
بسم الله الرحمن الرحيم

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The third stage of labor

refers to the interval from delivery of the baby to separation and expulsion of the placenta.

The major complications of the third stage of labor are:

- Retained placenta
- Uterine inversion
- Hemorrhage

Active management

- reduced the risk of primary blood loss >500 mL maternal blood
- Mean maternal blood loss at birth was also reduced

compared with expectant

- use of therapeutic uterotonics during the third stage or within the first 24 hours

active management

- oxytocine administration,
- delayed cord clamping (if medically appropriate for mother and infant, otherwise immediate cord clamping(potential neonatal benefits from prolonging the duration of placental transfusion)
- controlled cord traction.
- breast feeding might reduce the incidence of postpartum hemorrhage

- **Oxytocin adverse effects**, which are dose related and include
- hypotension,
- tachycardia,
- nausea,
- Vomiting
- increased cardiac output,
- myocardial ischemia,
- flushing,
- mild antidiuresis .
- Rarely, large doses of oxytocin given for a prolonged period of time have caused water retention, leading to hyponatremia and its sequelae .

Timing — We administer oxytocin

- after expulsion of the infant and before delivery of the placenta. It should not be given before delivery of the anterior fetal shoulder to ensure that shoulder dystocia, if present, is not exacerbated.
- We give oxytocin before placental separation to expedite the process and continue it after placental expulsion to enhance contraction of the uterus and reduce the volume of blood loss.

- **Route and dose**
- We prefer intravenous infusion of oxytocin for prevention of postpartum hemorrhage,
- but intramuscular injection is an acceptable alternative in women who do not have intravenous access.
- We avoid intravenous bolus injection because of the potential for severe hypotension.

Intravenous infusion

- A commonly used dose is **10 to 40 units of oxytocin per 500 mL 0.9 percent saline,** with the rate of infusion adjusted, as needed, to prevent uterine atony.
- Higher doses have been studied, but did not demonstrate a clear benefit.
- In the absence of strong evidence favoring one dose over another, it is the authors' practice to infuse 20 units of oxytocin in 500 mL 0.9 percent saline over the first hour following delivery of the placenta.
- We subsequently infuse an additional 20 units of oxytocin in 1 L of fluid at a rate of 125 mL/hour. This is generally continued for eight hours to complete the 1 L infusion. The section editor uses a dose of 40 units of oxytocin in cases at high risk for hemorrhage.
- If postpartum uterine bleeding is not excessive and the mother is stable in the postpartum unit, the intravenous line is usually discontinued upon completion of the infusion.

- **Intramuscular administration** of up to 10 units oxytocin is an effective alternative to intravenous infusion if there is no intravenous access
- Onset of action is slower, three to five minutes versus less than one minute with the intravenous route.

- **Intravenous bolus oxytocine** (1 to 10 units) given as an intravenous bolus is effective .
- but the safety of this route has been questioned due to reports of significant hypotension that may lead to cardiovascular collapse and
- If a bolus injection is given, the minimum effective bolus dose of oxytocin is unclear, but appears to **be ≤3 units over one minute** and may be as low **as 0.3 units** [11,28].
- If the initial bolus injection is not effective, it may be repeated **once or twice** before trying a different uterotonic drug.

- Initiation of an oxytocin infusion after the bolus injection appears to reduce blood loss and the need for blood transfusion and/or additional uterotonic agents compared to bolus injection alone [29,30]..

- **Injection into an umbilical vein** of oxytocin

was not effective for prevention of postpartum hemorrhage .

Ergot alkaloids

- single agent therapy, most commonly as methylergonovine 0.2 mg intramuscularly.
- These drugs are **contraindicated** in women with hypertension, history of migraine, or Raynaud phenomenon.
- A major disadvantage of these agents is that they are associated with an increased frequency of vomiting, blood pressure elevation, and pain requiring analgesia .

- The injectable ergometrine is very unstable when stored unrefrigerated or exposed to light, which limits its use in rural areas of developing countries.
- Several investigators have compared the **prophylactic use of ergot alkaloids** with oxytocin, prophylactic oxytocin was superior to ergot alkaloids in preventing PPH >500 mL.

- Ergot preparations are associated with more side effects than oxytocin because they act systemically on **smooth muscle**, while oxytocin is specific for **uterine smooth muscle**.
- However, they **are longer lasting** and produce more tetanic contractions than oxytocin, thus they are **particularly useful for treatment of postpartum hemorrhage.**

- **Ergometrine-oxytocin** — The combined ergometrine-oxytocin preparation (ie, Syntometrine: 5 units oxytocin plus 0.5 mg ergometrine
- has been used successfully in the active management of the third stage of labor, but does not appear to have a clinically important advantage over oxytocin alone and is associated with more side effects.

- **Prostaglandins** — Prostaglandins given orally, sublingually, or per rectum are less effective than oxytocin or ergometrine given parenterally for active management of the third stage of labor [35].
- Few studies have compared parenteral prostaglandins with parenteral uterotonics.

Common side effects of misoprostol include

- shivering
- fever

➢begins within 20 minutes of administration,

➢ peaks at one to two hours,

➢spontaneously declines over three hours .

➢The incidence of fever varies by dose and route of administration

➢is most common in patients receiving **high-dose sublingual misoprostol** “45 percent of those receiving 600 mcg became febrile

some advantages

- inexpensive,
- easy to administer,
- and does not require refrigeration.

Thus, use of misoprostol is advantageous in resource-limited countries where drugs that must be refrigerated or require needles
for injection/intravenous administration may pose a problem.

