Uterine Rupture

A life-threatening tear through the uterine wall — minutes matter.

01 Definition & Overview

Uterine rupture is a complete or partial tear through all layers of the uterine wall (endometrium, myometrium, perimetrium) during pregnancy or labor.

It is a **true obstetric emergency** — without immediate surgical intervention, it leads to maternal hemorrhagic shock and fetal demise.

Complete rupture: all layers torn; fetus/placenta may extrude into abdomen.
Incomplete (dehiscence): peritoneum remains intact; less catastrophic.

~1%	<10min	#1
VBAC RISK	DELIVERY WINDOW	CAUSE: PRIOR C-S

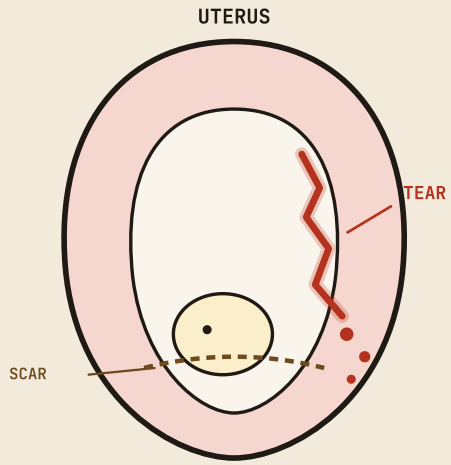

FIG. 1 — UTERINE RUPTURE ALONG PRIOR SCAR

02 Pathophysiology — Step by Step

1. **Weakened uterine wall** (prior C-section scar, surgery, overdistension, or hyperstimulation)
2. Intrauterine pressure **exceeds tissue tensile strength** during contractions
3. **Tear propagates** through myometrium → may extend to peritoneum (complete) or spare it (dehiscence)
4. Fetus, placenta & blood **extrude into peritoneal cavity** — uteroplacental circulation collapses
5. **Maternal hemorrhagic shock + fetal hypoxia / demise** within minutes

⚠ MAJOR RISK FACTORS

- **Prior C-section** — esp. classical (vertical) incision
- **TOLAC / VBAC** attempt (≈0.5–1% rupture rate)
- Previous uterine surgery (myomectomy, repair)
- **Oxytocin / misoprostol** overuse → tachysystole
- Grand multiparity (>5 births)
- Overdistension: multiples, polyhydramnios, macrosomia
- Blunt abdominal trauma (MVA, fall, assault)
- Obstructed / prolonged labor
- External cephalic version, internal podalic version

⚡ WHY THIS MATTERS

Uterine rupture has a **maternal mortality ~1–13%** and **perinatal mortality up to 60%** when delivery is delayed. **Definitive treatment is emergency C-section + repair or hysterectomy** — every minute of delay drops fetal survival.

Signs & Priority Interventions

03 Signs & Symptoms

EARLY / WARNING SIGNS

- **Sudden, severe abdominal pain** — patient describes a "tearing" or "ripping" sensation
- **Loss of fetal station** (presenting part recedes upward — hallmark sign)
- **Cessation of uterine contractions** — labor suddenly "stops"
- Abnormal FHR pattern: **late or variable decelerations**
- Maternal **tachycardia** & restlessness
- **Pain breaks through epidural** (very specific!)
- Change in abdominal contour / shape
- Vaginal bleeding (may be minimal — bleeding is often **internal**)

LATE / SEVERE — RED FLAGS

- RED **Fetal bradycardia — the #1 most common sign of rupture**
- RED **Loss of fetal heart tones (fetal demise)**
- RED **Palpable fetal parts through the abdominal wall**
- RED **Maternal hypotension, pallor, cool clammy skin**
- RED **Signs of hypovolemic shock: ↓BP, ↑HR, ↓UOP**
- RED **Hematuria (if rupture extends into bladder)**
- RED **Referred shoulder pain (diaphragmatic blood irritation)**
- RED **Loss of consciousness / impending cardiovascular collapse**

04 Priority Nursing Interventions (ABC + Maslow)

#	ACTION	WHAT & WHY
1	CALL for help	Activate rapid response / OB emergency team. **Notify provider STAT.** Mobilize OR & anesthesia.
2	STOP Pitocin	Immediately discontinue oxytocin / misoprostol infusion — removes hyperstimulation driving rupture.
3	Airway + O_2	**Administer O_2 at 8–10 L/min via non-rebreather** mask to maximize fetal oxygenation.
4	Position	Place mother in **lateral position with hips elevated** (Trendelenburg) to ↑ uteroplacental perfusion.
5	IV access	Establish **two large-bore IVs (16–18g)**; infuse isotonic crystalloid (LR or 0.9% NS) wide open.
6	Blood prep	**Type & crossmatch ≥ 2–4 units PRBCs.** Prepare FFP, platelets; anticipate massive transfusion protocol.
7	Monitor	Continuous **EFM** + maternal VS q5 min. Track UOP via Foley (target ≥30 mL/hr).
8	Prep for OR	**Emergency C-section is definitive.** NPO, consent, shave/prep abdomen, indwelling catheter, surgical site marked.
9	Support	Brief, calm explanations to patient/family. Notify NICU for neonatal resuscitation team.

Pharmacology & Test Traps

05 Pharmacology

Oxytocin (Pitocin) · UTEROTONIC

ACTION: Stimulates uterine contractions.
IN RUPTURE: ⚠ STOP immediately — contributing cause.
POST-DELIVERY: May be restarted to control PPH after repair.
WATCH: Tachysystole (>5 ctx/10 min), water intoxication.

