

# Post Partum Hemorrhage

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# Session highlights

- Introduction/Background
- Definition
- Prevention –AMTSL
- Causes
- Medical management
- Surgical management
- Emergency preparedness
- Summary

# Classification/definition

- **Traditional Definition**

- blood loss of  $> 500$  mL following vaginal delivery
- blood loss of  $> 1000$  mL following cesarean delivery

- **Functional Definition**

- any blood loss that has the potential to produce or produces hemodynamic instability

# Definition –time related

- Primary -that bleeding that occurs after delivery of the baby up to the first 24 hours
  - Most common cause is uterine atony
- Secondary-any bleeding after 24 hours up to the end of 6 weeks of puerperium
  - usually due to sepsis

# Background

- Severe bleeding is the single most significant cause of maternal death worldwide.
- More than half of all maternal deaths occur within 24 hours of delivery, most commonly from excessive bleeding. It is estimated that, worldwide, 140,000 women die of postpartum hemorrhage each year—one every 4 Minutes-In Kenya of all Maternal deaths about 34 % are due to PPH
- In addition to death, serious morbidity may follow postpartum hemorrhage.

# Background

- Sequelae include adult respiratory distress syndrome, coagulopathy, shock, loss of fertility, and pituitary necrosis (Sheehan syndrome).
- Although many risk factors have been associated with postpartum hemorrhage it often occurs without warning.
- All obstetric units and practitioners must have the facilities, personnel, and equipment in place to manage this emergency properly.
- Clinical drills to enhance the management of maternal hemorrhage are recommended

# WHO analysis of causes of maternal death: a systematic review

*Lancet 367: 1066-1074, 2006*

	<b>Africa</b>	<b>Asia</b>	<b>LAC</b>	<b>Developed countries</b>
<b>Data sets</b>	<b>8</b>	<b>11</b>	<b>10</b>	<b>5</b>
<b>Maternal deaths</b>	<b>4508</b>	<b>16089</b>	<b>11777</b>	<b>2823</b>
<b>Haemorrhage</b>	<b>33.9%</b> <b>(13.3-43.6)</b>	<b>30.8%</b> <b>(5.9-48.5)</b>	<b>20.8%</b> <b>(1.1-46.9)</b>	<b>13.4%</b> <b>(4.7-34.6)</b>
<b>Hypertension</b>	<b>9.1%</b> <b>(3.9-21.9)</b>	<b>9.1%</b> <b>(2.0-34.3)</b>	<b>25.7%</b> <b>(7.9-52.4)</b>	<b>16.1%</b> <b>(6.7-24.3)</b>
<b>Sepsis</b>	<b>9.7%</b> <b>(6.3-12.6)</b>	<b>11.6%</b> <b>(0.0-13.0)</b>	<b>7.7%</b> <b>(0.0-15.1)</b>	<b>2.1%</b> <b>(0.0-5.9)</b>

# Time from onset of complication to death

- PPH 2 h
- APH 12 h
- Ruptured uterus 1 d
- Eclampsia 2 d
- Obstructed labour 3 d
- Sepsis 6 d



# THE GOLDEN HOUR

- As more time elapses between the point of severe shock and the start of resuscitation, the percentage of surviving patients decreases
- The “Golden Hour” is the time in which resuscitation must begin to achieve maximum survival

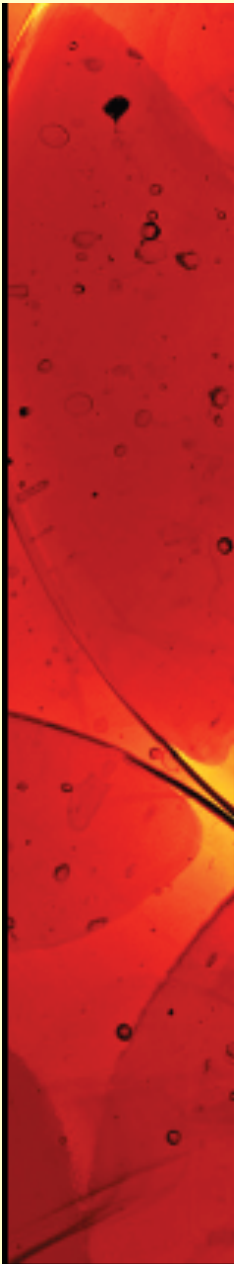
# THE GOLDEN HOUR

Probability of survival




Survival is related to severity and duration

- WHO recommendations for the Prevention of Postpartum Haemorrhage
- WHO recommendations on Treatment of PPH and retained placenta



WHO guidelines  
for the management of  
postpartum haemorrhage  
and retained placenta