The World Health Organization (WHO) suggests using a single dose of 600 mcg orally .

- The combined use of misoprostol and oxytocin appears to be more effective than oxytocin alone in reducing bleeding during cesarean delivery, possibly because oxytocin administered as a bolus provides a **rapid initial effect** and misoprostol provides a **sustained effect.**

- **Oxytocin agonists**
- Carbetocin, a **long-acting synthetic oxytocin agonist**,
- has similar pharmacologic properties to those of natural oxytocin.
- It binds to smooth muscle receptors of the uterus and causes rhythmic contractions,
- increases the frequency of contractions, and increases uterine tone.
- . A potential advantage of carbetocin over oxytocin is its **longer duration of action.**
- The toxicity spectrum is similar to that of oxytocin.
- Carbetocin 100 mcg may be given by a single slow intravenous injection.
- lower doses may also be effective
- The risk of postpartum hemorrhage >500 mL was similar for both groups, although the trend suggested a potential benefit from carbetocin use at cesarean but not at vaginal delivery .

اسامی تجاری موجود در ایران

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tranexamic acid

Anti fibrinolytic

The author's institution has adopted the use of tranexamic acid for prevention of PPH in high-risk situations

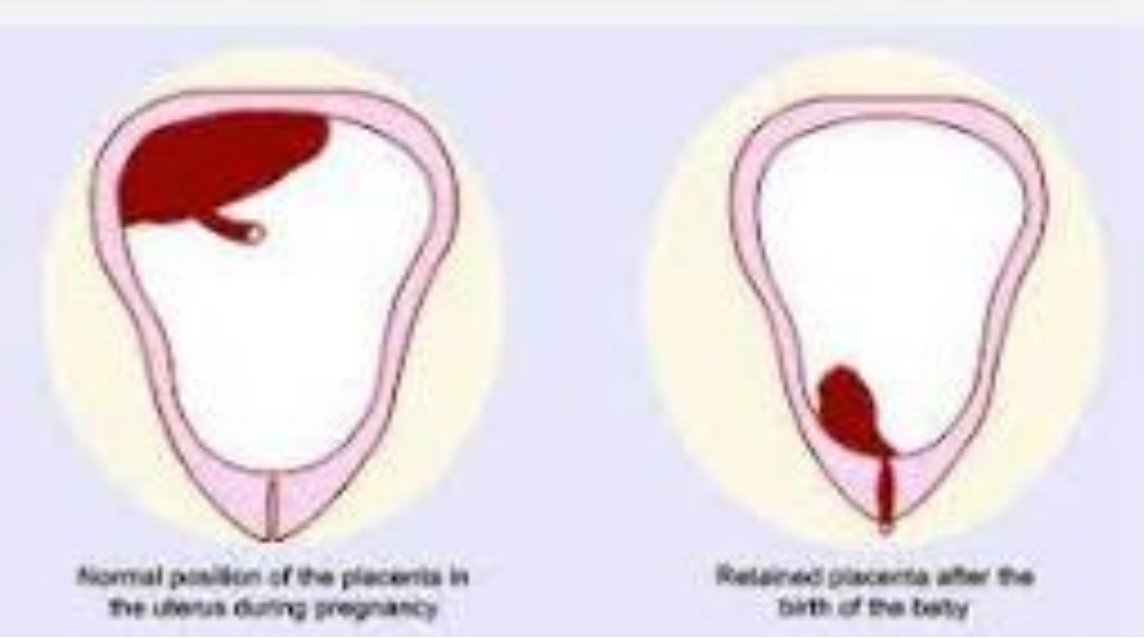
- delivery of patients who refuse blood products
- patients with a significant risk for PPH
  - such as placenta accreta
  - placenta previa

Poor medical resource settings

- Nipple stimulation might reduce the incidence of postpartum hemorrhage by promoting the release of endogenous oxytocin.This safe, inexpensive and easy to apply intervention is suggested when uterotonics are not available or are declined by the patient.

Retained placenta can be defined as lack of placental expulsion within 30 minutes of delivery of an infant.

This time period can be extended to 90 to 120 minutes for births in the second trimester and third stages of labor managed without oxytocin.



The three etiologies of retained placenta are:

- the placenta may be trapped behind a partially closed cervix (trapped or incarcerated placenta);
- the placenta may be adherent to the uterine wall,

but easily separated manually (placenta adherens);

- or the placenta may be pathologically invading the myometrium (placenta accreta).
- **The strongest risk factor for retained placenta** is gestational age less than 26 weeks

trapped placenta is made when the classic clinical signs of placental separation are present .

