

Ectopic Pregnancy

An embryo grows in the wrong place—usually the tube—and can burst it, causing hidden bleeding that kills if we do not catch it in time.

THE ONE-LINE TRUTH

A fertilized egg plants itself and starts growing outside the uterus, usually in the narrow fallopian tube.

The chain — how it unfolds

1. Dark vaginal bleeding starts (often lighter than a normal period) — why: The embryo makes human chorionic gonadotropin (hCG, the pregnancy hormone), but levels are lower and rise more slowly than in a normal pregnancy, so the uterine lining (endometrium) is not supported well and starts to shed, causing irregular, dark bleeding.
2. Sharp pain on one side of the lower belly or pelvis — why: The embryo digs into the tube wall and stretches it; trophoblast cells invade and open blood vessels, so blood leaks out and irritates the peritoneum (the thin lining covering organs), which has pain nerves—causing sharp, one-sided pain where the ectopic sits.
3. Pain spreads across the lower belly as more blood leaks — why: Blood pools in the pelvis and spreads under gravity, irritating more of the peritoneum, so pain becomes diffuse and constant instead of just one-sided.
4. Shoulder-tip pain appears (especially when lying flat) — why: Blood climbs up beside the liver and pools under the diaphragm (the breathing muscle at the top of the belly); it irritates the phrenic nerve (which runs through the diaphragm and shares nerve roots with the shoulder), tricking the brain into feeling referred pain at the shoulder tip—this is a red-flag sign of internal bleeding.
5. Cervix becomes tender when the doctor moves it (cervical motion tenderness) — why: Blood pooling in the pelvis irritates the tissue around the cervix and uterus, so when the examiner pushes the cervix side to side, it rocks the uterus and stirs the blood, causing sharp pain—mimicking pelvic inflammatory disease but without infection.
6. If the tube ruptures: sudden, severe pain and feeling faint — why: The tube tears open and blood floods into the belly fast—sometimes a liter or more in minutes; the sudden irritation of the entire peritoneum causes extreme pain, and rapid blood loss drops blood pressure, making the patient feel faint, dizzy, or about to pass out.

7. Shock sets in: pale skin, racing heart, low blood pressure, confusion — why: Massive blood loss means the heart cannot fill or pump enough oxygenated blood; the brain and organs are starved of oxygen, so the sympathetic nervous system maxes out—heart races over 120, blood pressure drops below 90 systolic, skin is cold and clammy, and the patient becomes confused or loses consciousness.
8. Without emergency surgery, death follows within minutes to hours — why: Ongoing bleeding (hemorrhage) and shock shut down the kidneys, liver, and brain; lactic acid builds up (lactic too much acid in the blood (acidosis)) as cells switch to survival mode without oxygen, the heart cannot pump against falling volume, and multi-organ failure leads to cardiac arrest and death.

Spot it — what you see, and why

- Missed period with a positive pregnancy test: The fertilized egg attached somewhere outside the uterus (usually in one of the tubes that carry eggs), but it still makes the pregnancy hormone (hCG) that shows up on a test.
- Sharp or cramping pain on one side of the belly or pelvis: The growing embryo stretches or tears the narrow tube (or wherever it landed), irritating nerves and tissue that were never meant to hold a pregnancy.
- Vaginal bleeding or spotting (often lighter or darker than a normal period): The lining of the uterus started to thicken for a pregnancy, but when the embryo is elsewhere the lining sheds unevenly, and bleeding can also come from the damaged tube or tissue at the ectopic site.
- Shoulder or neck pain that seems unrelated: If the tube ruptures, blood spills into the belly and irritates the diaphragm (the breathing muscle under the lungs); nerves from the diaphragm share a pathway with nerves to the shoulder, so the brain feels pain there instead.
- Dizziness, fainting, or feeling like you might pass out
- Severe, sudden belly pain that gets worse quickly: The tube (or other site) tears open (ruptures), spilling blood and tissue into the belly cavity all at once, which causes intense pain and triggers the body's alarm signals.

