OBSTETRIC EMERGENCY · POSTPARTUM

L & D
CODE PINK
OB EMERGENCY

Uterine *Inversion*

When the fundus turns inside out and prolapses through the cervix — a rare, time-critical emergency producing simultaneous hemorrhagic *and* neurogenic shock. Survival hinges on rapid recognition, immediate replacement, and a strict pharmacologic sequence.

01 Definition & Overview

~1 IN 2,000–6,400 BIRTHS · MORTALITY UP TO 15% IF UNTREATED

The uterus turns inside out.

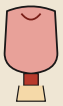
A **postpartum obstetric emergency** in which the uterine fundus collapses inward and prolapses into or through the cervix or vagina — most commonly during the **third stage of labor** (placental delivery).

Two simultaneous shock states develop: **hemorrhagic shock** (rapid blood loss 1,500–2,000+ mL from uterine atony) and **neurogenic shock** (severe vagal response from traction on round ligaments and peritoneum).

Outcome depends on speed: every minute of delay tightens the cervical ring around the inverted fundus, making manual replacement progressively harder.

4 DEGREES · CLASSIFICATION

1°	Incomplete	Fundus dimples inward but stays above cervix
2°	Complete	Fundus passes through cervix into vagina
3°	Prolapsed	Fundus extends to or past the introitus
4°	Total	Both uterus and vagina invert — surgical



1°

Incomplete

Dimple only — fundus stays above cervix

2°

Complete

Fundus through cervix into vaginal canal

3°

Prolapsed

Fundus visible at or beyond introitus

4°

Total

Uterus + vagina both inverted

02 Pathophysiology

MECHANISM · SEQUENCE · WHY TWO SHOCKS AT ONCE

TRIGGER: THIRD-STAGE LABOR MANIPULATION OR SPONTANEOUS

01 **Trigger event** Excess cord traction OR fundal pressure OR weak fundus →

02 **Fundus dimples** Inward into uterine cavity →

03 **Inversion descends** Through cervix; ligaments stretched →

04 **Massive vagal** Bradycardia + hypotension →

05 **Hemorrhage + shock** Uterine atony + neurogenic collapse

Risk factors

- Excessive cord traction
- Fundal pressure (Credé)
- Fundal placental implant
- Placenta accreta
- Short umbilical cord
- Uterine atony
- Precipitous labor
- Macrosomia
- Grand multiparity
- Connective tissue disorders
- Prior inversion

03 Signs & Symptoms

RECOGNITION WINDOW: SECONDS TO MINUTES

EARLY · FIRST INDICATORS

Sudden & Local

- → **Sudden, severe** lower abdominal / pelvic pain
- → Smooth, round, dark-red **mass at introitus** or in vagina
- → **Fundus not palpable** abdominally (or feels "dimpled")
- → Sudden gush or steady stream of bright-red blood
- → Placenta may still be attached to the inverted mass

LATE · DECOMPENSATION

Shock · Red Flags

- **Bradycardia** — paradoxical, due to vagal stimulation
- **Profound hypotension** out of proportion to blood loss
- Pallor, cold clammy skin, diaphoresis
- Tachycardia (as hypovolemia progresses)
- Altered mental status, syncope, LOC
- Hemorrhagic shock: 1,500–2,000+ mL EBL

Pathognomonic Finding

A smooth, round, beefy-red mass protruding from the vagina + inability to palpate the uterine fundus abdominally = uterine inversion until proven otherwise.

04 Priority Nursing Interventions

ABCS · MASLOW PHYSIOLOGIC · TIME-CRITICAL

The Rule — ***Relax · Replace · Contract.*** *The uterus must be soft before reduction, then firmly contracted after — never reverse this order.*

01 · CALL

Activate emergency response

Call provider **STAT**, charge nurse, anesthesia, OR team, and blood bank. This is an **OB Code Pink**.