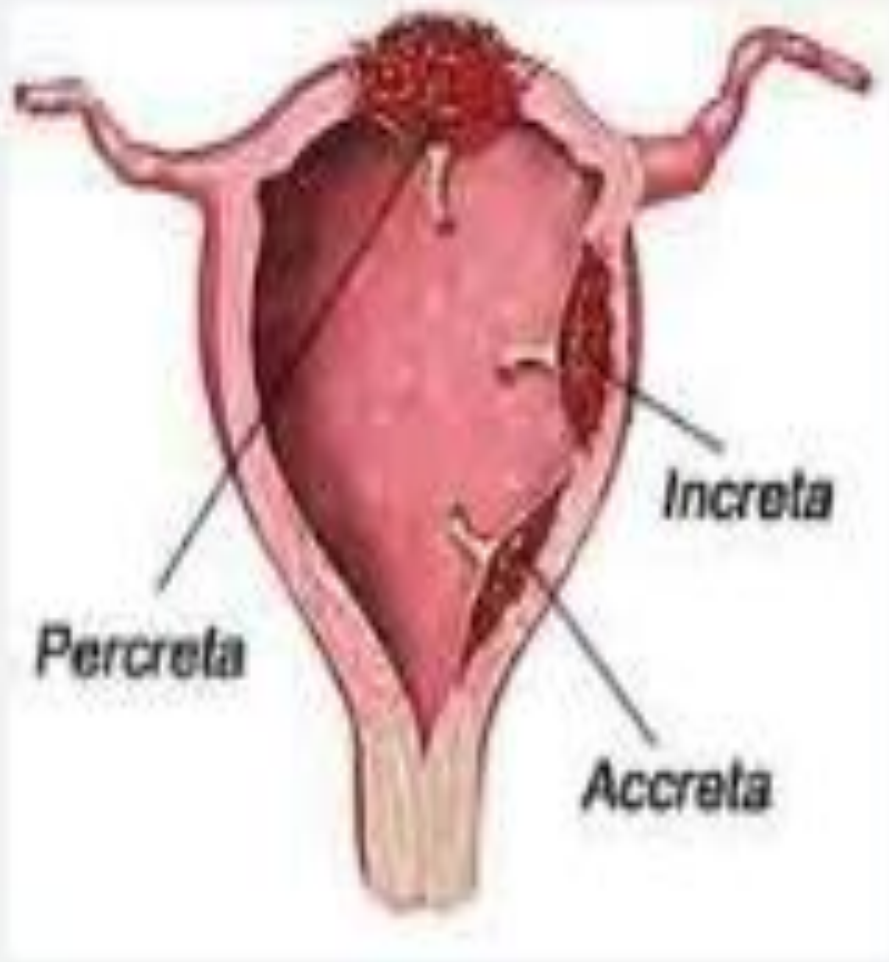
- lengthening of the umbilical cord
- gush of blood from the vagina
- change in the shape of the uterine fundus from discoid to globular
- elevation of the fundal height, and contraction of the fundus
- edge of the placenta is palpable through a narrow cervical os.

A diagnosis of placenta adherens or placenta accreta is made in the absence of signs and symptoms of placental separation.

Placenta adherens is indistinguishable from placenta accreta until the time of attempted manual removal.

If a clean plane of separation can be created between the entire placenta and decidua.

placenta accreta If areas of myometrial invasion prevent clean separation of part of the placenta, the diagnosis is focal.


Increta
Percreta
Accreta

- In **Severe bleeding** is an obstetric emergency that requires **prompt intervention**. The retained placenta should be **manually removed as soon as possible**
- the **absence of heavy bleeding**, we suggest intervention when the third-trimester placenta has been retained **for 30 to 60** minutes rather **than expectant management or earlier intervention**
- **Gentle cord traction** is the initial maneuver.
- **If unsuccessful** and the lower uterus/cervix is constricted, we administer nitroglycerin (glyceryl trinitrate) to release the constriction.

- We suggest administering a **single dose of a broad spectrum prophylactic antibiotic** before manual extraction of the placenta
- For women with a **second-trimester** birth and **no significant bleeding**, the time period before manual extraction can be extended as the frequency of retained placenta is higher and the risk of hemorrhage is lower. We suggest not waiting more than **two hours due to the risk of infection**
- For women with a **small area of placenta accreta**, we slowly **create a plane of separation at the maternal-placental interface using finger dissection**.

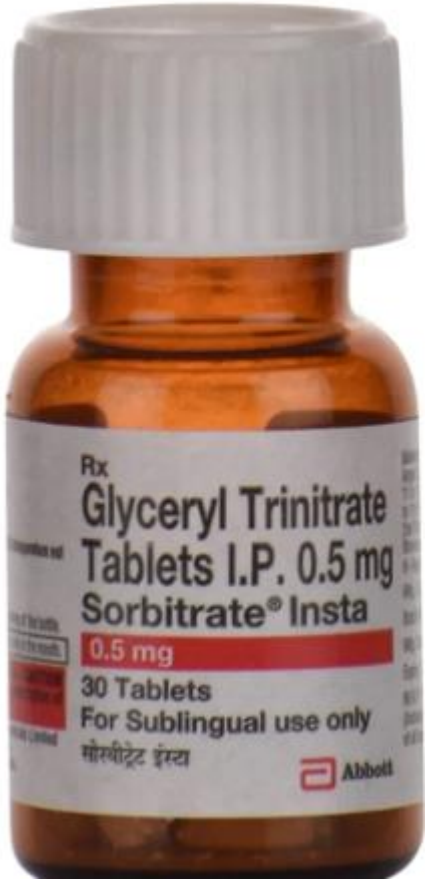
Curettage is a second-line option if finger dissection is unsuccessful.

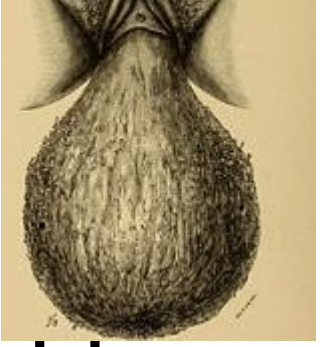
www.ddgroup.com

GTN Glyceryl Trinitrate Sublingual Spray

EasyMeds Pharmacy

Percutol Glyceryl Trinitrate 2 ...





