometrine after vaginal delivery, and were much less likely to experience side effects such as nausea and vomiting. The incidence of hypertension at 30 and 60 minutes post delivery was also significantly lower in women who received carbetocin compared to those who received syntometrine. Five of the 11 studies were known to be supported by a pharmaceutical company.

MANAGEMENT

CONSERVATIVO vs AGGRESSIVO



TAMPONAMENTO UTERINO

SUTURE COMPRESSIVE

RX INTERVENTISTICA

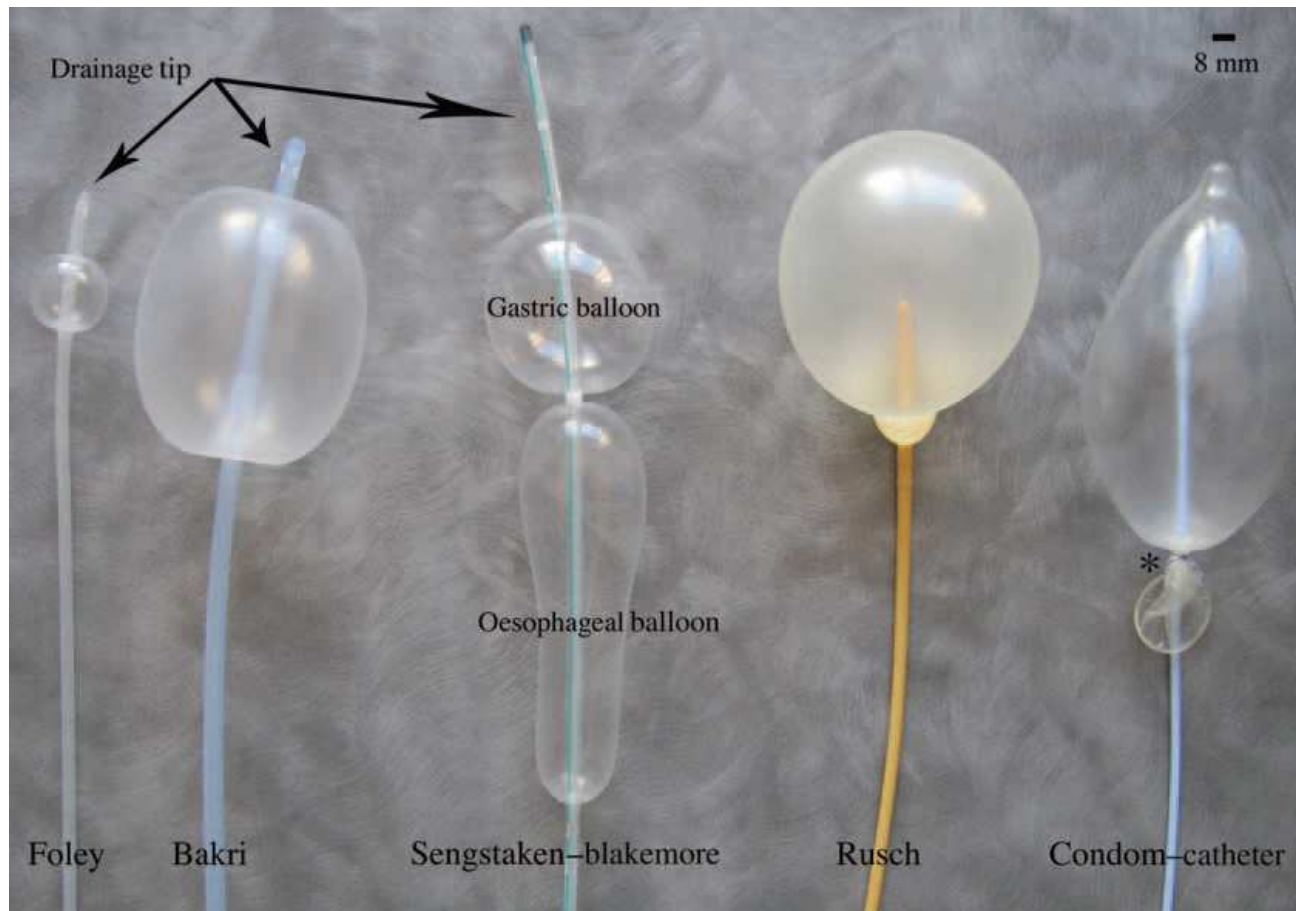
emorragia post partum

ISTERECTOMIA

UTERINE TAMPONADE

vs

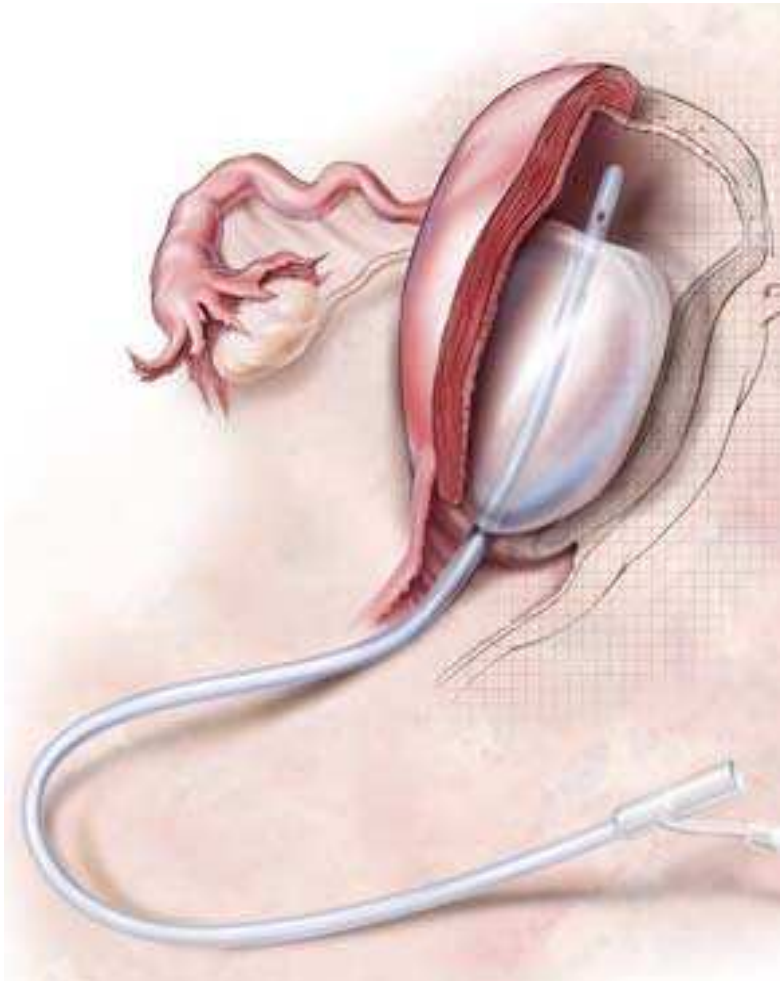
HYSTERECTOMY



emorragia post partum

UTERINE TAMPONADE vs HYSTERECTOMY

Balloon tamponade in the management of postpartum haemorrhage: a review



90% SUCCESS RATE

emorragia post partum

COMPRESSION SUTURES

Quick, safe and effective

- B-Lynch
- Modified B-Lynch sutures
- Combination of sutures

B-Lynch or Compression sutures

Authors	Year	Type of study	Method	No of women	Success Rates
B-Lynch et al	1997	Case series	B-Lynch	5	5/5 (100%)
Cho et al	2000	Case series	<u>Square sutures</u>	23	23/23 (100%)
Pal et al	2003	Case series	B-Lynch	6	6/6 (100%)
Smith et al	2003	Case series	B-Lynch	7	6/7 (85.7%)
Penney et al (Scottish Audit)	2003	Audit***	B-Lynch	10	9/10 (90%)
Penney at al (Scottish Audit)	2004	Audit***	B-Lynch	19	13/19 (68.4%)
Wohlmuth et al	2005	Case series	B-Lynch	12	11/12 (91.6%)
Pereira et al	2005	Case series	<u>Compressive sutures</u>	7	7/7 (100%)
Nelson et al	2006	Case series	<u>Modified B-Lynch sutures</u>	5	5/5 (100%)
Total				94	85/94 (90.4 %)

