ECRONICON OPEN ACCESS

EC CLINICAL AND MEDICAL CASE REPORTS

Case Report

# Case Report: Abnormal Placentation with Placenta Accreta in a Post Ablation Pregnancy

**Amanda Mirmanesh[1]*, Raechel Fockler[1] and Woojin Chong[1,2]**

[1]*Department of Obstetrics and Gynecology, Inspira Health Network. Vineland, NJ, U.S.A*

[2]*Inspira Health Urogynecology. Vineland, NJ, U.S.A*

***Corresponding Author:** Amanda Mirmanesh, Department of Obstetrics and Gynecology, Inspira Health Network. Vineland, NJ, U.S.A.

**Received:** May 18, 2023; **Published:** May 31, 2023

## Abstract

Placenta Accreta Spectrum (PAS) is a rare complication of pregnancy in which the placenta abnormally implants into, and in rarer cases, through the uterine wall which leads to increased maternal morbidity with risk of maternal mortality.

PAS diagnosed at the time of delivery is associated with severe maternal morbidity largely due to elevated blood loss which can result in complications such as DIC and even maternal death. We present a case of a woman with PAS to reiterate the importance of close antepartum monitoring along with having a high suspicion for placenta accreta in a patient with risk factors, specifically with a history of endometrial ablation along with low lying placenta.

***Keywords:*** *Abnormal Placentation; Placenta Accreta Spectrum (PAS); Ablation Pregnancy*

## Introduction

Placenta Accreta Spectrum (PAS) is described as an abnormal trophoblastic invasion of part or all of the placenta into the myometrium of the uterus, which may extend beyond the uterine wall into other organs such as the bladder [1]. PAS includes placenta accreta, in which the placental villi attach to the myometrium (instead of the decidua), placenta increta, in which the placental villi penetrate into the myometrium of the uterus, and placenta percreta, in which the placental villi penetrate through the uterine myometrium and into the uterine serosa or adjacent organs [2]. The maternal morbidity and mortality of PAS is very high due to life-threatening hemorrhage. Patients are more likely to require hysterectomy at time of delivery or during the postpartum period [3].

There are known risk factors for PAS, the most common being prior cesarean delivery. This risk increases with the number of prior cesarean sections. The risk of PAS increases 6.74% with 5 or more prior cesarean deliveries [7]. Additional risk factors include advanced maternal age, multiparity, prior uterine surgery or curettage, history of endometrial ablation, Asherman syndrome and placenta previa [8-10]. Ideally, cases of PAS are identified during the antepartum period, but there are cases that are only identified at the time of delivery when difficulty is encountered during placental removal, contributing to high maternal morbidity and possibly mortality.

Data have shown that the rate of PAS is increasing. According to a 2019 meta-analysis, the prevalence rates of PAS range from 0.01 - 1.1% [4]. The current theory of the increase in PAS is due to the increase in overall cesarean delivery rates in the United States, which has increased from 20.7% in 1996 [5] to 32.1% in 2021 [6].

Endometrial ablation is a known risk factor for PAS. Endometrial ablation is a procedure used for abnormal uterine bleeding in premenopausal women, specifically heavy vaginal bleeding. It is a more conservative option for patients who do not desire definitive surgical therapy with hysterectomy. Endometrial ablation destroys the functional is layer of the endometrium, to the level of the stratum basalis. This may result in intrauterine adhesions, atrophy and fibrosis [11]. In some cases, the functional endometrium may remain [11] or regenerate [12]. It is important to educate patients that endometrial ablation is not a form of contraception and pregnancy after endometrial ablation is not recommended as it can increase the risk of severe pregnancy complications. Known pregnancy risks after endometrial ablation include ectopic pregnancy, spontaneous abortion, preterm delivery, preterm premature rupture of membranes, intrauterine growth restriction, fetal anomalies, uterine rupture, and PAS [11].

In this current case report, we describe a patient with a prior endometrial ablation who became pregnant and delivered at term with an undiagnosed placental accreta, which was only recognized at the time of delivery, consequently requiring cesarean hysterectomy.

