

Postpartum Hemorrhage

Definition

- > 500cc for vaginal delivery and > 1000 cc after C/S.
 - Hct drop 10%
 - Any bleeding sufficient to cause symptoms or require transfusion.
- ** leading cause of maternal death 25%
- ** 2nd leading cause of pregnancy related death 17%.

- Primary : early → 24 hours after delivery
- Secondary : late → up to 6 weeks

- The 4 T
 1. TONE
 2. TRAUMA
 3. TISSUE
 4. THROMBIN

EARLY

** Causes

- Uterine atony
- Retained placenta
- Trauma → lower genital tract
- Trauma → uterine rupture
- Trauma → uterine inversion
- Hereditary coagulopathy
- Placenta accreta

LATE

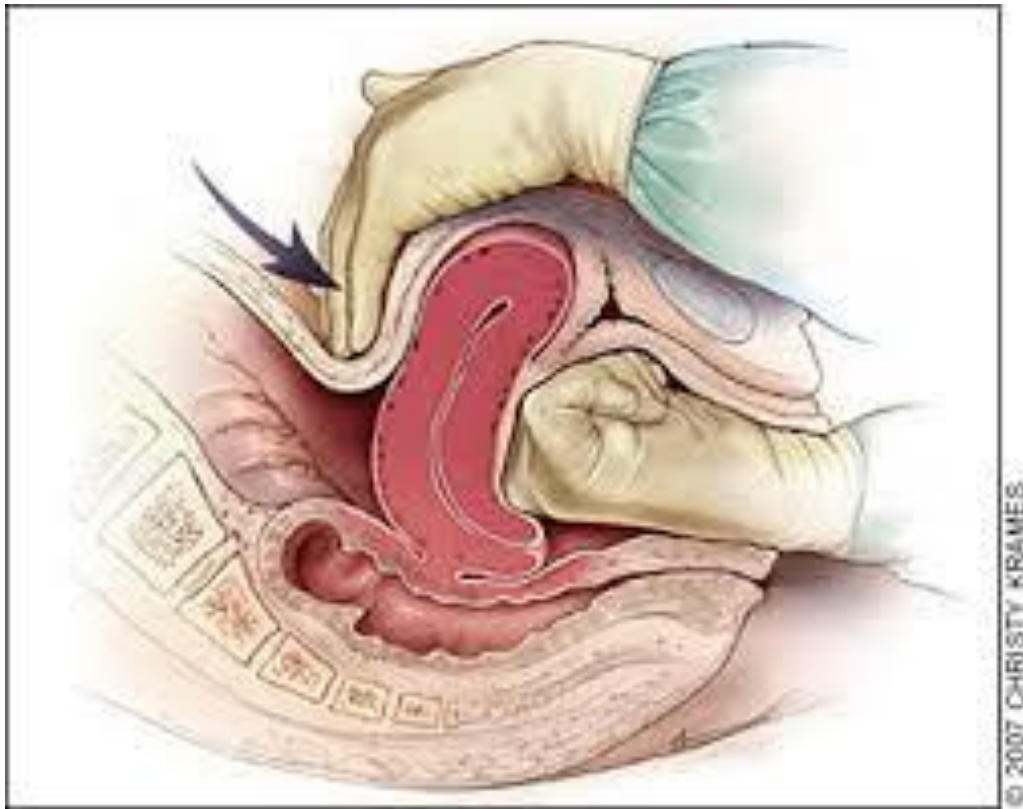
- Infection
- Placental site subinvolution
- Retained placental fragments
- Hereditary coagulopathy
- Preexisting uterine pathology

Uterine atony

- Most common cause
- RF :
 1. Uterine overdistention (macrosomia , polyhydramnios, multiple gestation)
 2. Labour → prolonged , precipitous , or augmented
 3. Chorioamnionitis
 4. Grand multiparity
 5. Tocolytic agents
 6. Anemia
 7. Uterine fibroid
 8. Antepartum hemorrhage
 9. Anesthesia → halothane
 10. Uterine abnormalities

