Lec2: PPH

obstetric ER

↑ Maternal Mortality & Morbidity

Primary vs Secondary PPH
Blood loss ≥ 500ml (vaginal delivery
Blood loss = 1000ml (c/s)
Blood loss ass. with Hypotension & tachycardia
↓ Haematocrit of 10% or more
Bleeding @ delivery necessitating Blood transfusion

} NB definitions

Signs & Sx

visible, sudden, large vol. of B/L
maternal collapse, dizziness, thirst
Pallor
↑ pulse, ↓ BP
↓ urine output
Atonic uterus.

Class of haemorrhagic shock				
	I	II	III	IV
Blood loss (mL)	Up to 750	750–1500	1500–2000	> 2000
Blood loss (% blood volume)	Up to 15	15–30	30–40	> 40
Pulse rate (per minute)	< 100	100–120	120–140	> 140
Blood pressure	Normal	Normal	Decreased	Decreased
Pulse pressure (mm Hg)	Normal or increased	Decreased	Decreased	Decreased
Respiratory rate (per minute)	14–20	20–30	30–40	> 35
Urine output (mL/hour)	> 30	20–30	5–15	Negligible
Central nervous system/ mental status	Slightly anxious	Mildly anxious	Anxious, confused	Confused, lethargic

Primary PPH:

Uterine causes: (90%)

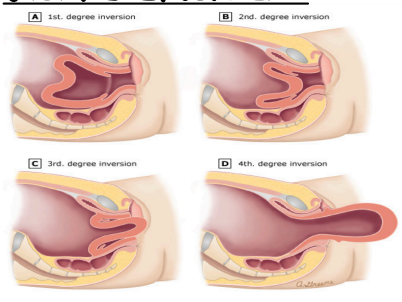
Uterine Atony:
- RPOC (Retained prod. of conception)
- Abn placentation
- overdistension
- Idiopathic

Contracted Uterus:
- cervical laceration
- uterine rupture.

Non-uterine: (10%)

Lower Genital tract Lacerations
Coagulopathy
Haematoma

Uterine Inversion:



Summary of causes (4T's)

Uterine Atony **(Tone)** Multiparity Multiple pregnancy Previous PPH Patient factors-age>40yrs, BMI>35, Asian ethnicity Prolonged labour Placenta praevia	Coagulopathy **(Thrombin)** Congenital bleeding disorders Acquired coagulopathies Anticoagulants Placental abruption Pre-eclampsia Sepsis Amniotic fluid embolism
Trauma/surgery **(Trauma)** Perineal or vaginal trauma Caesarean delivery Instrumental vaginal delivery Uterine rupture	Placenta **(Tissue)** Retained placenta Morbidly adherent placenta – accreta, percreta Placental abruption Placenta praevia

Secondary PPH

Endometritis
Haematoma
Trophoblastic neoplasia

Call-a-CAB
Resus
Control Bleeding
Dx → treat.

MxM of PPH

Early warning chart.

Begins with prevention:
- Routine Post partum / post-c/s Monitoring (use EWC)
- Routine Fe supplementation
- Anticipate / Be prepared
- Detect high % women
- Have available supplies
  - IV fluids (+) Blood transfusion services
  - cannulas
  - oxytocics (misoprostol)
  - int. tamponade
- prevent prolonged labour (use partogram)

(Active MxM in stage 3 labour)

Management after Vaginal Delivery:

is uterus contracted? → if not = atony / Retained prod. ⇒ contract uterus
is uterus empty? → if not = empty it
Trauma? → find site
is uterus there? → No = uterine inversion (correct stat)

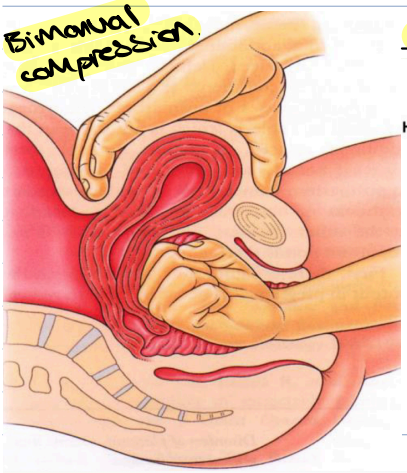
Uterine Atony:

Massage uterus / Bimanual compression
Give oxytocics (oxytocin / Ergometrine / prostaglandin)
Empty Bladder
Aortic compression (cut off uterine sa.)
ongoing Bleeding → Look for other cause
→ Uterine Balloon tamponade
→ EUA (Examination under Anesthesia) = Laparotomy

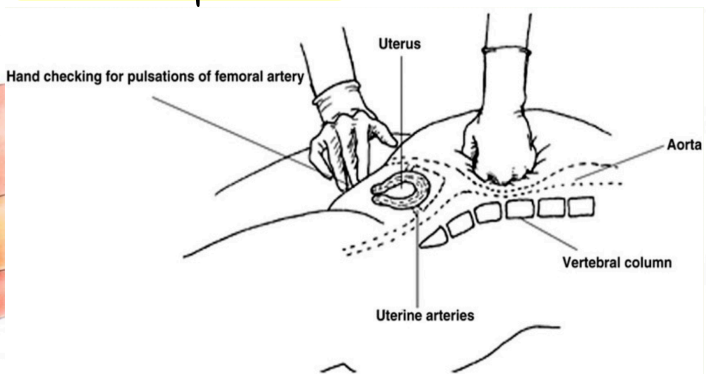
Do not delay Rx

Drug	Dose	Max dose	Further doses	Cautions
Oxytocin	IM; 10 units, IV; 2.5 units slowly	IV; infusion 20-40iu/ Litre	Avoid >3 litres of fluid containing oxytocin	IV bolus
Ergometrine	IM: 0.5mgs IV: 0.2mgs	Repeat dose after 15 minutes	Total 1.0mg	Hypertension, pre-eclampsia, heart disease
Syntometrine	1 amp (0.5 mg ergomentrine + 5iu oxytocin)	1 amp		Hypertension, pre-eclampsia, heart disease
Misoprostol	400-600 mcgms orally or per rectum			Pyrexia