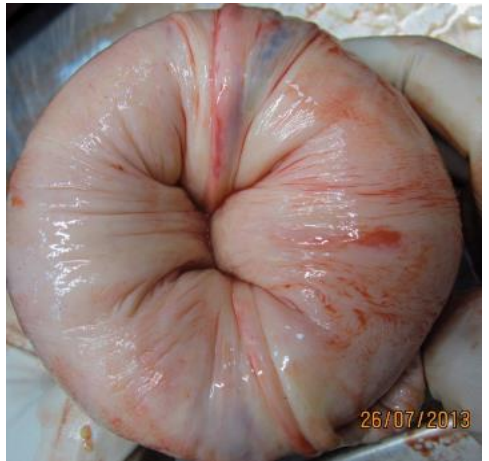
Uterine inversion is a rare complication of vaginal delivery

it can lead **to severe hemorrhage and shock**, resulting in maternal death.

Most inversions are **acute and complete.**

- Uterine inversion has been attributed to excessive **cord traction and fundal pressure** (Credé maneuver) during the third stage of labor, especially in the setting of a

1. **uterine atony**
2. **fundal implantation of the placenta.**



- **The diagnosis of acute uterine inversion** is based upon clinical findings, typically including
- vaginal bleeding potentially resulting in shock,
- lower abdominal pain, and the
- presence of **a smooth**, **round mass** protruding from the cervix or vagina.
- On abdominal examination, **lack of palpation** of a normally positioned **fundus** is the key finding

Treatment

Initial interventions should be applied rapidly

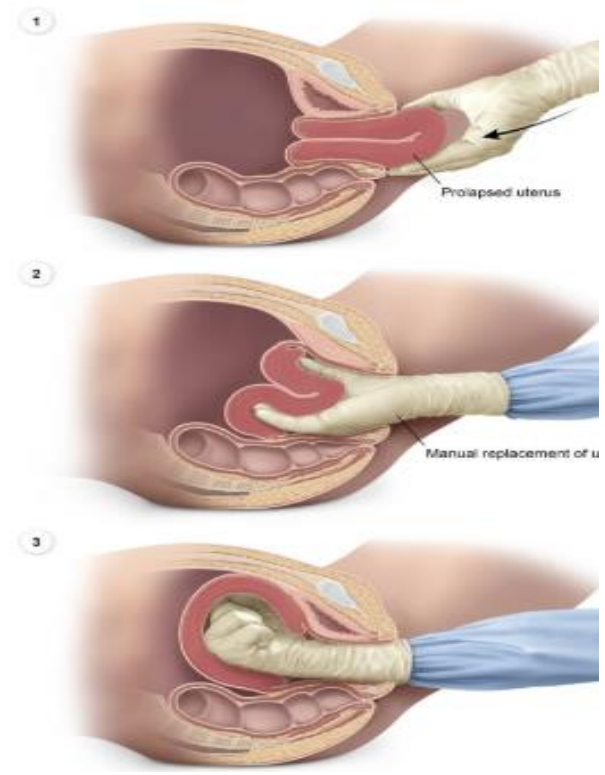
- summon **help**,
- discontinue **uterotonic drugs**,
- administer **crystalloid aggressively** and
- **blood products**
- and **attempt to manually** reposition the uterus by **pushing** the fundus cephalad along the **long axis** of the vagina

➢ If the placenta is **attached to an inverted uterus**, we **suggest leaving it** in place rather than extracting it before **replacing the uterus** Placental extraction may **increase hemorrhage**.

If the initial attempt at manual uterine replacement is **unsuccessful**,

we administer a **uterine relaxant** and **reattempt reduction** of the inversion. We suggest **nitroglycerine** over other uterine relaxants It is highly effective and has a short duration of action.

- **Surgical intervention** is required if manual replacement remains unsuccessful **after administering a uterine relaxant**.



We suggest A uterotonic agen **(oxytocin**)t is administered **after uterine replacement** to induce myometrial contraction, maintain uterine involution, and prevent reinversion.

Huntington procedure

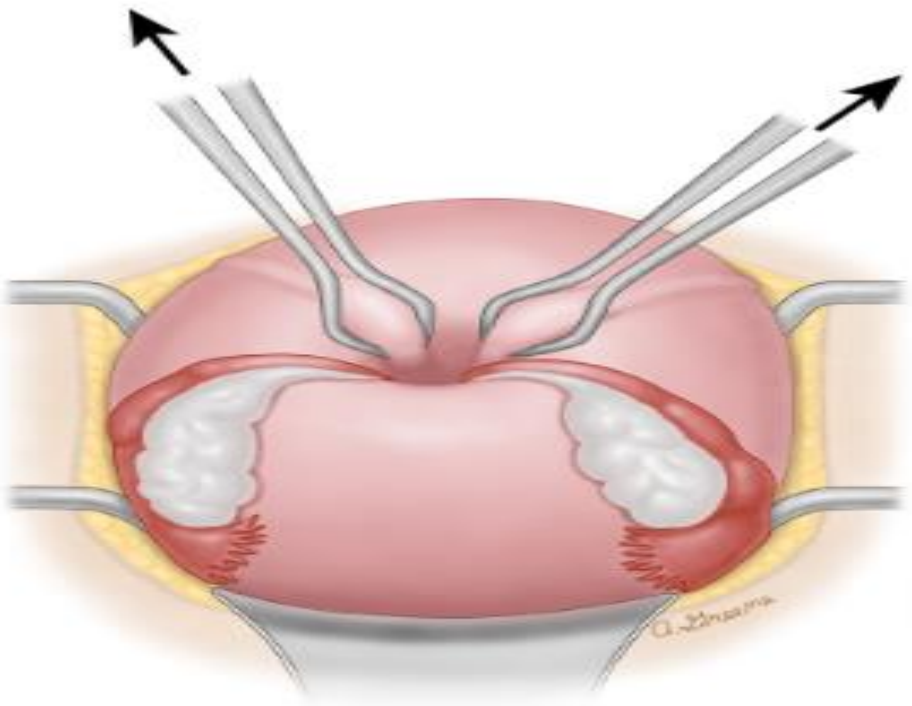
The **cup formed** by the inversion is located. A clamp, such as an **Allis or Babcock** clamp, is placed on each **round ligament** entering the cup, about **2 cm deep in the cup**.