Management of atony

- Bimanual massage

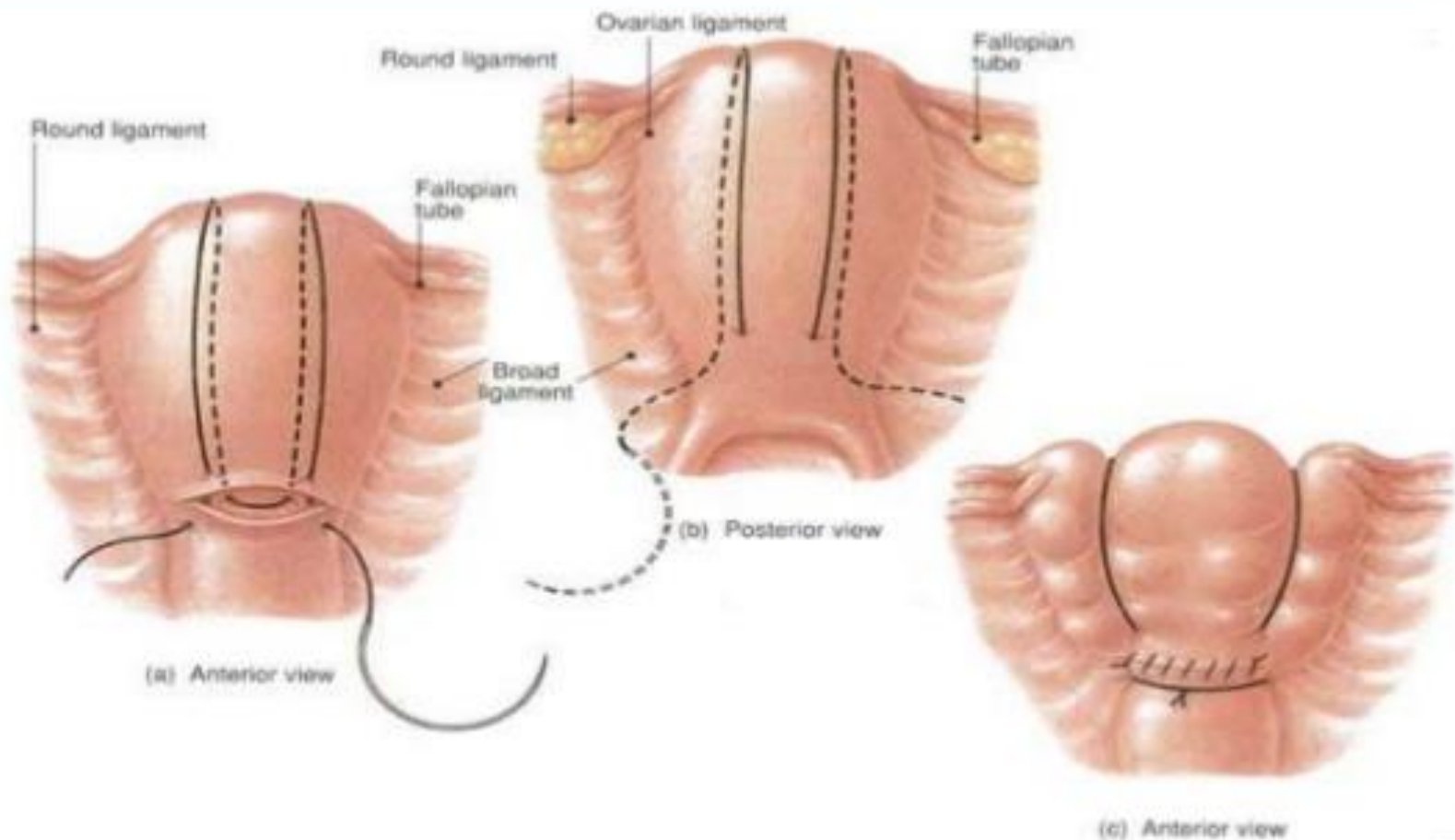


- Empty the bladder
- Uterotonic agents :
 1. Oxytocin 10-40 units /L IV or 10 units IM
 2. Methergin 0.2 mg IM every 2-4 hrs
 3. 15-methylprostaglandin F2 alpha analogs (carboprost) 0.25 mg IM
 4. Prostaglandin E1 analog 800-1000 mcg PR
 5. Prostin E2 : 20 mg PV or PR q 2hrs
- Balloon

- Uterine artery embolization
- Lapratomy
 1. B-Lynch compressive suture
 2. Bilateral uterine artery ligation
 3. Internal iliac artery ligation
 4. hysterectomy