# AMTSL

- STEPS OF AMSTL
- VIDEO SHOW

# Procedure for Active Management

- Within 1 minute of birth, give Oxytocin 10 IU IM OR 5 UNITS IV slowly
- Clamp and cut the cord 2-3 minutes after delivery
- Await a strong uterine contraction (2-3 minutes)
- Apply controlled cord traction while applying counter traction above pubic bone
- If placenta does not descend, stop traction and await next contraction
- After placental delivery, rub uterus fundus gently every 15 minutes for 1 hour and every 30 mins for next hour to ascertain it is contracted





# Etiology of Postpartum haemorrhage

- Tone - uterine atony (70%)
- Tissue - retained tissue/clots(20%)
- Trauma - laceration, rupture, inversion (10%)
- Thrombopathy – coagulopathy (1%)

# Diagnosis - Is this a PPH?

- observe vaginal loss
- express blood from vagina following C/S

## REMEMBER

- blood loss is consistently underestimated
- ongoing trickling can lead to significant blood loss
- blood loss is generally well tolerated to a point

# Management

- Emergency preparedness-recognition, response, defined roles, multidisciplinary approach
- Equipment –in labour room/theatre
- Protocols
- Skills
- Drills
- scenarios



# Diagnosis and management of PPH

- Shout (call) for help
- Wide bore cannula x2
- I/v fluids –Ringers lactate or Normal saline (and not dextran)
- Empty bladder
- Massage uterus
- Start uterotonics
- Look for cause of bleeding

# Clinical presentation and diagnosis

	<b>Degree of Shock</b>			
	<b>Compensation</b>	<b>Mild shock</b>	<b>Moderate shock</b>	<b>Severe shock</b>
<b>Blood loss</b>	<b>500-1000ml 10-15%</b>	<b>1000-1500ml 15-25%</b>	<b>1500-2000ml 25-35%</b>	<b>2000-3000ml 35-45%</b>
<b>Blood pressure change (systolic pressure)</b>	<b>None</b>	<b>Slight fall (80-100mmHg)</b>	<b>Marked fall (70-80mmHg)</b>	<b>Profound fall (50-70mmHg)</b>
<b>Signs and symptoms</b>	<b>Palpitations Dizziness Tachycardia</b>	<b>Weakness, Sweating, Tachycardia</b>	<b>Restlessness, Pallor, Oliguria.</b>	<b>Collapse, Hunger, Anuria</b>

# USE OF OXYTOCIC DRUGS

	<b>Oxytocin</b>	<b>Ergometrine/ Methyl- ergometrine</b>	<b>15-methyl Prostaglandin F<sub>2α</sub></b>	<b>Misoprostol</b>
<b>Dose and route</b>	IV: Infuse 20 units in 1 L IV fluids at 60 drops per minute IM: 10 units	IM or IV (slowly): 0.2 mg	IM: 0.25 mg	600 ugms Orally or Rectally
<b>Continuing dose</b>	IV: Infuse 20 units in 1 L IV fluids at 40 drops per minute	Repeat 0.2 mg IM after 15 minutes If required, give 0.2 mg IM or IV (slowly) every 4 hours	0.25 mg every 15 minutes	
<b>Maximum dose</b>	Not more than 3 L of IV fluids containing oxytocin	5 doses (Total 1.0 mg)	8 doses (Total 2 mg)	
<b>Precautions/ Contraindications</b>	Do not give as an IV bolus	Pre-eclampsia, hypertension, heart disease	Asthma	

# Management of uterine atony

- Massage of uterus
- Aortic artery compression
- Bimanual compression
- Continuing uterotonics
- Tamponade (condom balloon)
- EUA/ laparotomy
  - -B-Lynch suture
  - Artery ligation
  - Hysterectomy –sub or total.

