

Case Summary

Chief Complaint

"Abdominal pain, nausea, vomiting, diarrhea"

HPI

A 23-year-old female, G4P3 at 19 weeks gestation by date of last menstrual period, with "low-riding placenta," 3 previous c-sections, presented to the Emergency Department with abdominal pain, nausea, vomiting, and diarrhea. Symptoms began a few hours prior to presentation. Per EMS, the patient was hypotensive to 83/54 in the field. Patient complained of severe abdominal pain. She denied vaginal bleeding. She denied chest pain, shortness of breath, fevers, chills, or trauma. She believed the symptoms were caused by "eating something bad."

Physical Exam

BP 101/56 HR 109 RR 20 T 97.6 SpO2 100% on RA

General: in acute distress, lethargic
Cardiovascular: tachycardic
Abdomen: gravid, diffusely tender, +rebound/+guarding

Pertinent Laboratory Data

WBC 24	Co2 17
Hgb 9.3 (baseline 13.1)	Cr 1.5 (baseline 0.6)
Hct 28.5	Glucose 262
Plt 310	

Clinical Questions

- 1) What is the differential diagnosis?
- 2) What is the diagnosis?
- 3) What are some risk factors for this disease entity?

Answers

- 1) The differential diagnosis should include both gynecologic and non-gynecologic etiologies, such as: hemorrhagic cyst, uterine rupture, ruptured appendicitis, perforated viscus, blunt trauma.
- 2) Uterine rupture.
- 3) Prior c-section is the biggest risk factor. Some other risk factors include, malpresentation, hypertension, myomectomy, connective tissue disorder, bicornuate uterus.