THE B-LYNCH SUTURING

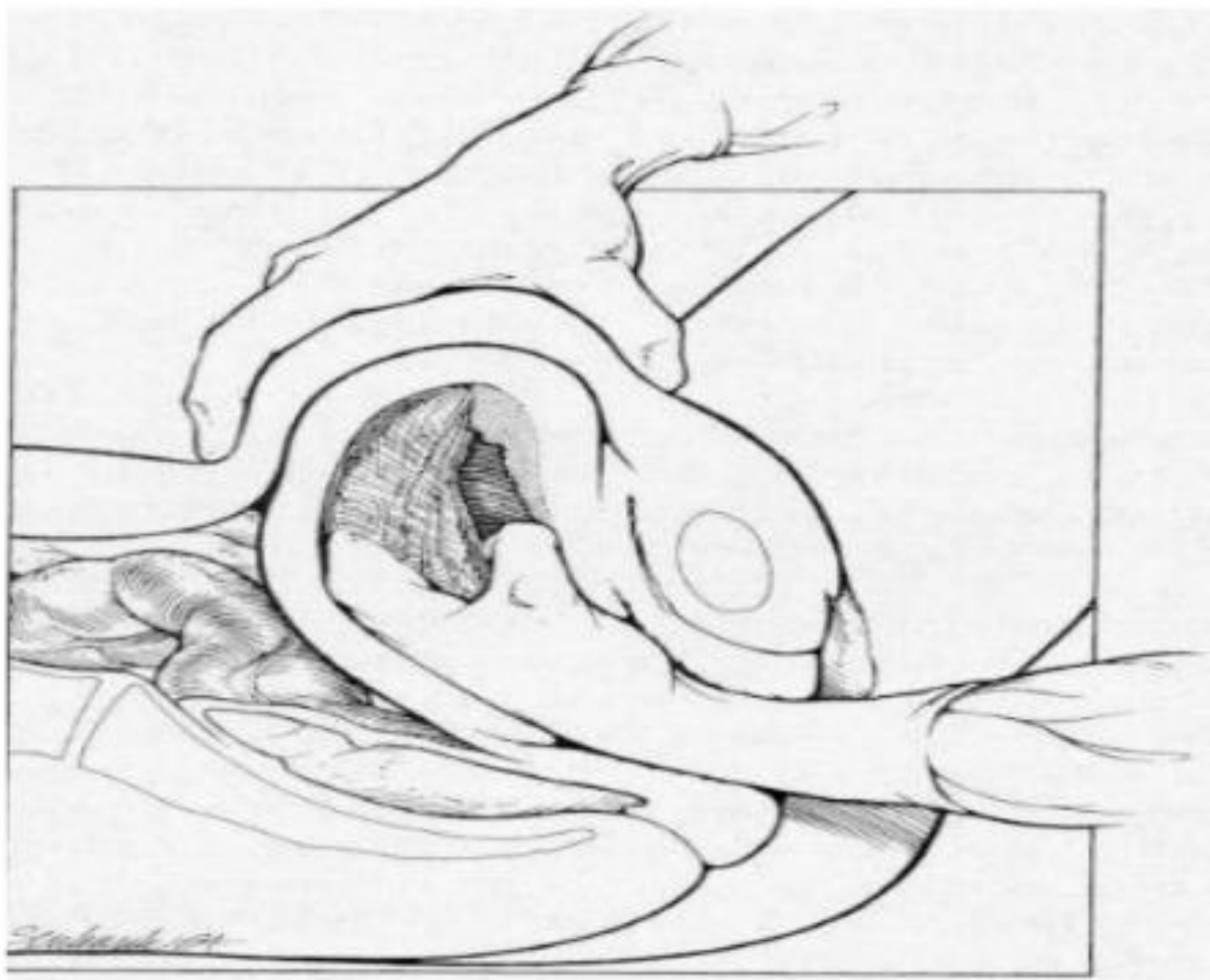
Description of technique



Retained placenta

- If 3rd stage last longer than 30 minutes
- RF:
 1. Accessory lobes
 2. Abnormal placentation
 3. Placenta accreta
 4. Chorioamnionitis
 5. Very preterm delivery

