Title: Treatment Resistant Cesarean Scar Ectopic Pregnancy

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Background/Synopsis: Ectopic pregnancies (EP) account for 2% of all pregnancies and most commonly implant within the ampulla of the fallopian tube. One of the more rare forms of an EP is a cesarean scar pregnancy (CSP). CSP accounts for 6% of all EP and are associated with higher maternal morbidity and mortality due to risk of uterine rupture and major hemorrhage. Because this type of EP is rare, there is not a standard protocol for management. A patient's clinical symptoms, pregnancy viability, gestational age, and evidence of myometrial deficiency determine the course of action. Both surgical methods and medical management with methotrexate and potassium chloride as embryocide are cited in the literature.

Objective/Purpose: To report a rare advanced ectopic pregnancy within the cesarean scar that was refractory to medical management.

Method: Case Report

Results: A 40-year-old G4P3002 female presented with an acute history of abdominal cramping and vaginal bleeding with a past obstetric history significant for two term cesarean deliveries and a term vaginal birth after cesarean delivery. An ultrasound confirmed a 11+2 week CSP with evidence of anterior myometrium extrusion into the pelvic cavity. The patient was counseled on treatment options and decided to proceed with medical management and interval hysterectomy. Ultrasound was used to identify the fetal heart and 2 cc of KCl was administered with subsequent cessation of fetal cardiac activity followed by fifty mg of methotrexate (MTX). Five days after discharge, the patient presented to the emergency room with mucositis and was found to have transaminitis and thrombocytopenia. Almost a month after the KCl and MTX injection, the patient re-presented to the obstetrics screening room with increased vaginal bleeding and abdominal pain, refractory to acetaminophen. She was febrile and tachycardic with leukocytosis. Her vaginal exam was significant for active bleeding, a small amount of products of conception

protruding from the cervical os, and a uterus 10-12 weeks in size. Due to concerns for adherent products of conception and developing endometritis, she was started on empiric gentamicin and clindamycin with plans for further surgical management. Initially the team proceeded with a diagnostic laparoscopy, which was converted to a total abdominal hysterectomy with resection of a 10x10 cm products of conception, bilateral salpingectomy, cystoscopy, and left ureterolysis. Her postoperative course was complicated by persistent fevers, incisional abscess, acute kidney injury, and slow to return bowel function. Two weeks later, she was seen in Gynecology Oncology clinic with resolution of her symptoms and in stable condition.

Conclusions: Since 1996, the rate of cesarean deliveries has steadily increased, accounting for 32.1% of all deliveries in 2021. While generally safe, cesarean deliveries are not without risk, including the potential of uterine rupture, placenta accreta spectrum, infertility, intraabdominal adhesions, or ectopic pregnancy. If a woman is diagnosed with a CSP, it is imperative that she receive prompt treatment to prevent further medical complications. Our patient received treatment that was consistent with many cases in the literature, but unfortunately her clinical course was complicated by the nature of the medications she was administered and the complexity of her pregnancy. This combined with a lack of standardization in protocols is the reason why many are calling for new methods and algorithms to be implemented for treatment of CSP. Possible future alternative regimens use aromatase inhibitors (letrozole) or EGFR tyrosine kinase inhibitors (gefitinib) as replacements or adjunct therapy to MTX. Ultimately, the goal would be to safely terminate these nonviable pregnancies with minimal side effects and maintain fertility for those who desire future pregnancy.