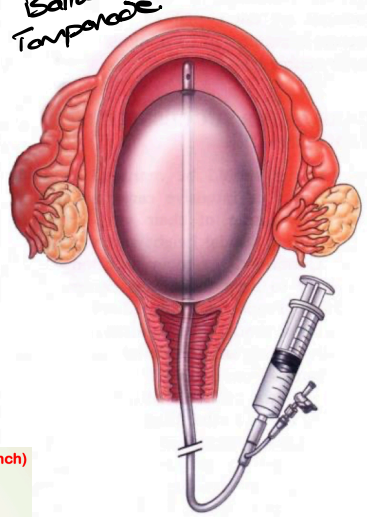
Bimanual compression:



Aortic compression:



Balloon Tamponade



Postpartum Haemorrhage (PPH)

Management

Prevention
(a) After vaginal delivery:
- 10u oxytocin IMI after delivery
- Controlled cord traction

(b) At risk of PPH:
Consider oxytocin Infusion or ergometrine in addition to above

Diagnosis
- Blood loss after birth >500ml or appears excessive

Resuscitate
- Rub up the uterus / bimanual compression
- Call for assistance
- Insert 2 large IV cannula
- Infusion of oxytocin 20u in 1l Ringers lactate
- Maintain BP with clear fluids / blood
- Urinary catheter
- Monitor BP / pulse / urine output
- Vasopressors

Placenta

Undelivered
- Repeat cord traction
- Manual removal of placenta

Complete

Incomplete
- Evacuation of uterus
- Digital exploration
- Ovum forceps and largest curette

Uterus

Soft
- Massage uterus & expel clots
- Continue oxytocin infusion
- Ergometrine[1] 0.5mg or syntometrine 1 amp IMI and
- Tranexamic acid[2] 1 gm iv (can repeat x1)
- Misoprostol 400 to 600µgm per rectum or sublingually
- Balloon tamponade

Firm
- Suture lacerations of perineum, vagina or cervix

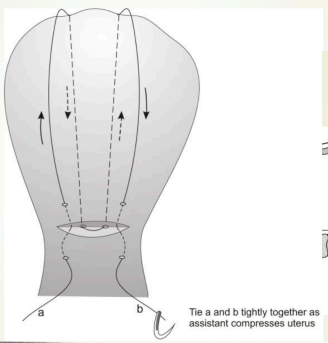
If ongoing bleeding:
- Examine in theatre[3]
- Explore for retained prod. and deep lacerations
- Balloon tamponade
- Laparotomy:
  - Aortic compression
  - Uterine brace sutures
  - Uterine artery ligation
  - Hysterectomy

Not felt
- Check vaginally for inverted uterus
- Replace immediately
- Hydrostatic reduction:
  - Saline infusion into vagina
  - Hold vulvae around tube or use rubber vacuum cup in vagina for seal

[1]*avoid if ↑ BP or cardiac*
[2]*avoid if VTE or artfiicial heart valves*

[3]In facilities with no theatre facility, patient will need emergency referral. To optimise condition consider:
- Balloon catheter tamponade
- NASG (if available)

Uterine compression suture – *uterine incision* (B-Lynch)



Tie a and b tightly together as assistant compresses uterus

Manual Removal of Placenta

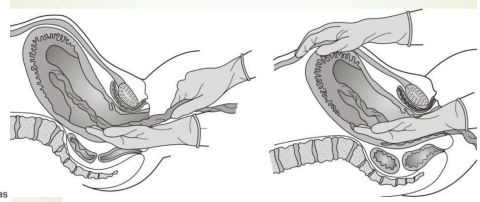
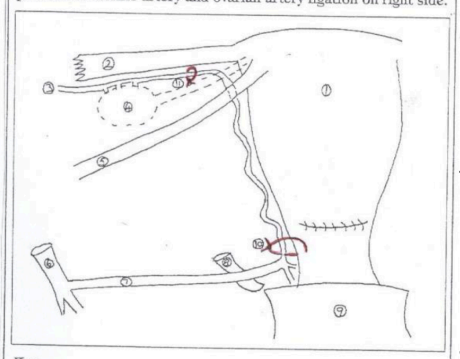


FIGURE 2 Diagrammatic view of the internal genital organs and position of uterine artery and ovarian artery ligation on right side.



Key:
1. Uterus
2. Fallopian tube
3. Ovarian artery
4. Ovary
5. Round ligament
6. Internal iliac artery
7. Uterine artery
8. Ureter
9. Retractor with bladder behind it
10. Uterine artery ligature
11. Ovarian artery ligature

complications of PPH

Anemia
Ant. pit. Ischemia (Ø oxytocin)
Blood transfusion
Death
Diffuseral coagulopathy
Fatigue
Myocardial Ischemia
Orthostatic Hypotension
Postpartum Depression