## Case Presentation

A 38-year-old female Gravida 1 Para 0 at 37 weeks gestational age presented to Labor and Delivery with complaints of headache unrelieved by multiple medications, vision changes and right upper quadrant pain. The vital signs on presentation included a blood pressure of 138/81 millimeters of Mercury, heart rate of 91 beats/minute, temporal temperature 36.5 degrees Celsius and respiratory rate of 16 breaths/minute. On exam, patient appeared in no acute distress with heart regular rate and rhythm. Lungs were clear to auscultation bilaterally and abdomen was noted to be gravid with estimated fetal weight by *Leopold's* 8 pounds. On exam, cervix was found to be closed, thick and high. Initial labs drawn during evaluation demonstrated a mildly elevated white blood cell count (WBC) at 14.1 x $10^9$/L, hemoglobin 12.1 g/dL, platelet count 297 x $10^9$/L, Prothrombin time (PT) 10.3 seconds, Partial Thromboplastin time (PTT) 26.9 seconds, International Normalized Ratio (INR) 0.9, Fibrinogen 538 mg/dL, Blood Urea Nitrogen/Creatinine (BUN/Cr) 10/0.57 mg/dL, Alanine transaminase (ALT) < 9 U/L, Aspartate transaminase (AST) 15 U/L, Lactate Dehydrogenase (LDH) 191 IU/L, Uric acid 3.7 mg/dL, COVID negative, and Rhinovirus/Enterovirus positive.

Pregnancy was complicated by chronic hypertension, anxiety, gestational diabetes type 2 for which she was taking Metformin 500 mg daily, and a low-lying left lateral posterior placenta 1.07 cm from the cervical os on ultrasound at 32.4 weeks gestational age (Figure 1). Additional past medical history included postural orthostatic tachycardia syndrome, polycystic ovarian syndrome, migraines, restless leg syndrome and obesity with body mass index (BMI) of 41. Past surgical history included endometrial ablation, vertical sleeve gastrectomy and laparoscopic cholecystectomy. The patient reports she had resumption of normal menses after endometrial ablation.

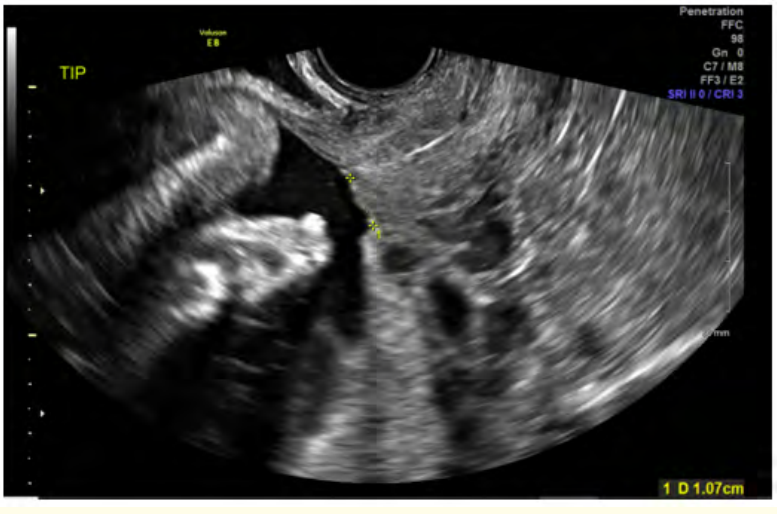


***Figure 1:*** *Left lateral low-lying posterior placenta at 32.4 weeks gestational age: Ultrasound image of left lateral low-lying posterior placenta 1.07 cm from internal cervical os on 32.4 week growth ultrasound.*

Patient's antepartum course was complicated by diagnosis of a low-lying placenta 1.59 cm from internal cervical os, diagnosed by Maternal Fetal Medicine (MFM) at 19.4 weeks gestational age (Figure 2), as well as an episode of vaginal spotting at 20.5 weeks gestational age requiring evaluation in the Obstetric Emergency Department. Patient continued to follow with MFM and on a growth scan at 28.6 weeks gestational age, the placenta remained posterior and low-lying, less than 1 cm from the internal os. Pelvic rest was recommended at this time.