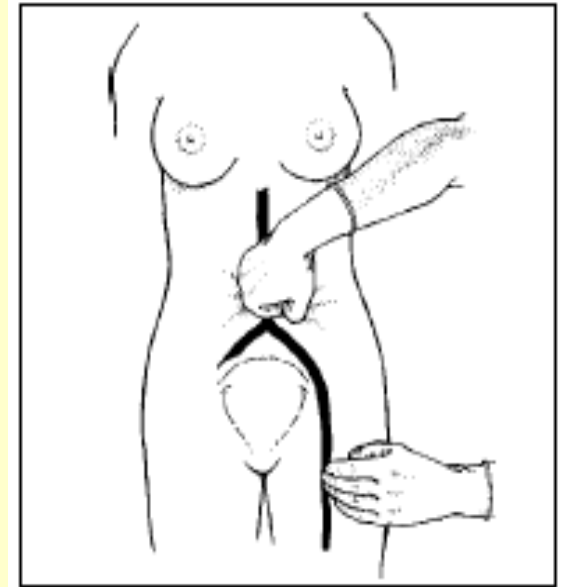
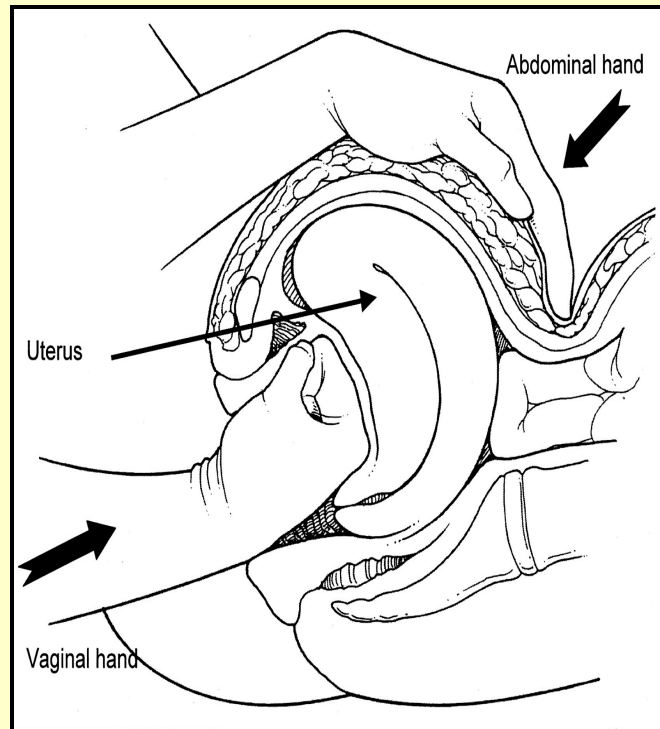
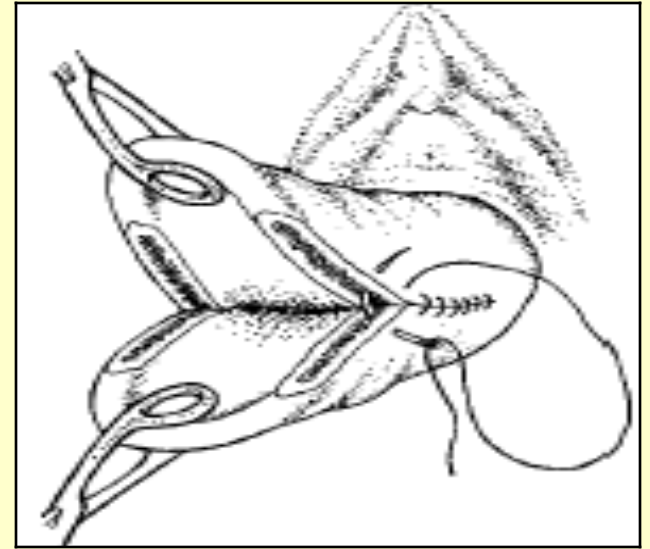
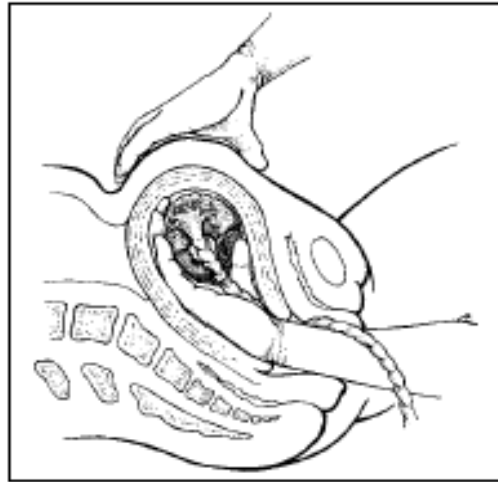
# Retained placenta and tears

- Uterotonics –not ergometrine (causes tetanic contractions)
- CCT
- Intra-umbilical injection of oxytocin
- Manual removal of placenta
- Repair of tears –method of examination and repair
- Abnormal placentation (accreta, percreta, increta)

# Cont....

- Uterine inversion –reduction
- Coagulopathy –blood
  - FFP
  - Cryoprecipitate
- For atony –continue massage, uterotonics, balloon tamponade examination in theatre, etc

# PROCEDURES



## *A Simple Solution for Postpartum Hemorrhage*

# **The SOS Bakri Tamponade Balloon Catheter**

- *Time-saving catheter; easy to place and monitor.*
- *Simplifies control of bleeding, potentially avoiding a hysterectomy.*
- *Rapidly achieves tamponade within uterine cavity.*
- *Order Number: J-SOS-100500*