Diagnostic Radiology

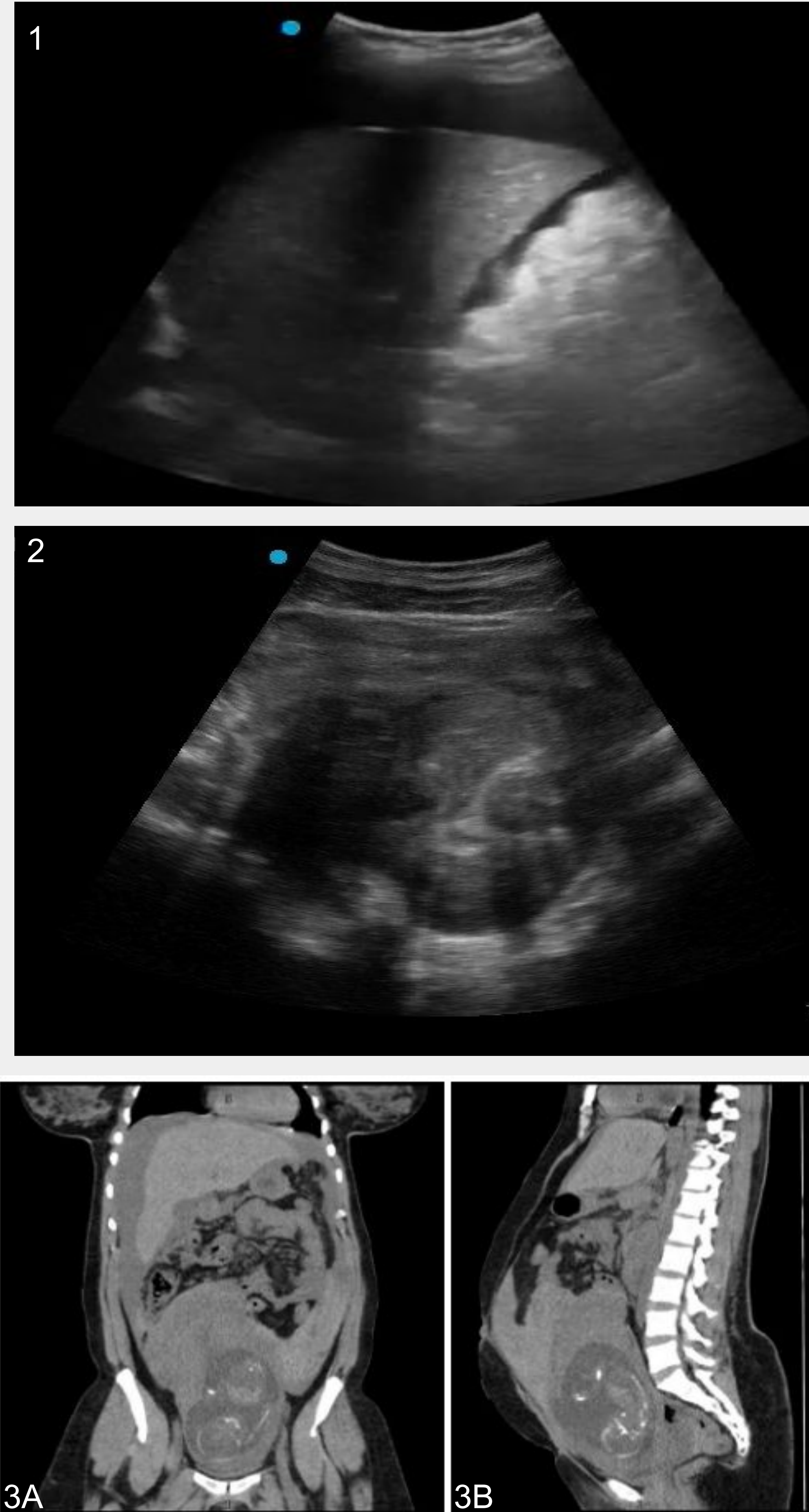


Image 1. Right upper quadrant view of RUSH exam. Liver tip is visualized surrounded by anechoic material, indicating free fluid. **Image 2.** Pelvic view of RUSH exam. Uterus is visualized with surrounding heterogenous hypoechoic material, concerning for hemoperitoneum. **Image 3. A.** CT abdomen/pelvis, coronal and **B.** sagittal views. Shown is a gravid uterus with a defect in the anterior uterine wall, fluid anterior to the uterus, and massive hemoperitoneum, concerning for active hemorrhage and uterine rupture.

References

Savukyne E, Bykovaite-Stankeviciene R, Machtejeviene E, Nadisauskiene R, Maciuleviciene R. Symptomatic Uterine Rupture: A Fifteen Year Review. Medicina (Kaunas). 2020 Oct 29;56(11):574. Doi: 10.3390/medicina56110574. PMID: 33138157; PMCID: PMC7693983.

Guise JM, McDonagh MS, Osterweil P, Nygren P, Chan BK, Helfand M. Systematic review of the incidence and consequences of uterine rupture in women with previous caesarean section. BMJ. 2004 Jul 3;329(7456):19-25. doi: 10.1136/bmj.329.7456.19. PMID: 15231616; PMCID: PMC443444.

Case Discussion

Due to the patient's hypotension, a RUSH exam was performed, which showed free fluid in the RUQ of the abdomen as well as the LUQ. Transabdominal pelvic sonography was limited due to pain, but an IUP was visualized and FHR was measured at 158 bpm. The differential diagnosis that should be considered for this patient includes both gynecologic and non-gynecologic etiologies for her symptoms. Given the patient's gestational age and visible IUP on POCUS, ectopic pregnancy was unlikely, however, uterine rupture and ruptured/hemorrhagic ovarian cyst were still on the differential. The patient was peritoneal and hypotensive, thus the free fluid visualized on POCUS was likely hemoperitoneum. Other causes of hemoperitoneum such as ruptured appendicitis and perforated viscus should also be considered. This patient was resuscitated with fluids initially, and both OB/GYN and surgery were consulted immediately. The patient was found to have a Hgb of 9.3 from a baseline of 13.1, and she was given 1 unit of PRBCs following fluid resuscitation. The patient was consented for CT angiography abdomen/pelvis, which revealed uterine rupture. The patient was taken to the OR by GYN and surgery, where she underwent evacuation of hemoperitoneum, the fetus, and placenta. The uterine rupture was subsequently repaired and the patient was ultimately discharged home with a nexplanon.

Uterine rupture is rare (one large population study published from 2003 reported a 0.035% occurrence with 42 out of 117,685 of single gestation deliveries), but the risk increases significantly in patients with prior c-section. Patients who have a prior uterine scar from c-section or myomectomy are recommended to have repeated c-section deliveries, especially when there is failure of progression of labor.

Clinical Pearls

In a hypotensive or peritoneal patient, point-of-care ultrasound (FAST or RUSH) can expedite the diagnosis of life threatening conditions and can provide information that warrants early specialist consultation and intervention.

Uterine rupture is most common in the third trimester, but can be less commonly seen in the second trimester (as in this patient), and rarely in the first trimester.