Red flags — act now

- Sudden severe belly pain with dizziness or fainting (suggests rupture and internal bleeding)
- Shoulder or neck pain along with belly pain and a positive pregnancy test (blood irritating the diaphragm)
- Low blood pressure, fast heart rate, or pale/clammy skin (signs of shock from blood loss)
- Severe pain that keeps getting worse despite rest (the ectopic site may be tearing)

- Positive pregnancy test but no visible pregnancy in the uterus on ultrasound and hCG above the level where you should see something (discriminatory zone ~1500–2000 mIU/mL)

Treat it — in this order

1. Emergency laparoscopy or laparotomy (surgery to open the belly) with salpingectomy (removing the whole tube) or salpingostomy (cutting open the tube and removing the embryo) if the patient is unstable (shock, dropping blood pressure) or the tube has ruptured → Stops the bleeding by removing the burst tube or the mass inside it, so blood pressure stabilizes and shock reverses. Surgery is the only way to fix active bleeding — nothing else will stop a ruptured tube.
2. Methotrexate — either single-dose intramuscular (50 mg/m² body surface area) or multi-dose protocol (1 mg/kg on days 1, 3, 5, 7) — if the patient is stable, beta-hCG is below 5,000 mIU/mL, the ectopic mass is smaller than 3.5 cm, there is no fetal heartbeat, and no signs of rupture → Stops the pregnancy cells from dividing (methotrexate blocks folic acid, which cells need to copy their DNA). The embryo stops growing, dies, and the body slowly absorbs the tissue over 1–2 weeks, avoiding surgery.
3. IV fluid resuscitation (normal saline or lactated Ringer's bolus 500–1,000 mL wide open) and packed red blood cell transfusion if systolic BP is below 90 mmHg, heart rate is above 110 bpm, or hemoglobin drops below 7 g/dL → Replaces lost blood volume so the heart can pump oxygen to the brain and kidneys. Reverses bleeding-driven (hemorrhagic) shock and buys time until surgery can stop the bleeding.
4. RhoGAM (anti-D immune globulin) 50–120 mcg intramuscular within 72 hours if the patient is Rh-negative → Blocks the mother's immune system from making antibodies against Rh-positive blood. If fetal blood (which may be Rh-positive) mixes with maternal blood during the ectopic pregnancy or treatment, the mother's body could attack Rh-positive babies in future pregnancies. RhoGAM prevents that reaction.
5. Serial beta-hCG monitoring every 48–72 hours after methotrexate (expect at least a 15% drop between days 4 and 7) and weekly ultrasound to confirm the mass is shrinking and no rupture has happened → Shows whether methotrexate is working or whether the ectopic pregnancy is still growing (meaning methotrexate failed and surgery is needed). Catches rupture early before the patient collapses at home.

Your top priorities at the bedside

1. Establish large-bore IV access with two 18-gauge or larger catheters and start normal saline wide open if systolic BP is below 90 or heart rate is above 110 — why: Ruptured ectopic pregnancy causes hemoperitoneum (blood filling the abdomen) and bleeding-driven (hemorrhagic) shock (dangerous drop in blood volume); large IVs let us push fluids and blood fast to maintain blood flow (perfusion) (blood flow) to the brain, heart, and kidneys before the patient arrests
2. Type and crossmatch blood for at least 2 units of packed red blood cells and notify the blood bank that this is a potential emergency release — why: Ruptured ectopic can cause life-threatening blood loss of 1 to 2 liters or more into the abdomen; having crossmatched blood ready prevents delays when hemoglobin drops and tissue oxygen delivery falls dangerously low
3. Measure vital signs every 5 to 15 minutes and watch for systolic BP dropping below 90, heart rate climbing above 110, or new confusion and pale cool skin — why: Vital sign trends reveal progressive bleeding (hemorrhage) (ongoing bleeding) before the patient crashes; a fast heart rate (tachycardia) (fast heart rate) and low blood pressure (hypotension) (low blood pressure) are late shock signs meaning she has already lost 30% or more of her blood volume and needs immediate surgery