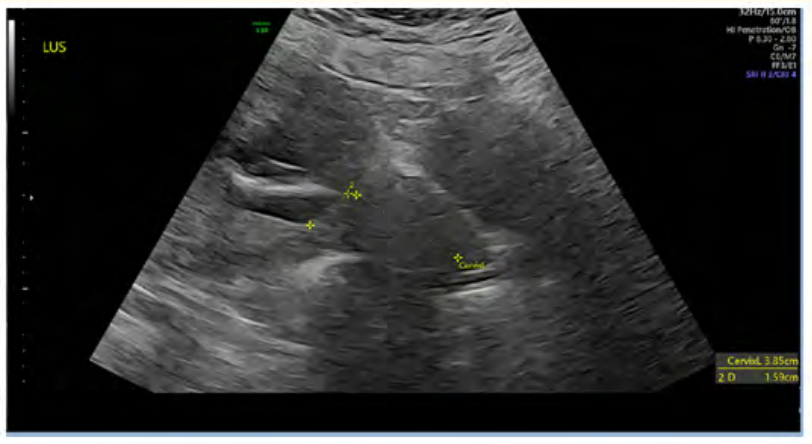


***Figure 2:*** *Low-lying placenta at 19.4 weeks gestational age: Ultrasound image of low-lying placenta at 19.4 weeks gestational age 1.59 cm from internal cervical os.*

## Case management

She was admitted to Labor and Delivery for suspected chronic hypertension with superimposed preeclampsia with severe features due to headache unrelieved by multiple medications. Magnesium was started for seizure prophylaxis and induction of labor was begun.

Electronic fetal monitoring demonstrated reassuring fetal status with fetal heart rate of 155 beats per minute, moderate variability, accelerations, no decelerations with infrequent contractions. The patient's induction course was started with Dinoprostone vaginal insert. Dinoprostone vaginal insert was removed after nine hours of therapy due to fetal heart rate decelerations. Once fetal heart rate recovered, Pitocin augmentation was then initiated. Minimal cervical change was noted after 11 hours of Pitocin therapy. Pitocin was then discontinued and Cook catheter was placed for further cervical ripening. After 6 hours of therapy with Cook catheter, Pitocin augmentation was restarted. After the Cook catheter was removed Pitocin augmentation was again restarted and maintained at a dose of 2 miu/min. At completion of 12 hours of therapy, cook catheter was removed and cervical exam after removal was found to be 3 cm dilated, 50% effaced, -3 station. Pitocin was titrated to a maximum dose of 30 miu/min. Artificial rupture of membranes was unable to be performed throughout the course of induction due to a ballotable fetal position. Patient also received an epidural throughout the course of her induction for pain control. A few hours after Cook removal and continued Pitocin titration, patient made cervical change to 5 cm.

Electronic fetal monitoring continued to demonstrate reassuring fetal status, with fetal heart rate of 130 bpm, moderate variability, accelerations, no decelerations with contractions every 2 minutes. At this point in time, patient was stable with a blood pressure of 108/57 millimeter of Mercury, heart rate of 87 beats per minute, temporal temperature of 36.4 degrees Celsius and $SpO_2$ of 97% on room air, cervical exam was 5 cm dilated, 50% effaced, -3 station, unchanged for about 7 hours. Most recent labs showed WBC 10.8 x

$10^9$/L, hemoglobin 12.5 g/dL, platelet count 274 x $10^9$/L, PT 9.6 seconds, PTT 27.3 seconds, INR 0.8, fibrinogen 553 mg/dL, BUN/Cr < 5/0.52 mg/dL, ALT < 9 U/L, AST 17 U/L, largely stable from labs on admission. At this time, due to failed induction of labor with minimal cervical change as well as prolonged exposure to Magnesium of 48 hours since admission, decision was made to proceed with primary cesarean section. During cesarean section, a viable female infant weighing 7 pounds, 7 ounces was delivered with APGARs of 9 and 9 and 1 and 5 minutes, respectively. The placenta was attempted to be removed with cord traction and fundal massage without success. Manual extraction of the placenta was then attempted which was unsuccessful as there was no evidence of a cleavage plane. At this time, abnormal placentation was suspected as fragments of placental tissue were noted to be adherent to the posterior and left lateral uterine wall as well as the lower uterine segment. Due to significant uterine atony along with suspicion for abnormal uterine placentation with placenta accreta, decision was made to proceed with supracervical cesarean hysterectomy and bilateral salpingectomy. Prior to cesarean section, risks of possible hysterectomy were discussed with patient due to her history of previous endometrial ablation. The entire procedure resulted in a quantitative blood loss of 2540 mL. As patient remained stable throughout the procedure, no blood products were administered at the time of cesarean hysterectomy. Urine output at the conclusion of the procedure was noted to be 600 mL along with a total of 800 ml of IV fluids administered. Patient had received additional administration of fluids during her induction course as well as prior to epidural administration. Due to elevated BMI, deep subcutaneous tissue, and concern for possible postoperative wound infection, a Prevena wound vac was placed over the incision site at the completion of the procedure. Surgical pathology demonstrated myometrium with attached portion of placenta and no evidence of increta, confirming the suspected diagnosis of placenta accreta.