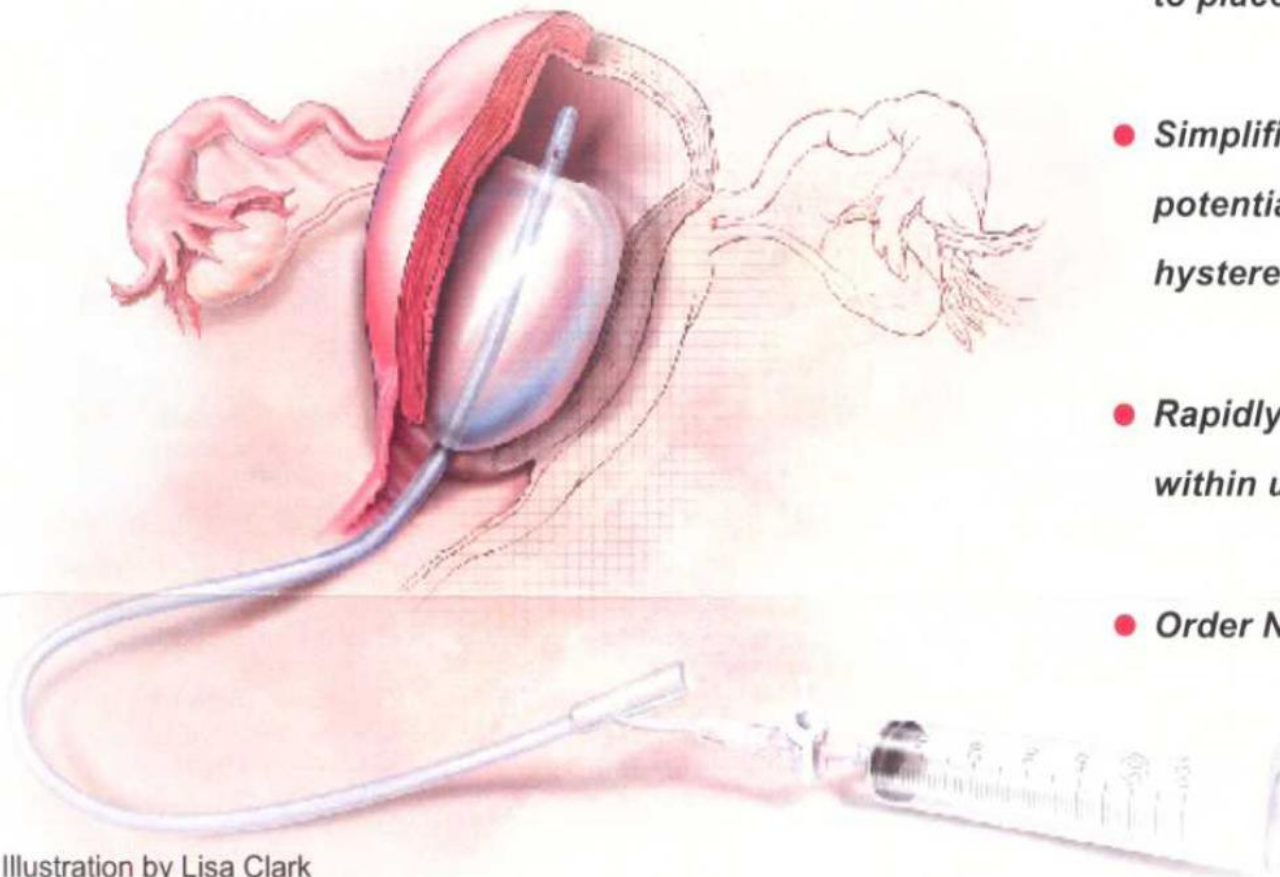


Illustration by Lisa Clark



# Procedure

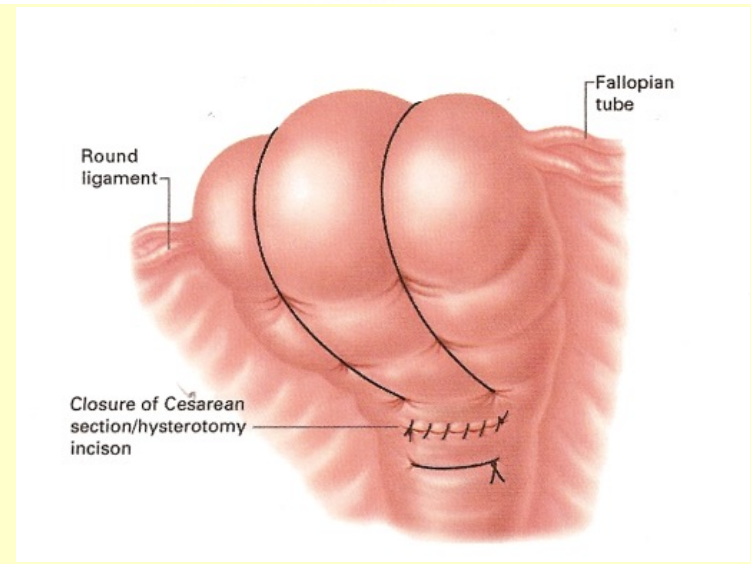
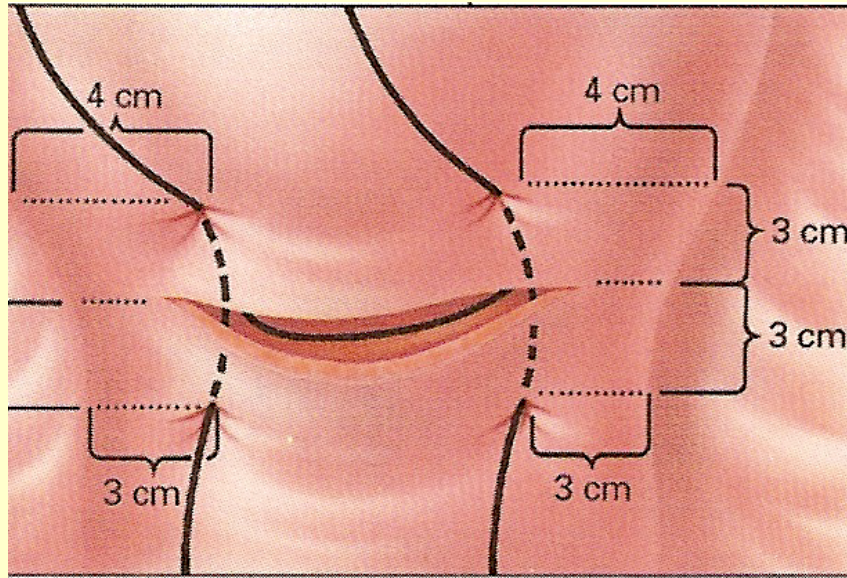
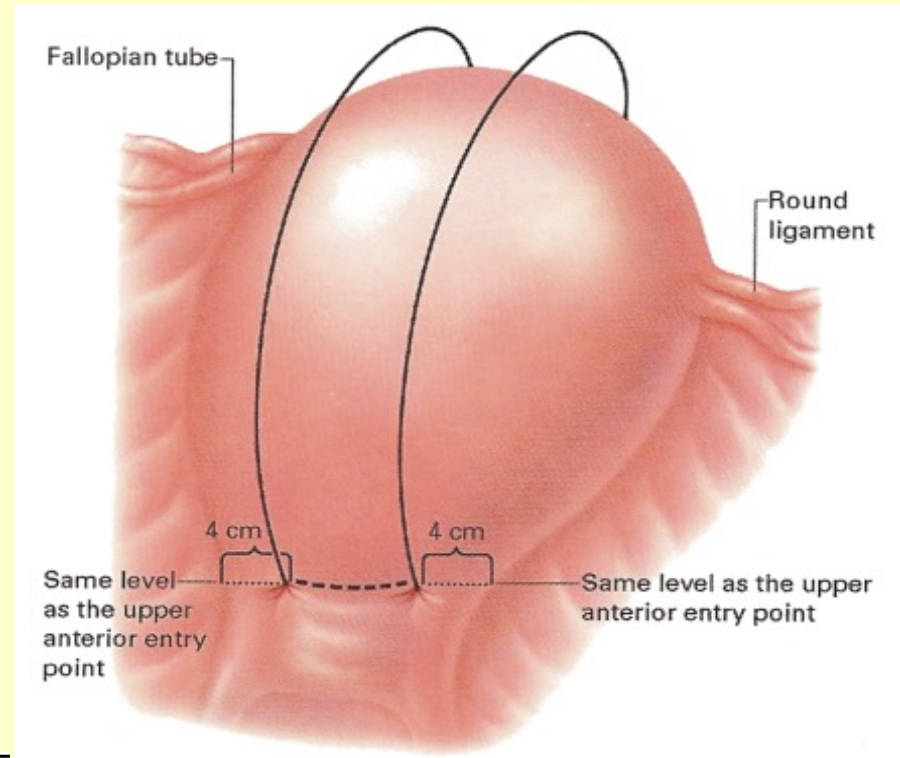
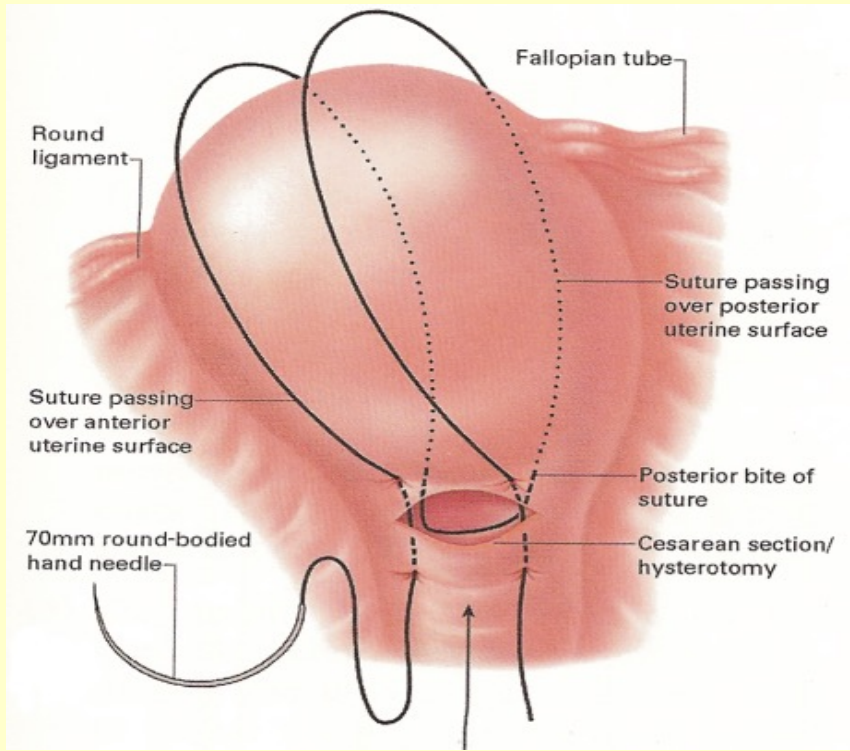
- A condom attached to a rubber catheter is introduced into the uterus under aseptic conditions
- Condom is inflated between 250 to 500ml normal saline
- When bleeding is reduced, stop further inflation and fold and tie outer end of the catheter to maintain pressure
- Continue oxytocin infusion for 24 hours
- Keep condom in uterine cavity for 24 hours, then deflate gradually over 2 hours and remove