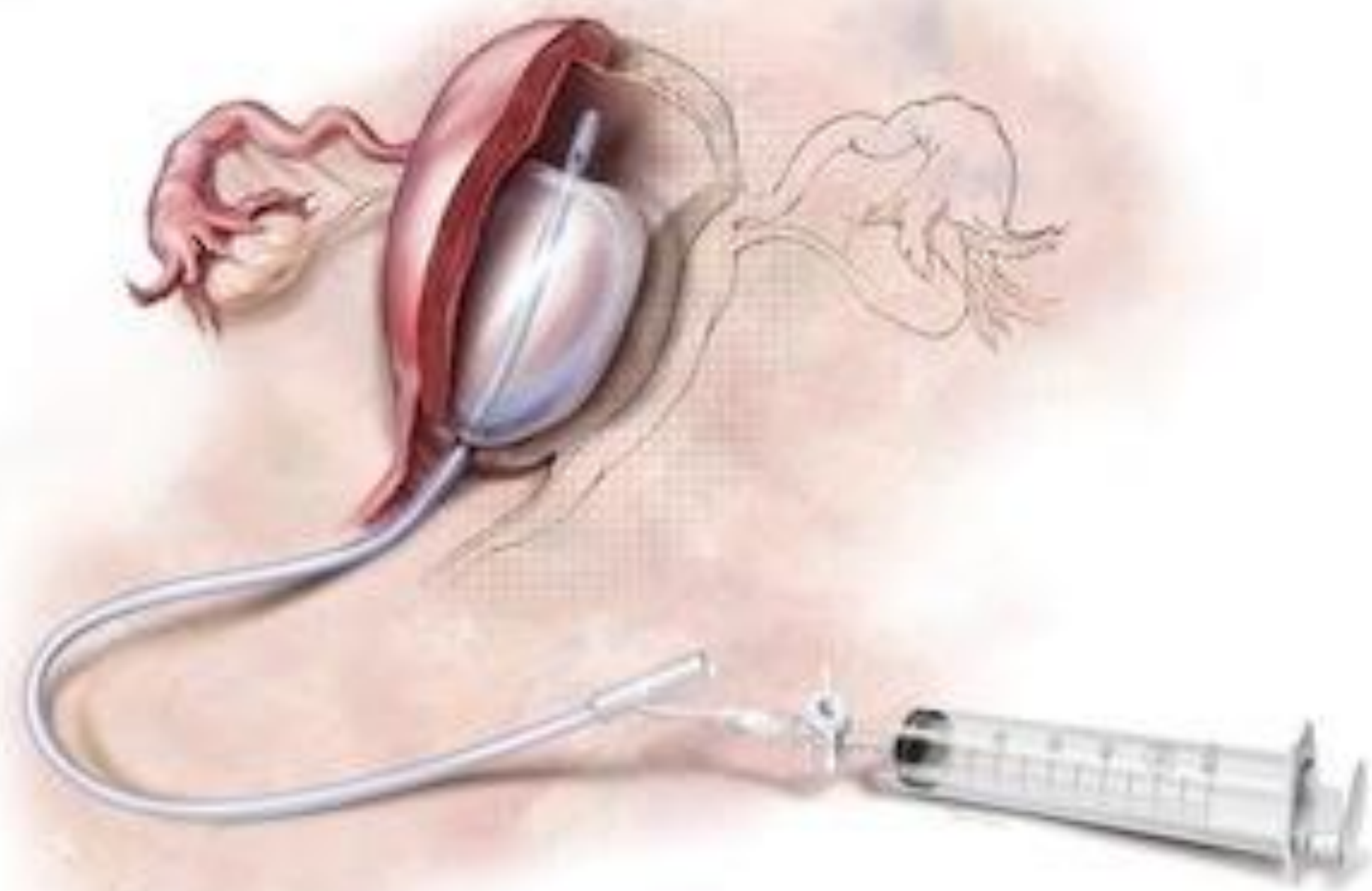
- Manual extraction and uterine exploration
- Blunt curettage
- Conservative
- Balloon catheter (bakri balloon)
- Embolization
- hysterectomy





Bakri

POSTPARTUM BALLOON



Laceration

- Vaginal , cervical , uterine
- Hematomas
- Vaginal packing
- Broad spectrum antibiotics

