CASE REPORT

Placenta Accreta Spectrum: A Case Report and Review of Diagnostic and Management Challenges

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ABSTRACT

Placenta accreta spectrum (PAS) represent a major cause of severe obstetric hemorrhage and maternal morbidity, particularly in women with a history of cesarean delivery and placenta previa. Early antenatal diagnosis and multidisciplinary planning are essential to optimize outcomes. We report a case of placenta accreta spectrum with bladder involvement in a 33-year-old multigravida with a previous cesarean section, diagnosed antenatally by imaging. The patient underwent an emergency classical cesarean section followed by cesarean hysterectomy and bladder repair at 32 + 3 weeks' gestation due to massive obstetric hemorrhage. Histopathological examination confirmed placenta accreta. This case highlights the importance accurate diagnosis and the need of multidisciplinary approach in a tertiary care center for the optimal outcome.

Keywords: cesarean hysterectomy, obstetric hemorrhage, placenta accreta spectrum, placenta previa

INTRODUCTION

Placenta accreta spectrum (PAS) disorders encompass abnormal placental adherence and invasion into the uterine wall, ranging from placenta accreta to increta and percreta. The incidence of PAS has increased markedly over recent decades, paralleling the global rise in cesarean section rates.[1,2] Placenta previa in combination with a prior cesarean delivery is the strongest known risk factor, with the likelihood of PAS increasing with the number of uterine scars.[3]

The pathophysiology of PAS involves defective decidualization at the site of prior uterine injury, permitting abnormal trophoblastic invasion into the myometrium and occasionally beyond the uterine serosa into adjacent organs such as the bladder.[4,5] Antenatal diagnosis, primarily through ultrasound and supplemented by magnetic resonance imaging (MRI) when available, allows planned delivery in specialized settings and significantly reduces maternal morbidity and mortality.[6–8]

We present a case of placenta accreta spectrum with bladder involvement managed surgically, illustrating diagnostic evolution, operative challenges, and histopathological confirmation.

CASE PRESENTATION

A 33-year-old woman, Gravida 4 Para 2 + 1 (G4P2+1L0), presented to emergency at 27weeks of gestation with history of per vaginal bleeding for 1 day. She was an unbooked, supervised case and was referred to our center with a diagnosis of placenta previa. At presentation, she was perceiving adequate fetal movement. The bleeding was not associated with pain abdomen or leaking per vaginum .Her obstetric history included two prior deliveries, first being intrauterine fetal death at 8 month gestation, delivered vaginally. She delivered her second child 10 years back by lower segment cesarean section at 9 months of gestation for Intrauterine fetal demise with transeverse lie.

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There was no history of dilatation and curettage, myomectomy, or hysteroscopic procedures.

She was a known case of hypothyroidism, well controlled on levothyroxine 12.5 µg daily. The current pregnancy was conceived spontaneously. She was normotensive, non-diabetic, and did not give history of smoking.

Antenatal Course

This was a planned pregnancy and was confirmed by urine for pregnancy test at home at 1 and half months of amenorrhea. Her first trimester was uneventful and she took folic acid supplementation. At 12 weeks gestation, her ultrasonography report was normal with no evidence of abnormal placentation. However, at 16 weeks + 6 days' gestation, ultrasound demonstrated a posterior placenta completely covering the internal cervical os, consistent with placenta previa. No definitive features of PAS were noted at that stage.

She had quickening at 5 months of gestation and was on regular iron and calcium supplementation from 2nd trimester. She received two doses of Td vaccination. Her anomaly scan was normal except for the abnormal placentation.

At 28–29 weeks' gestation, ultrasound revealed placental invasion of the myometrium with bulging toward the urinary bladder and a scanty retroplacental collection at the upper placental margin. A diagnosis of placenta previa with suspected PAS was made. This was further confirmed by MRI. MRI of the fetus performed at approximately 29–30 weeks' gestation demonstrated a single live intrauterine pregnancy in cephalic presentation. The placenta was anterior and completely covering the internal cervical os, consistent with complete anterior placenta previa. Imaging revealed a retroplacental clear space with a focal placental bulge, suggestive of placenta accreta. There was a suspicious loss of the normal fat plane/interface between the placenta and the posterior wall of the urinary bladder, raising concern for deeper placental invasion; placenta percreta could not be ruled out. No significant fetal structural anomalies were identified on MRI.

Course of hospital stay:

After admission, two wide bore intravenous cannulas were secured and blood samples were sent for baseline investigations, including complete blood count, coagulation profile, and blood grouping and cross-matching. The blood bank was formally informed in advance and four pints of blood were arranged. As the bleeding subsided, patient was managed conservatively with bed pan facilities and was asked to save her pads. Fetal monitoring was done by daily fetal kick count and sonography and nonstress test as necessary. She also received 2 doses of injection dexamethasone 12 intramuscular 24 hours apart for fetal lung maturity.

Patient and patient party were thoroughly counselled regarding the condition of the patient and written informed consent was taken including the possibility of peripartum hysterectomy, massive blood transfusion, and urological injury. Given the high risk of sudden bleeding, she was managed in a high-dependency setting with readiness for emergency surgical intervention. Neonatal, urosurgery and anesthesia teams were alerted and kept on standby.