# PPH - Aggressive Surgery

- Systolic BP < 70 mm Hg especially if there is no diastolic component
- Cold pale extremities/ pale conjunctiva
- Failure to raise BP despite infusion with crystalloids and blood
- Continuous blood loss despite medication
- Confused, coma, airhunger, ECG changes. Poor urinary output (takes time to establish)

# B-LYNCH PROCEDURE

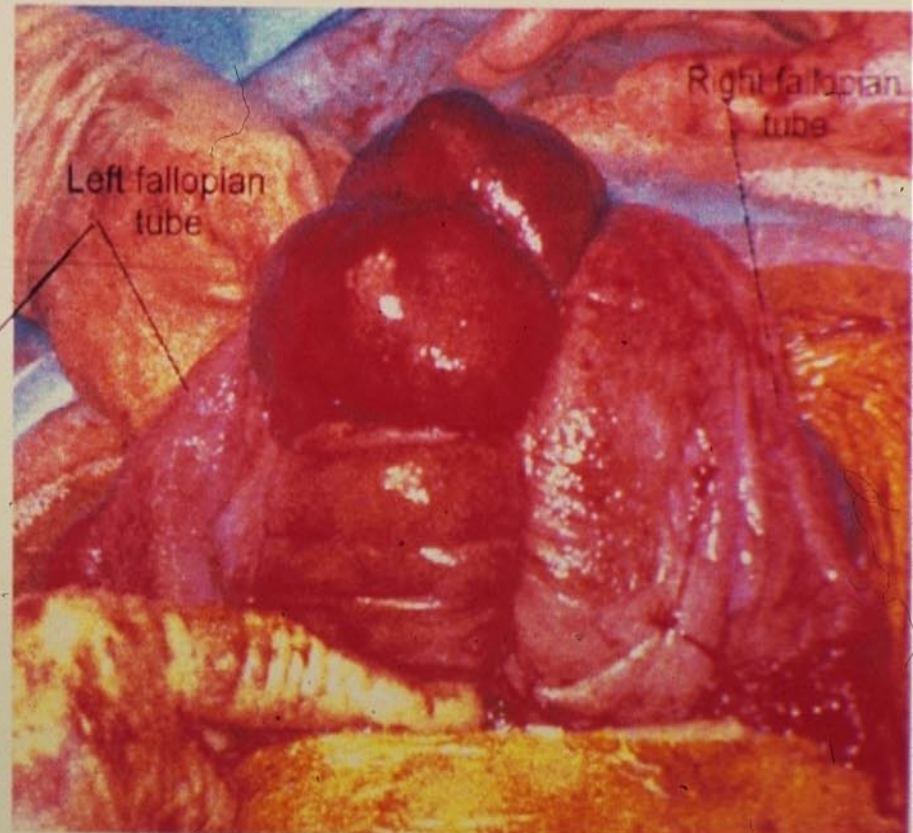
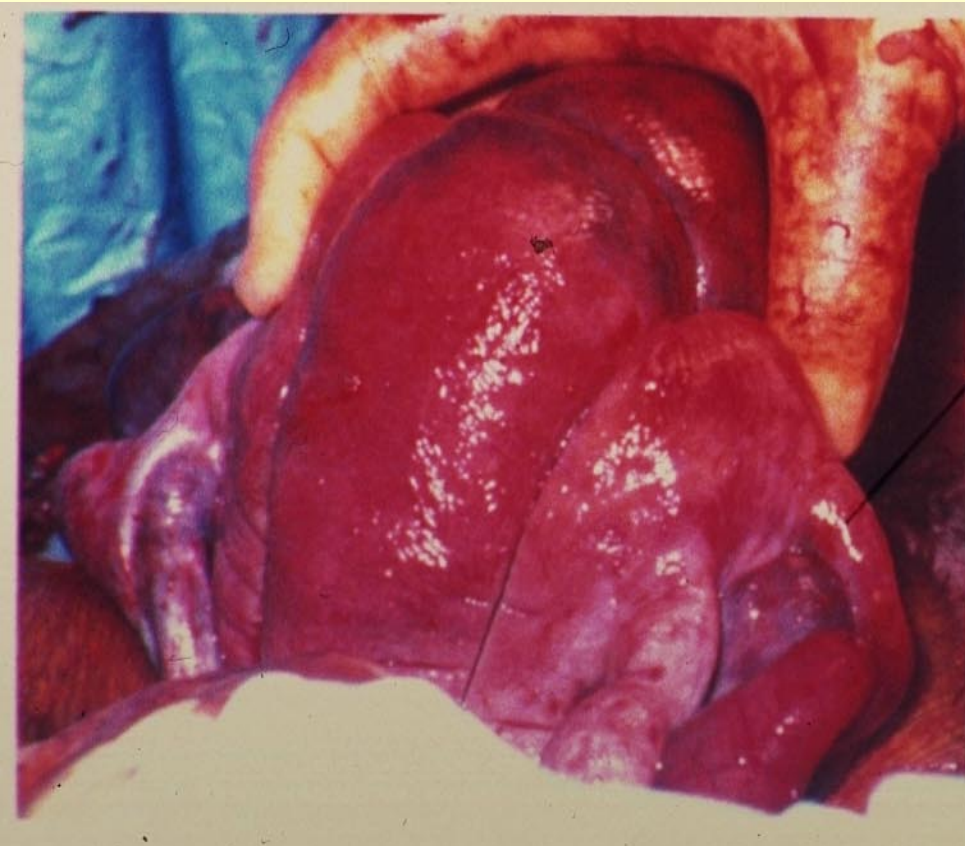