Gently pulling on the **clamps exerts upward traction** on the inverted fundus.

Clamping and traction are repeated until the inversion is corrected.

The myometrium can be clamped
if the round ligaments cannot be identified.

a **second operator** with a **hand in the vagina** can apply upward pressure on the fundus to facilitate the procedure



Huntington procedure - UpToDate

Haultain procedure

The Haultain procedure involves making an incision in the posterior surface of the uterus tobisect the constriction ring,
and thus increase its size Surgical release of the constriction ring
should allow **manual reduction** of the uterine inversion or the inversion can be corrected using the **Huntington procedure**,
followed by **repair of the incision**.

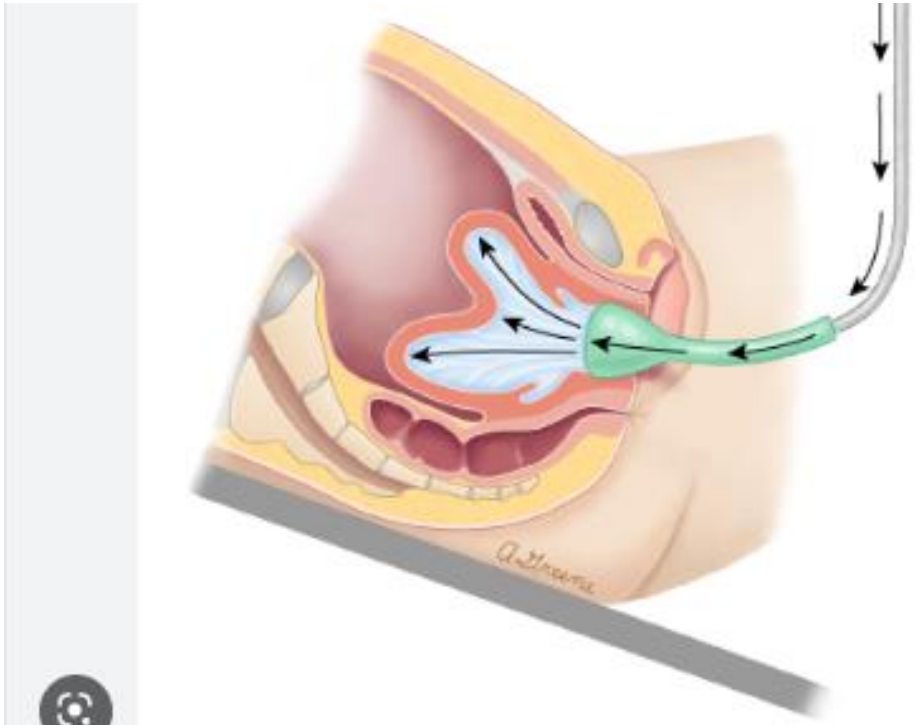
We prefer a posterior incision to an anterior incision to reduce the risk of **accidental cystotomy**

- The patient is placed in reversed Trendelenburg lithotomy position.

- A bag of warmed fluid is hung at least one meter above the patient and allowed to flow by gravity or with light pressure **through tubing connected to a silastic ventouse cup in the vagina;**
-
- the seal between the perimeter of the cup and the vagina prevents significant leakage.

- The resulting intravaginal hydrostatic pressure may force the inverted fundus back to its normal position .

- 2 to 5 liters of fluid may be needed.
- The author has no experience with this procedure



Puerperal uterine inversion - UpToDate

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postpartum hemorrhage

- It is one of the top five causes of maternal mortality in both high and low per capita income countries,

INCIDENCE-estimate is 1 to 5 percent of deliveries.

TERMINOLOGY —

- PPH occurring in the first 24 hours after delivery is occasionally called primary or early PPH, and is the subject of this topic.
- PPH occurring from **24 hours to 12 weeks** after delivery is usually called secondary, late, or delayed PPH.

PHYSIOLOGIC MECHANISMS THAT LIMIT POSTPARTUM BLOOD LOSS

The potential for massive hemorrhage after delivery is high because,

in late pregnancy, **uterine artery blood flow is 500 to 700 mL/min** and accounts for approximately **15 percent of cardiac output**.

Normally, **hemostasis occurs upon placental separation** because uterine bleeding is controlled by a combination of two mechanisms:

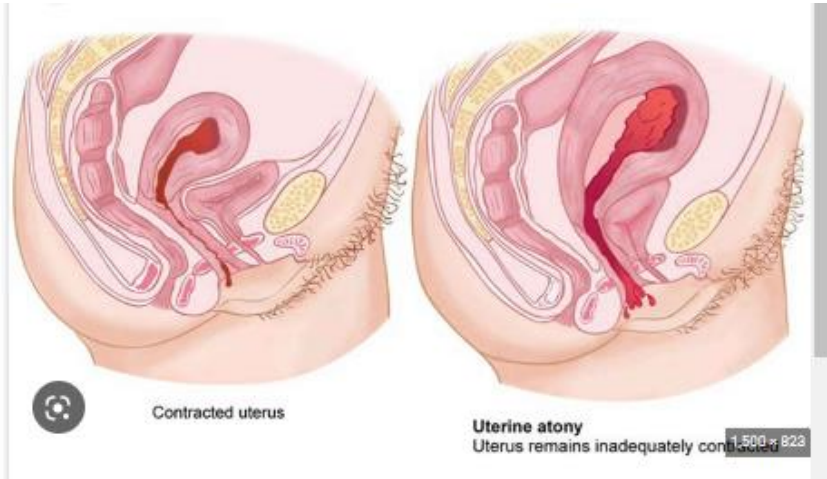
- **Contraction of the myometrium**, which compresses the blood vessels supplying the placental bed and causes **mechanical hemostasis**.
- Local **decidual hemostatic factors**
  - tissue factor type-1 plasminogen activator inhibitor and
  - systemic coagulation factors
- platelets,
- circulating clotting factors which cause clotting.

1. The pathogenesis of most cases of PPH is a **disturbance in one or both of these mechanisms.**
2. The pathogenesis for most of the remaining PPH cases is loss of **intact vasculature trauma.**

PATHOGENESIS

Focal or diffuse atony — The most common cause of PPH is uterine **atony** (ie, lack of effective contraction of the uterus after delivery

- The diagnosis of atony is generally made when the uterus does not become firm after routine management of the third stage of labor (ie, uterine massage and oxytocin).
- Atony may or may not be associated with retained tissue.
- Placental disorders
  - placenta previa,
  - abruptio placentae
  - retained products of conception
  - and uterine inversion



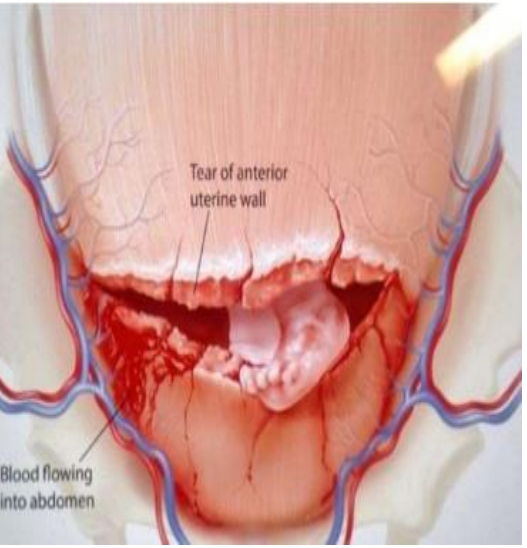
Trauma

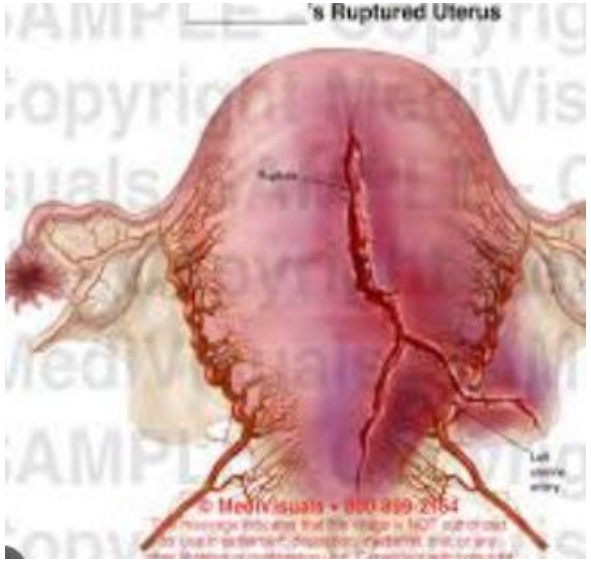
- lacerations
- surgical incisions.

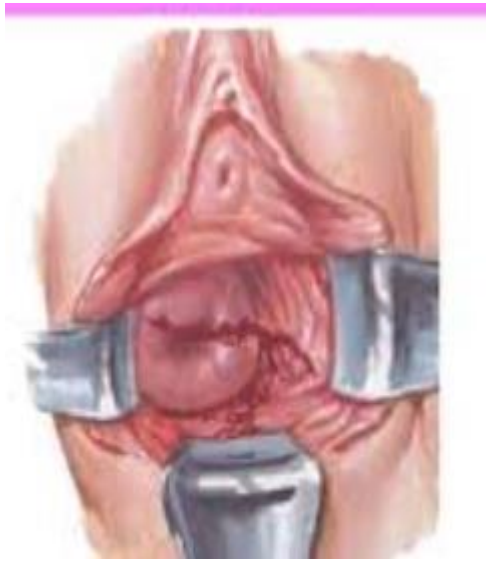
➢Cervical and vaginal lacerations

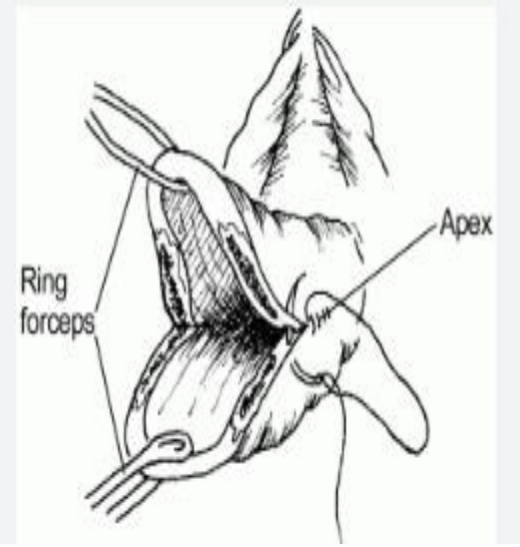
➢may be complete transmyometrial ruptures or incomplete lacerations of the inner myometrium

At cesarean deliverycaused by lateral extension of the incision









Coagulopathy

- in women with an inherited or acquired bleeding diathesis, and a result of PPH when there is a severe **reduction of clotting factors** due to persistent heavy bleeding and hemodilution of the remaining clotting factors.