Uterine rupture

- 0.2 % - 1 % in previous LSC/S
- 4-9 % classical or T incision
- RF :
 1. Prior uterine surgery : CS , myomectomy, resection of cornual ectopic, prior uterine perforation
 2. IOL with prev CS
 3. Internal version or extraction
 4. Operative delivery
 5. trauma

**** Presentation :**

Maternal :

- Hypotension
- Uterine tenderness
- Constant abdominal pain
- Change in uterine shape

Fetal :

- Fetal distress
- Rise in fetal station

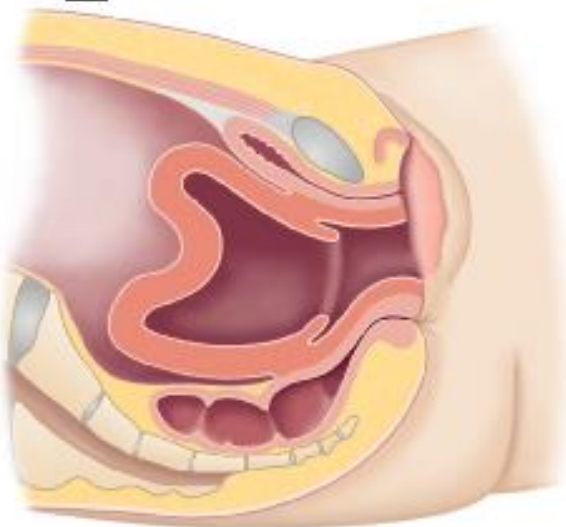
**** Management : lapratomy**

Uterine inversion

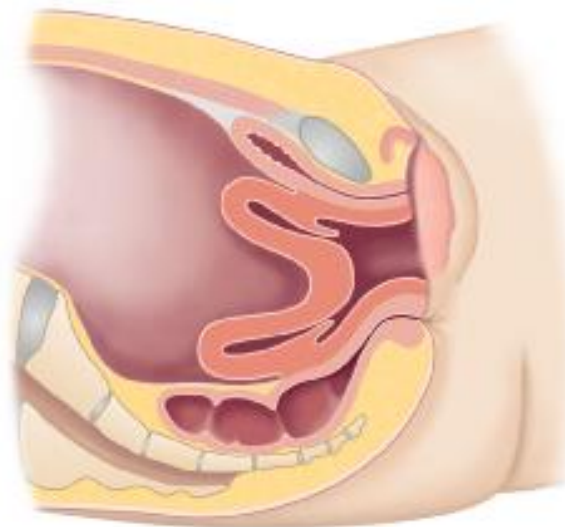
- Partial , complete , prolapsed
- 1 in 2500
- RF :
 1. Multiparity
 2. Prolonged labour
 3. Short cord
 4. Abnormal placentation
 5. Excessive traction on the cord
- Management :

Manual replacement → if failed uterine relaxant agent and replace then uterotonic agents → hydrostatic pressure
→ laparotomy