Misoprostol (Cytotec) · PROSTAGLANDIN E1

ACTION: Cervical ripening / labor induction.
IN RUPTURE: CONTRAINDICATED in patients with prior C-section — major risk factor for rupture.
EDUCATION: Never given with previous uterine scar.

IV Crystalloids · LR / 0.9% NS

ACTION: Volume resuscitation; restore intravascular volume.
DOSE: 1–2 L bolus, then titrate to BP/UOP.
WATCH: Pulmonary edema if overload; LR preferred in active hemorrhage.

Blood Products · PRBC, FFP, PLT

ACTION: Replace lost RBCs / clotting factors.
MASSIVE TRANSFUSION RATIO: 1:1:1 (PRBC:FFP:platelets).
WATCH: Transfusion reactions, hypocalcemia (citrate), hyperkalemia.

Broad-spectrum Antibiotics · PROPHYLAXIS

ACTION: Prevent post-op infection (peritonitis, endometritis).
COMMON: Cefazolin 2 g IV pre-incision; add anaerobic coverage if perforation.

Tocolytics · TERBUTALINE, MAG SULFATE

ACTION: Relax uterus.
IN RUPTURE: NOT a substitute for delivery. May be used briefly as a bridge to OR if FHR concerning.
WATCH: Maternal tachycardia, pulmonary edema (terb); ↓ DTRs, resp depression (mag).

06 NCLEX Test Traps ⚠

1. **Confusing rupture with placental abruption.**
   ✗ Trap: Picking abruption because of "abdominal pain."
   ✓ Key: Rupture → **SUDDEN tearing**, contractions **STOP**, loss of station, internal bleeding.

2. **Expecting visible vaginal bleeding.**
   ✗ Trap: Ruling out rupture because there's "no bleeding."
   ✓ Key: Bleeding is often **concealed (intra-abdominal)**. Watch for shock without obvious blood loss.

3. **Increasing oxytocin to "restart" labor.**
   ✗ Trap: Choosing "↑ Pitocin rate."
   ✓ Key: **STOP oxytocin first** — it is contributing to the rupture.

4. **Choosing tocolytics over delivery.**
   ✗ Trap: "Give terbutaline to fix contractions."
   ✓ Key: **Emergency C-section is the only definitive treatment.**

5. **Missing fetal bradycardia as the #1 sign.**
   ✗ Trap: Focusing only on maternal symptoms.
   ✓ Key: **Fetal bradycardia is the most common & earliest objective sign.**

6. **Mistaking rupture for tachysystole.**
   ✗ Trap: Calling it "hyperstimulation" only.
   ✓ Key: Rupture adds **severe pain + shock + loss of station + FHR drop**.

RUPTURE VS ABRUPTION — DON'T MIX THESE UP

FEATURE	UTERINE RUPTURE	PLACENTAL ABRUPTION
Pain	**Sudden, tearing**, then may ease	**Continuous, board-like**, rigid abdomen
Contractions	**STOP suddenly**	Continue / hypertonic
Bleeding	Often **concealed (internal)**	**Dark red vaginal** bleeding (may be concealed)
Fetal station	**Loss / recedes** ⚠	Unchanged
FHR	**Bradycardia / absent**	Late decels, ↓ variability
#1 Risk	Prior C-section / VBAC	HTN, cocaine, trauma, prior abruption

Patient Education & Memory

07 Patient Education

TOLAC/VBAC counseling: Discuss ~0.5–1% rupture risk; deliver only at hospitals with 24/7 surgical capability.

Report immediately: sudden severe abdominal pain, decreased fetal movement, vaginal bleeding, or pain that "breaks through" epidural.

Avoid Cytotec (misoprostol) for cervical ripening if you have any prior uterine scar.

Trauma in pregnancy: seek evaluation after any MVA, fall, or abdominal blow — even if you "feel fine."

Future pregnancies after rupture: require **scheduled C-section before labor** (typically 36–37 wks); VBAC contraindicated.

Post-op recovery: no heavy lifting (>10 lbs) × 6 wks; watch for fever, drainage, foul lochia (infection).

Contraception & spacing: wait minimum 18–24 months before next pregnancy to allow scar healing.

Emotional health: screen for PTSD, postpartum depression, perinatal loss support resources.

08 Memory Boosters & Mnemonics

TEAR Classic Signs of Rupture

- **T** — **Tearing** pain (sudden, severe, & "ripping")
- **E** — **Evacuated** station (presenting part recedes)
- **A** — **Abnormal FHR** — bradycardia is #1
- **R** — **Reduced** / absent contractions ("labor stops")

STOP Emergency Nursing Cascade

- **S** — **Stop** oxytocin / Pitocin immediately
- **T** — **Two** large-bore IVs + Type & crossmatch
- **O** — **Oxygen** 8–10 L NRB + OR mobilization
- **P** — **Prep** for emergency C-section (definitive tx)

SCARS Risk Factors at a Glance

S	C	A	R	S
Scarred uterus prior C-S/surgery	**Contraction** overload oxytocin / Cytotec	**Abdominal** trauma MVA / fall	**Repeated** births grand multipara	**Stretched** uterus multiples / poly

🧠 **PATTERN RECOGNITION TIP**

If the NCLEX gives you a patient with **prior C-section + on Pitocin + sudden tearing pain + fetal bradycardia + loss of station** — the answer is **uterine rupture**, and your **first action is to STOP THE PITOCIN**, followed by preparing for emergency C-section. Bleeding may or may not be visible — don't be fooled by its absence.