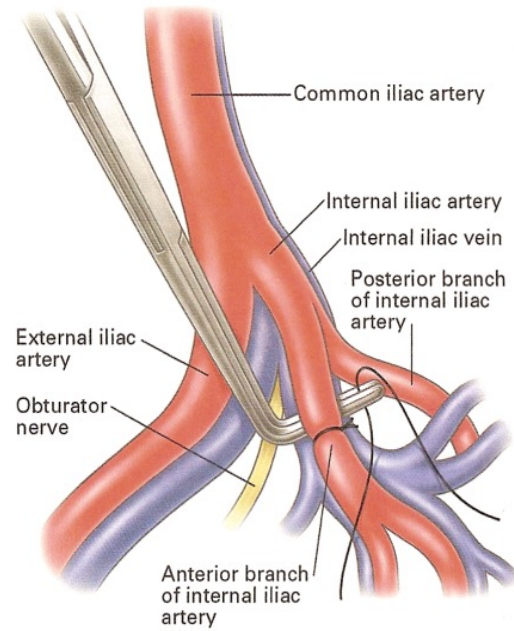
# B-LYNCH PROCEDURE

ANTERIOR VIEW

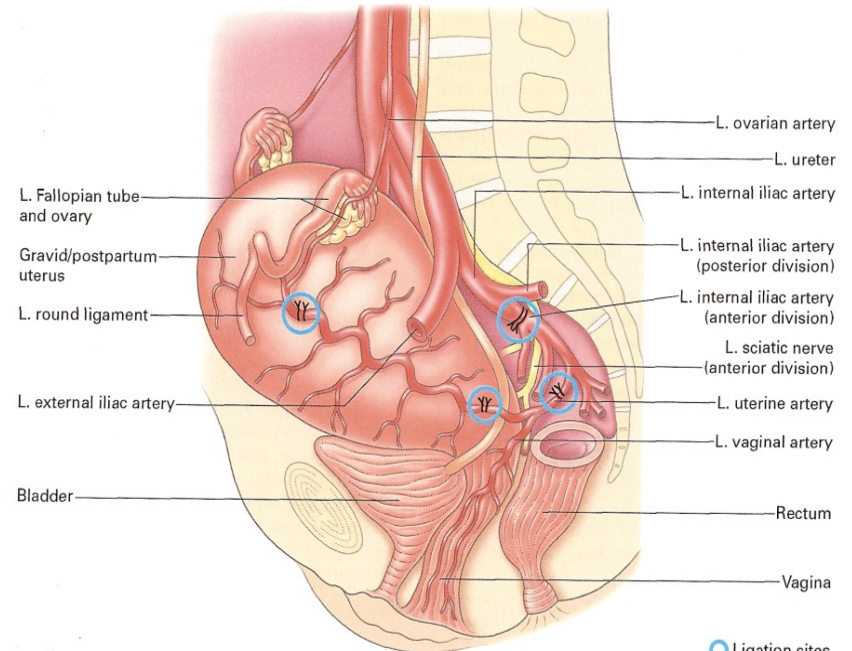
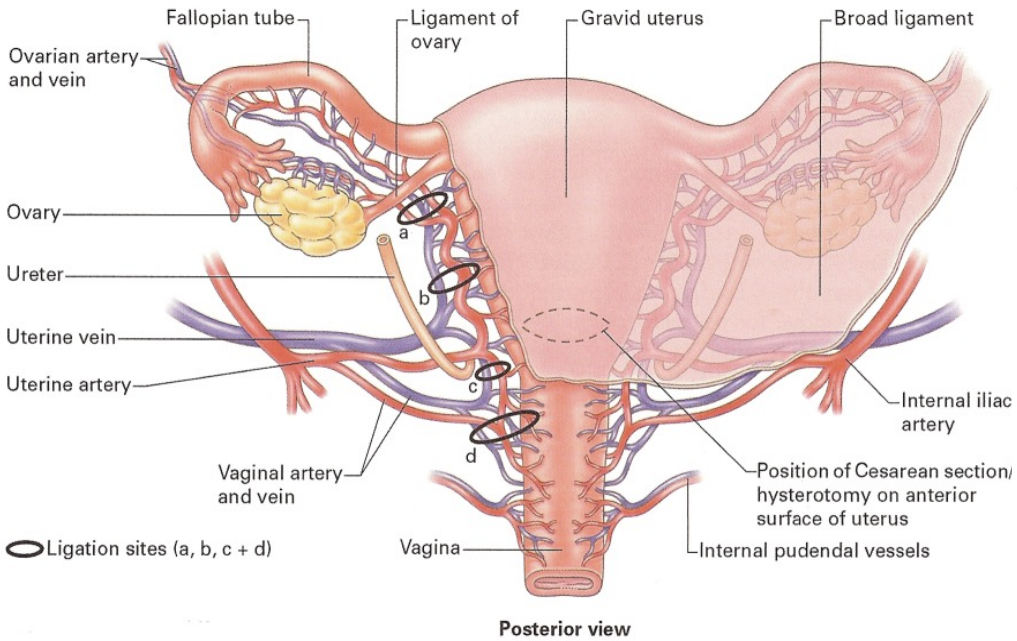
POSTERIOR VIEW



# Surgical Techniques



*Conservative surgical management*

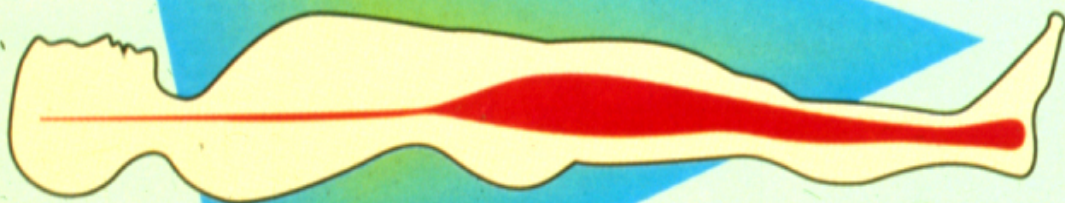


# Non-pneumatic Anti-Shock Garment (NASG)

- Conversion of military trousers into a garment
- To treat shock, resuscitate, and stabilize
- Important to consider for transport from remote areas; little skill needed to put a mother into it







In shock, the brain, heart & lungs are deprived of oxygen because blood accumulates in the lower abdomen & legs.

**DMAST** reverses shock by returning blood to the vital organs – heart, brain & lungs.



# BEGIN APPLICATION OF NASG WITH SEGMENT 1, AT THE ANKLES







- **Criteria for Removal: Hgb 7.5 and Vital Signs Stable x 2 hours**
- **START AT ANKLES**
- **Wait 15 minutes between removing each segment,**
- **Check Vital Signs**
- **Do not continue REMOVAL if**
- **BP decreases by 20 mm HG OR**
- **Pulse increase by 20 BPM**



# FIGO FLOW CHART

# Conclusion

- be prepared
- practice prevention
- assess the loss
- assess maternal status
- resuscitate vigorously and appropriately
- diagnose the cause
- treat the cause-medically/surgically