Acute coagulopathies can be caused by

- amniotic fluid embolism,
- placental abruption,
- preeclampsia with severe features,
- or HELLP syndrome.

RISK FACTORS AND SPECIFIC ETIOLOGIES

- Retained placenta/membranes
- Morbidly adherent placenta
- Instrumental delivery
- Hypertensive disorders
- Prolonged first or second stage
- high parity,
- precipitous labor,
- chorioamnionitis,
- leiomyoma,
- Failure to progress during the second stage of labor
- Lacerations
- Large for gestational age newborn
- Induction of labor
- obesity,
- Asian or Hispanic race,
- uterine overdistention
- uterine inversion,
- Couvelaire uterus,
- inherited bleeding diathesis,
- acquired bleeding diathesis (eg, amniotic fluid embolism, abruptio placentae, sepsis, fetal demise)
- assisted reproductive technology
- use of some drugs (uterine relaxants, antithrombotic drugs, possibly antidepressants of labor
- family history of previous PPH

Definition/diagnosis

- bleeding that is greater than expected
- results in signs and/or symptoms of hypovolemia

Diagnosis may be *delayed* in **symptomatic women** when bleeding is **not observed**, such as **intra-abdominal bleeding** after a **vaginal delivery** or after **closure of the abdomen in a cesarean delivery.**

Assessment of severity of hemorrhage

- Significant drops in *blood pressure* are generally **not manifested** until substantial bleeding has occurred, and up to **25 percent of a patient's blood volume (≥1500** mL in pregnancy) can be lost before **blood pressure falls and heart rate rises**
- **Hemoglobin and hematocrit** values are **poor indicators of acute blood loss** since **they may not decline immediately after an acute bleed.**

California maternal quality care collaborative staging system

Stage 0:

- Blood loss <500 mL with vaginal delivery or
- <1000 mL with cesarean delivery.
- Stable vital signs.

Stage 1:

- Blood loss >500 mL vaginal delivery or
- >1000 mL cesarean delivery **or**
- change in vital signs by >15 percent

  heart rate ≥110 beats

  minute, blood pressure ≤85/45 mmHg

  O_2 saturation <95%

Stage 2:

Continued bleeding with total blood loss <1500 mL

Stage 3:

- Continued bleeding with total blood loss >1500 mL
- transfusion of more than 2 units packed red blood cells **or**
- unstable vital signs **or**
- suspicion of disseminated intravascular coagulation

Blood loss, %(mL)	Blood pressure, mmHg	Signs and symptoms
10 to 15 (500 to 1000)	Normal	Palpitations, lightheadedness, mild increase in heart rate
15 to 25 (1000 to 1500)	Slightly low	Weakness, sweating, tachycardia (100 to 120 beats/minute)
25 to 35 (1500 to 2000)	70 to 80	Restlessness, confusion, pallor, oliguria, tachycardia (120 to 140 beats/minute)
35 to 45 (2000 to 3000)	50 to 70	Lethargy, air hunger, anuria, collapse, tachycardia (>140 beats/minute)

PLANNING

Management of risk — Women with risk factors for PPH should be **identified** and **counseled** as appropriate for their **level of risk** and **gestational age**

Planning for these patients **involves ensuring availability of resources that might be needed,** including

1. personnel,
2. medication,
3. equipment,
4. adequate intravenous access
5. blood products.

Intrapartum, blood should be **typed and screened for women with a medium risk factor for PPH**

- (eg***, prior uterine surgery, multiple gestation, grand multiparity, prior PPH, large fibroids, macrosomia, body mass index >40, anemia, chorioamnionitis, prolonged second stage***, oxytocin **>24 hours,** magnesium sulfate **administration)** and

typed and crossmatched for those at high risk of PPH

- **(eg, placental previa or accreta, bleeding diathesis, two or more medium risk factors for PPH).**

Use of a cell saver **(blood salvage**) should be considered for women at increased risk of PPH, but is not cost-effective as a routine **in all cesarean deliveries .**

risk factors classification

Low risk

- Singleton pregnancy
- Fewer than four previous deliveries
- No previous uterine surgery
- No history of PPH

Medium risk

- Prior uterine surgery
- More than four previous deliveries
- Multiple gestation
- Large fibroids
- Chorioamnionitis
- Magnesium sulfate or prolonged oxytocin infusion

High risk

- Morbidly adherent placenta
- Hematocrit <30 percent
- Bleeding at admission
- Bleeding diathesis/coagulation defect
- History of PPH
- Tachycardia, hypotension

Timely diagnosis and early intervention

- **initiating treatment is critical**, as almost **90 percent of deaths due to PPH occur within four hours of giving .**
- It is important to not allow the patient to **become moribund before initiating life-saving measures.**
- **Early intervention may prevent shock**

➢inadequate perfusion and oxygenation of tissues

➢ and the development of **lethal triad**

1. hypothermia,
2. acidosis
3. coagulopathy.

