Title: Preterm Uterine Rupture in the Setting of a Prior Classical Cesarean Section; A Case Series and Literature Review

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Background: Uterine rupture is a relatively uncommon obstetric emergency involving the complete or partial tearing of the uterine wall, most often encountered in association with prior cesarean deliveries or uterine surgeries. Uterine ruptures typically occur during labor, especially in women attempting a trial of labor after a prior cesarean section but may also happen during labor in patients without prior uterine surgery. Symptoms include severe abdominal pain, abnormal fetal heart rate, vaginal bleeding, and changes in uterine contraction patterns. As uterine rupture is an emergency complication of pregnancy, these symptoms may come on acutely and require brisk surgical intervention to prevent morbidity and mortality in both mother and fetus. Risk factors include prior cesarean sections, particularly classical or vertical incisions, prior myomectomies, labor induction/augmentation, and short interval pregnancies. Immediate surgical intervention, usually emergency cesarean with hysterotomy repair, is required to minimize morbidity and for optimal maternal and neonatal outcomes.

Objective: To emphasize the potentially catastrophic nature of uterine rupture in patients at high risk for adverse maternal and fetal outcomes.

Methods: Chart review of recent cases of interest and literature review of the subject matter.

Case Presentations: In the first case, a 29-year-old female, G3P0201 at 24 weeks 2 days EGA, presented as a maternal transport for IUGR and abdominal pain. She had a primary classical cesarean at 27 weeks EGA for placental abruption, and her second pregnancy ended in repeat cesarean after a 24 week intrauterine fetal demise and uterine rupture during labor induction. She would have two days of quiescence before experiencing sudden pain leading to an emergency cesarean section revealing a hemoperitoneum and complete uterine dehiscence. Fortunately, the case ended well for both the mother and her baby.

In the second case, a 37-year-old female, G11P0828 at 32 weeks 4 days gestational age who presented to labor and delivery triage with preterm contractions. She had two prior cesarean sections, the first with a T-extension. Her second cesarean section included a possible uterine rupture with a thin lower uterine segment found in the operating room. She had initially reported only mild cramping, and was kept overnight only for a course of betamethasone steroids and magnesium. Her baby suddenly demonstrated terminal bradycardia and leakage of fluid. Her condition quickly

deteriorated and her abdomen became severely tender. Emergency Cesarean section found a complete uterine rupture with the fetal head and abdomen found in the patient's right upper quadrant. Fortunately, the case ended well for both the mother and her baby.

Results: Both cases discussed demonstrated cases of uterine rupture that required emergent surgical intervention for the survival of both the mother and her child. Both cases also were initiated with minimal symptoms before the development of this emergency procedure.

Discussion: Uterine rupture is an uncommon but life-threatening complication, as demonstrated by these cases of spontaneous preterm uterine ruptures. Prior classical cesarean section and history of prior uterine rupture are both strong risk factors for a uterine rupture. Recognition and discussion of such risk factors are imperative for such patients, as only in doing so can you achieve prompt diagnosis and intervention, which are critical for improving maternal and fetal outcomes.