emorragia post partum

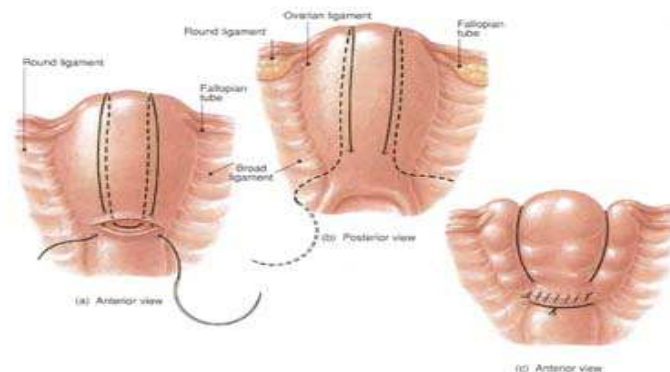
Uterine compression sutures for the management of severe postpartum hemorrhage.

Kayem G, Kurinczuk JJ, Alfirevic Z, Spark P, Brocklehurst P, Knight M; U.K. Obstetric Surveillance System (UKOSS).

National Perinatal Epidemiology Unit, University of Oxford, Oxford, United Kingdom.

rate of *failure*, leading to **hysterectomy**, was **25%** (95% CI, 19–31%)

a **delay of between 2 and 6 hours** from delivery to uterine suture compression (**42%** compared with 16% with delay less than 1 hour)



AOGS SHORT RESEARCH REPORT

Application of uterine compression suture in association with intrauterine balloon tamponade ('uterine sandwich') for postpartum hemorrhage

WAI YOONG¹, ALEXANDRA RIDOUT², MARIA MEMTSA¹, ANDREAS STAVROULIS¹,
MERNOOSH AREF-ADIB¹, ZEUDI RAMSAY-MARCELLE¹ & ABIODUN FAKOKUNDE¹

¹Department of Obstetrics and Gynecology, North Middlesex University Hospital, and ²University College London Medical School, London, UK

- Prospective observational study, evaluating the use of a “uterine sandwich technique” in women with unsuccessful medical treatment for PPH;
- 11 patients (10 cesarean section and 1 vaginal delivery) between 2007-2009;
- B-Lynch suture: 2 cases;
- Hayman’s technique: 9 cases.
- Bakri balloon in place for a median of 22 hr (median volume infused 300 ml)

REVIEW

Pelvic arterial ligations for severe post-partum hemorrhage. Indications and techniques

O. Morel^{a,*,b,c}, C. Malartic^c, J. Muhlstein^c, E. Gayat^d,
P. Judlin^c, P. Soyer^e, E. Barranger^a

Journal of Visceral Surgery (2011) 148, e95–e102

- There is currently no level of evidence sufficient to confirm the superiority of one treatment over another for severe PPH and management must be decided according to the obstetrical situation
- Conservative surgical techniques, arterial embolization and intrauterine balloon tamponade have comparable efficacy (primary success rate of 80-90%)
- For uterine atony without hemoperitoneum, embolization should be the preferred first line treatment whenever it is feasible.
- Management by interventional radiology is significantly less invasive than laparotomy and the results are satisfactory.
- Data in terms of future fertility are reassuring for both the procedures

Conservative Treatment for PPH

Method	No of Cases	Success rates
B-Lynch + other Compression sutures	94	90.4%
Arterial embolization	218	91%
Arterial ligation	264	83.7%
Uterine balloon tamponade	135	83.7%

Doumouchtsis S, Papageorghiou A, Arulkumaran S. Obstet Gyne Survey 2007

CARENZE “STRUTTURALI”

CARENZE “ORGANIZZATIVE”

MANCANZA DI COMUNICAZIONE



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COME SI PUO' MIGLIORARE?



1 STABILIRE LE REGOLE

2 IMPLEMENTARE

3 “DRILL”

ESERCITAZIONE

DISTOCIA

ATONIA UTERINA

DISTRESS FETALE ACUTO

PARTO OPERATIVO VAGINALE

CRISI ECLAMPTICA