02 · ABC

Airway · Oxygen · Position

Supplemental O_2 via **non-rebreather at 10 L/min**. Place in **Trendelenburg** to improve cerebral perfusion.

03 · ACCESS

Two large-bore IVs

Establish **two 16–18 gauge IVs**. Rapid **isotonic crystalloid** (LR or NS) bolus. Send T&C for 2–4 units PRBC + FFP.

04 · MONITOR

Continuous hemodynamics

VS q5min, continuous SpO_2 and ECG, Foley with urometer for strict I&O, monitor for shock.

05 · STOP

Discontinue oxytocin

If oxytocin is infusing, **stop immediately**. A contracted cervical ring traps the inverted fundus and prevents reduction.

06 · DO NOT

Do not remove the placenta

If placenta is still attached, **leave it in place** until uterus is replaced. Detaching it now causes catastrophic hemorrhage.

07 · RELAX

Tocolytics (per order)

Anticipate **terbutaline, magnesium sulfate, or IV nitroglycerin** to relax uterus and cervical ring before manual reduction.

08 · REPLACE

Assist with Johnson maneuver

Provider manually replaces fundus through cervix (last-out, first-in principle). Anesthesia may be needed. Prepare for **laparotomy** if failed.

09 · CONTRACT

Uterotonics AFTER replacement

Restart **oxytocin**; give methylergonovine, carboprost, or misoprostol per order. Massage fundus to firm.

10 · PREVENT

Prevent re-inversion + infection

Maintain hand inside uterus until tone returns. Prophylactic **antibiotics**. Reassess fundus and lochia q15min × first hour.

05 Pharmacology

TWO-PHASE REGIMEN · ORDER MATTERS

PHASE 1 · BEFORE REPLACEMENT

Tocolytics — Relax the uterus

Goal: relax uterine muscle & cervical ring so the fundus can be pushed back through. **Do NOT give uterotonics yet.**

Terbutaline `0.25 mg SQ or IV`
β_2-agonist; smooth muscle relaxant. **SE:** tachycardia, tremor, hyperglycemia. Hold if HR > 120.

Magnesium sulfate `4 g IV over 20 min`
Smooth muscle relaxation. **Monitor:** DTRs, RR ≥ 12, urine ≥ 30 mL/hr. Antidote: calcium gluconate.

Nitroglycerin (IV) `50-100 mcg IV push`
Rapid uterine relaxation (seconds). **SE:** profound hypotension, headache. Anesthesia drug of choice.

Halogenated anesthetics `if in OR`
Sevoflurane / isoflurane — used by anesthesia for deep uterine relaxation during reduction under general.

PHASE 2 · AFTER REPLACEMENT

Uterotonics — Contract the uterus

Goal: restore tone, prevent re-inversion, and stop hemorrhage from atony. Begin **only after** fundus is replaced.

Oxytocin (Pitocin) `20-40 units in 1 L LR, IV`
First-line uterotonic. **SE:** hyponatremia (water intox), hypotension if bolused. Restart slowly.

Methylergonovine `0.2 mg IM`
Ergot alkaloid. **Contraindicated:** HTN, preeclampsia. Check BP before each dose.

Carboprost (Hemabate) `0.25 mg IM q15min`
Prostaglandin $F_2\alpha$. **Contraindicated:** asthma. **SE:** diarrhea, fever, bronchospasm.

Misoprostol (Cytotec) `800-1000 mcg PR`
Prostaglandin E_1. **SE:** fever, chills, shivering. Easy storage; rectal route during emergency.