Patient's postoperative course consisted of continuation of postpartum Magnesium for 24 hours for seizure prophylaxis in the setting of chronic hypertension with superimposed preeclampsia with severe features. Throughout her postoperative course blood pressures were stable at 100s - 130s/60s - 80s and all symptoms of preeclampsia such as headache, intermittent vision changes and right upper quadrant pain had resolve. Hemoglobin on post-operative day 1 was 10.3 from 12.5 preoperatively and she had no signs or symptoms of anemia. Her postoperative course was otherwise uneventful and she recovered well. Patient was started on Lasix 20 mg daily for a total of 5 days due to preeclampsia with severe features as well as Lovenox 40 mg daily for a total of 6 weeks due to elevated venous thrombosis risk in the setting of preeclampsia with severe features, cesarean hysterectomy, elevated blood loss and obesity with an elevated BMI. Patient was discharged to home in stable condition on postoperative day 2, meeting all postoperative milestones with close outpatient follow up.

## Discussion

Endometrial ablation is becoming a more common, less invasive option for the premenopausal population to help with symptoms of heavy menstrual bleeding. It is important to counsel these patients that endometrial ablation is not a form of contraception. The importance of contraception must be emphasized as pregnancy complications are known to be severe. The estimated pregnancy rate after hysteroscopic endometrial ablation is low, estimated to be from 0.24 to 5.2% [13-15]. However, in that percentage of patients there is a high risk of associated complications during pregnancy. A history of endometrial ablation can greatly increase the risk for placenta accreta spectrum as it may be a precipitating factor to abnormal implantation and placentation secondary to endometrial scarring [16].

In this case, the patient had a known history of an endometrial ablation with resumption of menses as well as evidence of a low-lying placenta early in pregnancy. It is well known that a low-lying placenta and placenta previa may be associated with an increased risk of placenta accreta [20]. Evidence of a low-lying placenta at an early gestational age in this patient may have been an early sign of abnormal placentation.

Due to the significant complications associated with a postablation pregnancy, there has been a suggestion that all postablation pregnancies should be assumed to have an adherent placenta until proven otherwise [17]. A recent study reviewed 123 pregnancies

after endometrial ablation with most associated with poor outcomes such as spontaneous abortion (28%), ectopic pregnancy (6.5%), preterm delivery (31%), perinatal death (14%) and one maternal death [18]. According to Kohn., *et al.* (2016) [11] In 79 reported postablation pregnancies 76% occurred in a woman with continued menstruation. Of the 61 pregnancies, 80% occurred in a woman without adequate contraception. This demonstrates the prevalence of persistent menstruation in patients who undergo endometrial ablation and the possibility of pregnancy as most women do not adhere to the recommendation for contraception. There is an option of recommending tubal sterilization with patients concurrent with endometrial ablation. There has been shown a 0.4% pregnancy rate after tubal sterilization, therefore after both endometrial ablation and laparoscopic tubal ligation, the rate of pregnancy decreases greatly to 0.002% (1/50,000) [16].

Most pregnancies complicated by PAS require a cesarean hysterectomy at time of delivery. According to Kohn., *et al.* (2018) [12] a review of multiple case reports demonstrated a 46% rate of cesarean hysterectomy in pregnancies complicated by PAS. Of the 126 pregnancies reviewed, 23% had morbidly adherent placentas, including 15 accretas, 10 increatas, and 4 percretas, which were often complicated by hemorrhage [12]. Bauer., *et al*. (2018) [19] demonstrated pregnancies after endometrial ablation were associated with a 20-fold increase in the risk of PAS. Risks associated with PAS include life-threatening hemorrhage, increased risk of hysterectomy, massive transfusions, and maternal death [19].