At 31weeks and 5 days gestation, ultrasound demonstrated anterior placenta invading the myometrium with close adherence to the urinary bladder wall. Doppler studies showed elevated uterine artery and umbilical artery pulsatility indices (>95th percentile), suggestive of uteroplacental insufficiency. The overall impression was placenta accreta spectrum with increasing severity. The estimated fetal weight was 1900 grams.

Surgical Management

At 32 weeks and 3 days gestation, on January 14, 2026, patient complained of per vaginal bleeding with pain abdomen and on the same day at 2:45 PM, the patient underwent emergency cesarean delivery for suspected placental abruption, as a retroplacental clot was identified on ultrasonography. A midline abdominal incision and classical uterine incision were performed to avoid placental transection.

A live female neonate weighing 1.6 kg was delivered. Attempted placental removal resulted in profuse postpartum hemorrhage. Intraoperatively, the placenta was found to be densely adherent to the lower uterine segment with extension toward the urinary bladder, consistent with severe PAS.

A cesarean hysterectomy with bilateral salpingectomy was performed. A bladder injury was identified intraoperatively, confirmed by dye test, and repaired in two layers using Vicryl 2-0 sutures. Total estimated blood loss was approximately 6 liters. Spinal anesthesia was converted to general anesthesia intraoperatively.

Postoperative Course

Hemostasis was achieved following surgery. The patient required intensive care unit admission for five days and received a total of nine units of blood products. The total hospital stay was 11 days. Foleys catheter was continued for 14 days. No additional postoperative complications were noted at discharge.

Neonatal Outcome

The neonate was female, delivered in vertex presentation with a triple nuchal cord. Apgar scores were 7 at 1 minute and 8 at 5 minutes. Birth weight was 1.6 kg. No immediate neonatal complications were documented.

Histopathological Examination

Gross Examination: The uterus was bulky, measuring 12 × 10 × 3 cm, with a congested external surface. The endometrial cavity was filled with blood clots. The myometrium measured up to 3.5 cm in thickness and showed areas of hemorrhage on serial sections.

The placenta measured 14 × 7 cm with a peripherally attached umbilical cord measuring 30 × 1 cm. The maternal surface showed ruptured cotyledons with greyish-brown friable tissue. The cervix measured 4 × 2 cm and showed hemorrhagic areas. Both fallopian tubes measured approximately 4 × 1 cm and appeared grossly unremarkable.

Microscopic Examination: Multiple sections from the placental implantation site demonstrated chorionic villi directly adherent to the myometrium, with absence of an intervening decidual layer. The villi were lined by inner cytotrophoblasts and outer syncytiotrophoblasts, with scattered trophoblastic cells interspersed between villi and myometrial fibers.

Sheets of decidualized tissue were present along with areas of hemorrhage and congestion. No histological evidence of deep myometrial invasion or transmural infiltration was identified in the examined sections.

The cervix showed features of chronic cervicitis, while both fallopian tubes were histologically unremarkable.

Final Histopathological Diagnosis

- Placenta accrete
- Chronic cervicitis
- Fallopian tubes: unremarkable

DISCUSSION

This case demonstrates several important aspects of placenta accreta spectrum disorders. The coexistence of placenta previa and a prior cesarean section placed the patient at high risk for PAS, consistent with established epidemiological data. [1-3] Serial ultrasonography was instrumental in raising antenatal suspicion, demonstrating progressive loss of the retroplacental interface and apparent bladder involvement recognized markers of severe PAS.[6,7]

An important feature of this case was the normal first-trimester ultrasound and delayed appearance of placental abnormalities, with placenta previa first identified at 16 + 6 weeks' gestation. This highlights the dynamic nature of placental implantation and reinforces that absence of PAS features early in pregnancy does not exclude later development, particularly in women with prior uterine surgery. Furthermore, despite a long inter-pregnancy interval of 10 years, severe PAS still occurred, supporting evidence that prior cesarean delivery confers a lifelong risk of abnormal placentation, irrespective of the interval between pregnancies.

Although MRI can improve delineation of invasion depth and adjacent organ involvement, particularly in suspected bladder invasion, ultrasound remains the primary diagnostic tool in many settings and often guides management decisions.[8,9] In this case, management was based on ultrasound findings and clinical progression.

Histopathological examination confirmed placenta accreta rather than increta or percreta. Such clinicopathological discordance is well described in PAS literature and may result from focal invasion, tissue disruption during surgery, or sampling limitations.[4,5] Importantly, intraoperative findings including dense placental adherence, bladder involvement, and

catastrophic hemorrhage remain critical in determining disease severity and guiding surgical management.

Current guidelines recommend planned preterm cesarean hysterectomy with the placenta left in situ as the optimal management strategy for confirmed PAS.[1,10,11] However, emergency presentation and uncertainty regarding diagnosis may necessitate attempted placental removal, frequently resulting in massive hemorrhage and urological injury, as observed in this case.[12]

CONCLUSION

Placenta accreta spectrum disorders remain a significant cause of maternal morbidity, particularly in women with placenta previa and prior cesarean delivery. Serial antenatal ultrasound surveillance is helpful for early diagnosis. Involvement of multidisciplinary team including senior obstetrician, anesthesiologist, medical intensivist, urosurgical team and neonatologist is crucial for the optimal maternal and fetal outcome.

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