06 NCLEX Test Traps ⚠

HIGH-YIELD DISTRACTORS · PRIORITY VS. WRONG ACTION

Wrong Action	Correct Priority
~~Pull the cord to remove the placenta still attached to the inverted fundus.~~	**Leave the placenta in place** until the uterus is replaced — removing it now causes catastrophic hemorrhage.
~~Give oxytocin (Pitocin) immediately because there is heavy bleeding.~~	**Stop oxytocin and give a tocolytic first.** Uterotonics tighten the cervical ring and prevent reduction.
~~Apply fundal pressure to expel "clots" through the vagina.~~	**Never apply fundal pressure.** The mass is the uterus itself — pressure worsens inversion.
~~Interpret bradycardia as reassuring or "normal postpartum slowing."~~	**Bradycardia + hypotension** in a hemorrhaging postpartum patient = neurogenic shock from vagal traction. **Red flag.**
~~Place patient in semi-Fowler's because of respiratory distress.~~	**Trendelenburg** (or supine with legs elevated) to maximize cerebral and uterine perfusion during shock.

07 Patient Education

RECOVERY · FUTURE PREGNANCIES · EMOTIONAL HEALTH

Hemorrhage Recovery

- Expect fatigue, dizziness, pallor for weeks
- Take iron + vitamin C as ordered; pair with protein
- Report SOB, chest pain, palpitations
- Slow position changes; fall precautions at home
- Follow-up CBC at 2 and 6 weeks postpartum

Future Pregnancies

- Inform every future OB provider of inversion history
- Recurrence risk is elevated — antepartum consult advised
- Plan delivery at facility with surgical / blood services
- Avoid home birth and unmonitored third stage
- Discuss active management of third stage with team

Infection & Healing

- Complete the full antibiotic course
- Report fever ≥ 100.4°F, foul lochia, pelvic pain
- Pelvic rest 4–6 wks: no tampons, sex, douching
- Perineal hygiene + peri-bottle after each void
- Notify provider of bright-red bleeding or large clots

Breastfeeding & Bonding

- Lactation may be delayed after major blood loss
- Skin-to-skin as soon as stable; consult lactation
- Rest, hydrate, eat protein-rich meals
- Accept help with feedings — fatigue is real
- Pumping can establish supply during recovery

Mental Health & Trauma

- Birth trauma is common — counseling is encouraged
- Watch for PTSD, intrusive memories, panic
- Screen for PPD at 2- and 6-week visits
- Partner / family support & debriefing matter
- Crisis: call 988 (Suicide & Crisis Lifeline)

Call the Provider If...

- Bleeding soaks one pad / hour
- Passing clots larger than a golf ball
- Fundus feels boggy or rises in abdomen
- Sudden return of heavy red bleeding
- Faintness, racing heart, or chest pain

08 Memory Boosters

MNEMONIC · SEQUENCE · PATTERN RECOGNITION

INVERT

- **I** **Identify** the mass at the introitus + absent fundus on abdominal exam.
- **N** **NO** cord traction, NO fundal pressure, NO placenta removal.
- **V** **Volume** resuscitate — two large-bore IVs, isotonic fluids, T&C blood.
- **E** **Emergency** call + **Elevate** (Trendelenburg) + O_2 10 L NRB.
- **R** **Relax** uterus with tocolytics, then **Replace** with Johnson maneuver.
- **T** **Tighten** uterus with oxytocin / methergine *after* replacement.

The 4 R's Sequence

1. **Recognize**
   Mass + absent fundus + sudden hypotension & bradycardia
2. **Resuscitate**
   O_2, IV fluids, blood products, Trendelenburg
3. **Relax & Replace**
   Tocolytic → manual reduction (Johnson)
4. **Restore tone**
   Uterotonics, fundal massage, observe

The Double Shock Pattern

A PATTERN UNIQUE TO UTERINE INVERSION · OFTEN TESTED

HEMORRHAGIC SHOCK

Uterine atony from the inverted fundus → rapid blood loss. **Tachycardia, hypotension, pallor, cool clammy skin, narrow pulse pressure, decreased urine output.**

NEUROGENIC SHOCK

Traction on round ligaments & peritoneum stimulates the vagus nerve. **Bradycardia (paradoxical), profound hypotension out of proportion to blood loss, warm dry skin, syncope.**