## Conclusion

PAS is associated with both high fetal and maternal morbidity and mortality. It is very important to counsel patients who desire endometrial ablation about the possibility of pregnancy without adequate contraception after endometrial ablation, along with the severe risks associated with a postablation pregnancy. It is also important to have a very high suspicion of PAS in pregnant patients with a history of endometrial ablation. Having a high clinical suspicion along with increased ability for antepartum diagnosis of PAS can lead to a significant decrease in severe maternal morbidity.

## Declaration of Patient Consent

Patient consent was not obtained for this case report, however due effort was made to conceal patient's identity and to ensure anonymity to the best degree possible.

## Financial Support and Sponsorship

Nil.

## Conflicts of Interest

There are no conflicts of interest.

## Bibliography

1. Usta IM., *et al*. "Placenta previa-accreta: risk factors and complications". *American Journal of Obstetrics and Gynecology* 193 (2005): 1045-1049.

2. Silver RM. Placental accreta spectrum: Clinical features, diagnosis and potential consequences (2023).

3. Shellhaas CS., *et al*. "The frequency and complication rates of hysterectomy accompanying cesarean delivery". *Eunice Kennedy Shriver National Institutes of Health and Human Development Maternal-Fetal Medicine Units Network* 114 (2009): 224-229.

4. Jauniaux E., *et al*. "Prevalence and main outcomes of placenta accreta spectrum: a systematic review and meta-analysis". *American Journal of Obstetricians and Gynecology* 221.3 (2019): 208-218.

5. Osterman MJK and Martin JA. "Changes in cesarean delivery rates by gestational age: United States, 1996-2011". *National Center for Health Statistics* (2013): 124.

6. National Center for Health Statistics, final natality data (2023).

7. Marshall NE., *et al*. "Impact of multiple cesarean deliveries on maternal morbidity: a systematic review". *American Journal of Obstetricians and Gynecology* 205.3 (2011): 262.e1-262.e8.

8. Eshkoli T., *et al*. "Placenta accreta: risk factors, perinatal outcomes, and consequences for subsequent births". *American Journal of Obstetricians and Gynecology* 208.3 (2013): 219.e1-219.e7.

9. Garmi G and Salim R. "Epidemiology, etiology, diagnosis, and management of placenta accreta". *Obstetrics and Gynecology International* (2012): 873929.

10. Baldwin HJ., *et al*. "Antecedents of abnormally invasive placenta in primiparous women: risk associated with gynecologic procedures". *Obstetrics and Gynecology* 131 (2018): 227-233.

11. Kohn JR., *et al*. "Placenta Percreta and Incomplete Uterine Rupture after Endometrial Ablation and Tubal Occlusion". *American Journal of Perinatology Reports* 6 (2016): 445-450.

12. Kohn JR., *et al*. "Pregnancy after endometrial ablation: a systematic review". *British Journal of Obstetrics and Gynecology* 125 (2018): 43-53.

13. Pugh CP., *et al*. "Successful intrauterine pregnancy after endometrial ablation". *The Journal of the American Association of Gynecologic Laparoscopists* 7.3 (2000): 391-394.

14. Xia E., *et al*. "The occurrence and outcome of 39 pregnancies after 1621 cases of transcervical resection of endometrium". *Human Reproduction* 21.12 (2006): 3282-3286.

15. Gervaise A., *et al*. "Contraceptive information after endometrial ablation". *Fertility and Sterility* 84.6 (2005): 1746-1747.

16. El-Toukhy T and Hefni M. "Pregnancy after hydrothermal endometrial ablation and laparoscopic sterilization". *European Journal of Obstetrics and Gynecology and Reproductive Biology* 106 (2003): 222-224.

17. Patni S., *et al*. "Endometrial resection mandates reliable contraception thereafter - a case report of placenta increta following endometrial ablation". *European Journal of Contraception and Reproductive Health Care* 3.2 (2008): 208-211.

18. Yin CS. "Pregnancy after hysteroscopic endometrial ablation without endometrial preparation: a report of five cases and a literature review". *Taiwan Journal of Obstetrics and Gynecology* 49.3 (2010): 311-319.

19. Bauer AM., *et al*. "Pregnancy Outcomes after Endometrial Ablation in a Multi-institutional cohort". *American Journal of Perinatology* 35.10 (2018): 931-935.

20. Pegu B., *et al*. "Placenta accreta spectrum-a catastrophic situation in obstetrics". *Obstetrics and Gynecology Science* 64.3 (2021): 239-247.

**Volume 6 Issue 6 June 2023**