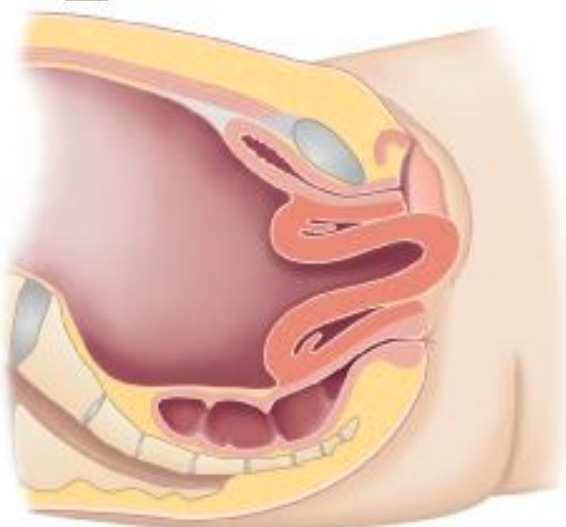
A 1st. degree inversion



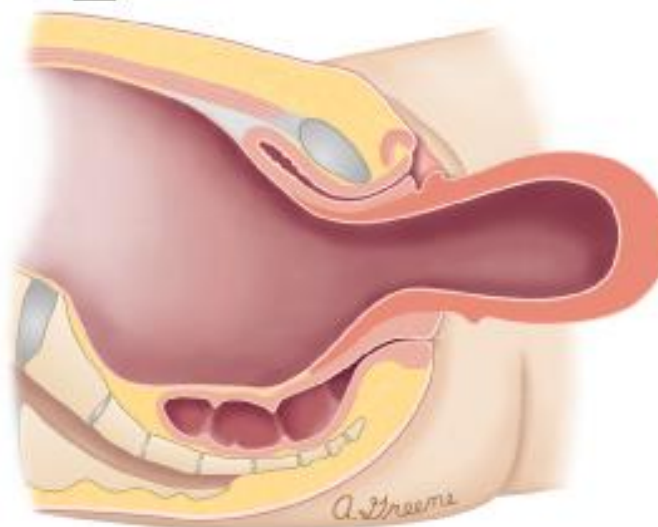
B 2nd. degree inversion



C 3rd. degree inversion



D 4th. degree inversion





ELSEVIER

Coagulopathy

- RF :
 1. Severe PET
 2. Abruptio placenta
 3. DIC
 4. Hereditary
- replete coagulation factors and platelets

MANAGEMENT OF PPH

Step 1 Initial Assessment and Treatment

Resuscitation

- large bore IV (s)
- oxygen by mask
- monitor BP, P, R, U/O
- +/- catheter
- +/- oxygen saturation

Assess Etiology

- explore uterus (*tone, tissue*)
- explore LGT (*trauma*)
- review history (*thrombin*)
- observe clots


Laboratory Tests

- CBC
- coagulation screen
- group and cross

MANAGEMENT OF PPH

Step 2 Directed Therapy

"Tone"

- massage
 - compress
 - drugs
- 

"Tissue"

- manual removal
- curettage

"Trauma"

- correct inversion
- repair laceration
- identify rupture

"Thrombin"

- reverse
- anticoagulation
- replace factors

MANAGEMENT OF PPH

Step 3 Intractable PPH

Get Help

- obstetrician/surgeon
- anaesthesiologist
- lab and ICU

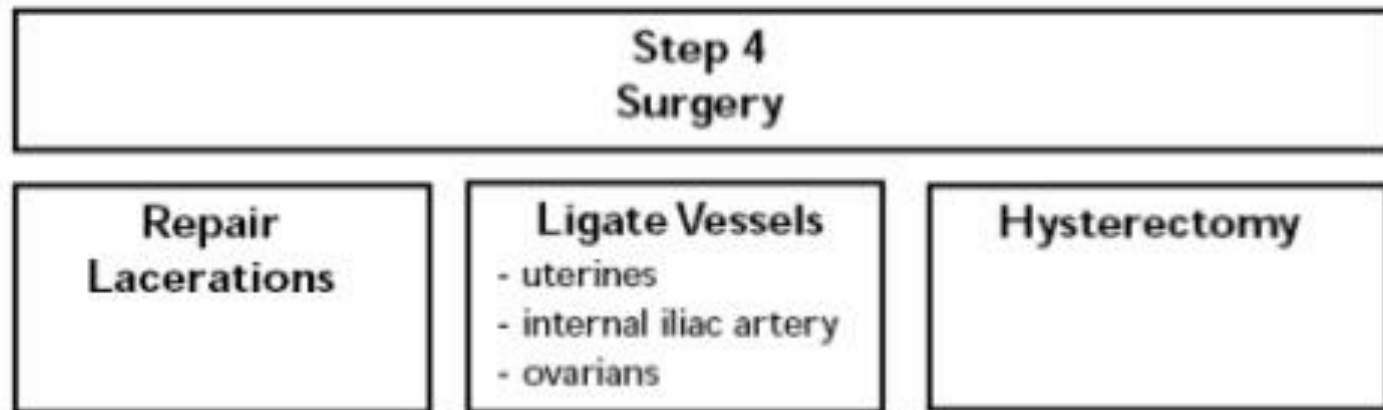
Local Control

- manual compression
- +/- pack uterus
- +/- vasopression
- +/- embolization

BP and Coagulation

- crystalloid
- blood products

MANAGEMENT OF PPH



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Step 5
Post Hysterectomy Bleeding

Abdominal Packing

Angiographic Embolization