

Uterine Rupture in Pregnancy; Imaging beyond Ultrasound

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Case Note

A 33 year old woman, G5P2113, presented at 31 weeks 2 days with chief complaint of right lower quadrant (RLQ) abdominal pain. Two days prior to presentation, she experienced fever, chills, dysuria, and occasional contractions. Obstetric history was significant for three cesarean deliveries (CD), including one preterm secondary to placenta previa. Upon initial evaluation her vital signs were: temperature of 100.3 F; pulse 100-127 beats per minute, blood pressure of 116/68 mmHg, and a respiratory rate of 20 per minute with a 98% O₂ saturation on room air. On physical examination her abdomen was soft, with point tenderness consistent with a positive McBurney's sign without rebound or guarding. Pelvic examination revealed a cervix that was not dilating nor effacing, with an engaged cephalic fetus. Fetal heart tracing (FHTs) was consistent with category II; a normal fetal heart rate baseline, presence of moderate variability, and accelerations, however with occasional decelerations. Labwork revealed a WBC of 13900/mm³; hemoglobin 12.3 g/dL; hematocrit 35.9% and platelets 190,000/mm³. Pyelonephritis was the working diagnosis and intravenous antibiotics and hydration were initiated, however concern for appendicitis was still present. The abdominal tenderness was progressively worsening and new onset rebound and guarding developed. Further testing was performed including an abdominal ultrasound that was inconclusive. The ultrasound revealed a singleton gestation with normal amniotic fluid index, posterior placenta, and normal lower uterine segment. A transvaginal evaluation was not performed. Computed Tomography of the abdomen and pelvis followed the ultrasound to rule out appendicitis. The radiologist reported a normal appendix, however with ascites/free fluid within the paracolic gutters and Morison's pouch and a focal anterior out pouching and thinning of the myometrium in the lower uterine segment, suggestive of uterine rupture (Figure 1). Emergency CD was performed accordingly. Intraoperatively, a 1000 cc hemoperitoneum was encountered and uterine rupture confirmed with an intact bulging amniotic sac. A viable male infant with Apgar score of 6/8 was delivered. Postoperative course was uncomplicated.

Conclusion

The approach to the pregnant patient with acute abdomen could be very challenging [1]. A wide range of obstetrical and non-obstetrical conditions [2] should be considered, and delay in diagnosis could lead to catastrophic outcomes [3,4]. Uterine rupture should be high on the differential when evaluating abdominal pain in pregnancy [5,6], especially with prior cesarean and category II FHTs. Risk factors in this case are multiple previous CD, short inter-pregnancy intervals, and previous preterm CD.

Theilen et al. recently called the American College of Radiology recommendation of initial ultrasound imaging for appendicitis evaluation in pregnancy into question in their study of magnetic

resonance imaging (MRI) [7]. They concluded that MRI is the imaging modality of choice for this population in settings in which MRI is readily available. They included 171 pregnant patients with a similar clinical picture to our patient, however none had evidence of uterine rupture, which makes this case unique. In addition, MRI was not readily available for our patient from a logistical standpoint, thus CT was performed.

In conclusion, clinical suspicion and systematic approach to acute abdominal pain in pregnancy can prevent misdiagnosis. Alternative imaging methods in pregnancy as CT are valuable when ultrasound examination cannot provide clear or definitive information to define the diagnosis.

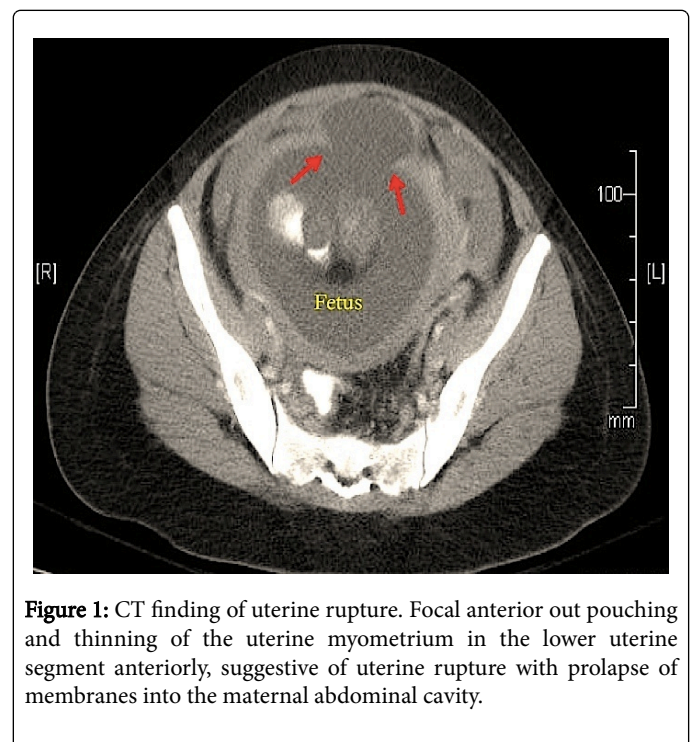


Figure 1: CT finding of uterine rupture. Focal anterior out pouching and thinning of the uterine myometrium in the lower uterine segment anteriorly, suggestive of uterine rupture with prolapse of membranes into the maternal abdominal cavity.

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