Teamwork

- Obstetricians,
- midwives,
- nurses,
- anesthesiologists,
- Hematologists
- blood bank personnel,
- laboratory medicine,
- surgical subspecialists (eg, vascular, urology)
- interventional radiologists may be involved in managing PPH

Monitor bleeding, vital signs, and laboratory results

Close maternal monitoring is critical to assess the best approach to and aggressiveness of intervention,

- requires bedside evaluation by the provider.

Laboratory evaluation includes

- complete blood count,
- coagulation studies,
- potassium
- ionized calcium levels

Treatment goals are to:

- Restore or **maintain adequate circulatory volume** to prevent **hypoperfusion of vital organs**
- Restore or **maintain adequate tissue oxygenation**
- Reverse or **prevent coagulopathy**
- **Eliminate the obstetric cause of PPH**

Pharmacologic interventions

Drug	Dosing
Oxytocin	10 to 40 units in 500 to 1000 mL normal saline infused at a rate sufficient to control atony or 10 units IM
Tranexamic acid	1 g (10 mL of a 100 mg/mL solution) is infused over 10 to 20 minutes; if bleeding persists after 30 minutes, a second 1 g dose is administered
Ergots	Methylergonovine 0.2 mg IM every two to four hours or ergometrine 0.5 mg IV or IM or ergonovine 0.25 mg IM or IV every two hours
Carboprost	0.25 mg IM every 15 to 90 minutes up to eight doses or 500 mcg IM incrementally up to 3 mg or 0.5 mg intramyometrial
Misoprostol	800 to 1000 mcg rectally
Dinoprostone	20 mg vaginally or rectally every two hours
Recombinant human Factor VIIa	50 to 100 mcg/kg every two hours

Surgical interventions
Repair lacerations
Curettage
Uterine compression suture (eg, B-Lynch suture)
Uterine artery ligation
Utero-ovarian artery ligation or cross clamp
Pelvic packing
Uterine tourniquet
Focal myometrial excision
Use of fibrin glues and patches to cover areas of oozing and promote clotting
Placement of figure 8 sutures or other hemostatic sutures directly into the placental bed
Resuscitative endovascular balloon occlusion of the aorta (REBOA)
Internal iliac artery (hypogastric artery) ligation
Aortic/iliac artery compression
Hysterectomy, supracervical
Hysterectomy, total

Blood bank
Packed red blood cells
Platelets
Fresh frozen plasma
Cryoprecipitate

Nonsurgical interventions
Uterine massage
Intravenous fluids
Tamponade
Intrauterine tamponade with an intrauterine balloon or alternative device (eg, bladder catheter bulb, Sengstaken-Blakemore tube)
Uterine packing (eg, 4 inch gauge packing)

Consultations
General surgery
Trauma surgery
Anesthesia team
Interventional radiology
Gynecologic oncology
Urology

- If the patient is coagulopathic with an extremely low fibrinogen level (50 to 100 mg/dL), cryoprecipitate and other high-concentration fibrinogen products (eg, fibrinogen concentrate) are indicated since fresh frozen plasma alone will not increase the fibrinogen level to the normal range without requiring excessive volume infusion.

Unless **absolutely necessary, emergency hysterectomy** should be **avoided** in a **coagulopathic patient** with

- **inadequate intravenous access for massive transfusion/**
- **correction of electrolyte imbalances**, as major surgery in this setting may cause further **deterioration in maternal status** as a result of uncontrolled **retroperitoneal hemorrhage** and **myocardial depression.**

- **Early resort** to hysterectomy is appropriate in women **with severe bleeding due to diffuse placenta accreta/increta/percreta or a large uterine rupture**.

- in contrast, **hysterectomy** is generally a **last resort** in patients with **atony**, as these patients can often be **managed successfully with medical therapy** and less aggressive surgical interventions.
- However, hysterectomy **should not be delayed** in those who **have depleted their clotting factors** and **require prompt control of uterine hemorrhage** to prevent death.

- **Approach to hemodynamically stable patients** — For hemodynamically stable patients in whom the capacity for blood replacement exceeds that of the **ongoing hemorrhage**, arterial embolization is an effective treatment for persistent bleeding.
- Generally, arterial embolization **should not be attempted in unstable patients** who have to be transferred to a radiology suite

Thromboembolism — **0.3 percent of women with PPH** had thromboembolic event (deep vein thrombosis, pulmonary embolus, stroke, myocardial infarction

Thromboembolism prophylaxis For this reason, all women who have been transfused for PPH should receive **mechanical thromboprophylaxis** (graduated **compression stockings** or **pneumatic compression device**) as soon as feasible and continue **thromboprophylaxis** until discharge.

Hemodynamic instability and organ failure

60 percent of women with PPH had clinical signs **of hemodynamic instability** at diagnosis of PPH and almost

- **4 percent developed renal failure**
- **heart failure**,
- **respiratory failure**, or

hepatic failure [51].

Treatment of hemodynamic instability with fluids and blood can lead to volume overload, resulting in

- pulmonary edema and
- dilutional coagulopathy.

- **Sheehan syndrome** is a rare but potentially life-threatening complication.
- The pituitary gland is enlarged in pregnancy and prone to infarction from hypovolemic shock

Abdominal compartment syndrome —

- Abdominal compartment syndrome **(organ dysfunction** caused by **intraabdominal hypertension**) is a rare but life-threatening complication of **PPH with intraabdominal bleeding**.

- The diagnosis should be considered in patients with a tensely distended abdomen and progressive oliguria who are developing multiorgan failure

- **RECURRENCE** — Women with a prior PPH have as much as a 15 percent risk of recurrence in a subsequent pregnancy