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Placenta Accreta Spectrum in an Unscarred Uterus: A Rare and Unexpected Obstetric Emergency

ABSTRACT

Placenta accreta spectrum (PAS) represents a spectrum of abnormal trophoblastic invasion into the myometrium and is a major cause of obstetric haemorrhage and maternal morbidity. It is predominantly associated with uterine scarring and placenta previa. Occurrence in a primigravida with an unscarred uterus and no identifiable risk factors is rare and frequently unsuspected. We report a case of a 24-year-old unregistered primigravida at 38 weeks of gestation who presented with severe preeclampsia and acute fetal distress necessitating emergency cesarean delivery. Intraoperatively, the placenta failed to separate, raising suspicion of PAS. Given minimal hemorrhage and hemodynamic stability, conservative management with the placenta left in situ was undertaken. Postoperative imaging suggested increta/percreta. 11 A single dose of methotrexate was administered, followed by spontaneous vaginal expulsion of the placenta on postoperative day three. The patient remained clinically stable, avoided hysterectomy, and fertility was preserved. 4 This case underscores the importance of intraoperative vigilance and individualized management in unexpected PAS, particularly in unregistered pregnancies.

Keywords: Placenta accreta spectrum, Unscarred uterus, Primigravida, Conservative management, Emergency caesarean section

Introduction

Placenta accreta spectrum (PAS) comprises a group of disorders characterized by abnormal placental adherence and invasion into the uterine wall due to defective decidualization at the implantation site. It includes placenta accreta (superficial attachment to the myometrium), increta (invasion into the myometrium), and percreta (penetration through the serosa, occasionally involving adjacent organs such as the bladder). PAS represents a significant cause of severe obstetric hemorrhage and remains a leading indication for peripartum hysterectomy worldwide (1).

Over the past four decades, the incidence of PAS has risen markedly, increasing from approximately 1 in 2500 deliveries in the 1980s to nearly 1 in 533 deliveries in contemporary series (1,2). This rise closely parallels the global escalation in cesarean delivery rates. Previous cesarean section, particularly in combination with placenta previa, is the most significant risk factor, with risk increasing proportionally with the number of prior uterine surgeries (3). Additional predisposing factors include dilatation and curettage, myomectomy, multiparity, advanced maternal age, and assisted reproductive technologies (3,8).

The pathogenesis of PAS involves absence or deficiency of the decidua basalis and Nitabuch's layer, allowing direct anchoring and abnormal trophoblastic invasion into the myometrium (5). In most reported cases, PAS occurs in a scarred uterus. Occurrence in an unscarred uterus without identifiable risk factors is distinctly uncommon and remains poorly understood.

Antenatal diagnosis using ultrasonography and color Doppler imaging demonstrates high sensitivity for PAS, while magnetic resonance imaging (MRI) serves as an adjunctive modality in equivocal cases or suspected deep invasion (5). Early identification enables planned delivery in tertiary care centers with multidisciplinary expertise, significantly reducing maternal morbidity (9). However, undiagnosed PAS encountered intraoperatively during emergency cesarean section presents a complex and potentially catastrophic scenario.

We report a rare case of placenta accreta spectrum in an unregistered primigravida with an unscarred uterus, diagnosed unexpectedly during emergency cesarean section performed for severe preeclampsia with fetal distress, and successfully managed conservatively with preservation of fertility.

CASE REPORT

A 24-year-old unregistered primigravida at 38 weeks of gestation presented to the labour room of HBT Medical College and Dr. R. N. Cooper Municipal General Hospital with complaints of severe headache, blurring of vision, and abdominal pain of acute onset. On

admission, her blood pressure was 170/100 mmHg. She was diagnosed with severe preeclampsia and immediate antihypertensive management was initiated.

The patient had irregular antenatal follow-up. She had attended once at confirmation of pregnancy at approximately 10 weeks and again at around 32 weeks of gestation. No detailed anomaly scan or targeted placental evaluation had been performed. There was no history of previous cesarean section, uterine curettage, myomectomy, placenta previa, infertility treatment, or any prior uterine instrumentation.

During initial evaluation in the labour room, non-stress testing revealed non reactive NST suggestive of late decelerations . In view of severe preeclampsia and evidence of acute fetal compromise and breech presentation ,a decision was made to proceed with emergency lower segment cesarean section within one hour of admission. Due to the emergent nature of the situation, there was insufficient time for detailed preoperative placental imaging.

Intraoperatively, a live male neonate weighing 2.2 kg was delivered. The urinary bladder was carefully dissected and reflected inferiorly without difficulty or injury. Estimated intraoperative blood loss was approximately 800 ml.

Following delivery of the new born , controlled cord traction was attempted to deliver the placenta. However, the placenta failed to separate. Gentle manual removal was attempted, but no distinct cleavage plane between the placenta and the myometrium could be identified. The placental tissue appeared firmly adherent to the uterine wall, raising strong suspicion of placenta accreta spectrum.(figure 1)

Importantly, despite failed placental separation, there was no torrential haemorrhage. The patient remained hemodynamically stable, and uterine tone was adequate following administration of uterotonics including oxytocin.

Given the patient's primigravida status, absence of active hemorrhage, and stable hemodynamic condition, a multidisciplinary intraoperative discussion was undertaken with senior obstetric consultants. In order to avoid the morbidity of emergency peripartum hysterectomy and preserve future fertility, a decision was made to adopt conservative

management.

The umbilical cord was ligated close to its placental insertion and cut.(figure 2) The placenta was left in situ, and the uterine incision was closed in layers. (figure 3)Haemostasis was ensured before abdominal closure.

Postoperatively, the patient was closely monitored in the obstetric high-dependency setting. Serial complete blood counts and inflammatory markers (C-reactive protein) were performed to monitor for early signs of infection or secondary hemorrhage. The patient remained afebrile and hemodynamically stable.

On postoperative day two, ultrasonography demonstrated retained placental tissue suggestive of placenta increta. Magnetic resonance imaging was performed and showed findings suggestive of deeper invasion consistent with possible placenta percreta.

In view of imaging findings and to facilitate placental involution, a single dose of methotrexate was administered after multidisciplinary discussion. On postoperative day three, the patient spontaneously expelled the placenta vaginally in toto. (figure 4) There was no significant hemorrhage or clinical evidence of sepsis. No intensive care admission was required.

Both mother and neonate were discharged in stable condition. The patient was counselled regarding future pregnancies and the need for early antenatal registration and targeted placental assessment.

DISCUSSION

Placenta accreta spectrum (PAS) is predominantly associated with uterine scarring, particularly previous cesarean delivery, and placenta previa (1,2). The risk increases progressively with the number of prior cesarean sections and may exceed 40% when placenta previa coexists with multiple uterine scars (1,3). Consequently, PAS occurring in a primigravida with an unscarred uterus and no identifiable risk factors represents a distinctly uncommon clinical entity.

The pathophysiology of PAS involves defective decidualization and absence of the Nitabuch layer at the implantation site, permitting abnormal trophoblastic invasion into

the myometrium (5). While most cases are linked to scarred endometrium, sporadic occurrences in unscarred uteri suggest that additional, yet poorly understood mechanisms may contribute to abnormal placentation.

In the present case, absence of established risk factors and irregular antenatal follow-up limited clinical suspicion. The patient was unregistered and had not undergone detailed placental assessment during pregnancy. Antenatal diagnosis using ultrasonography and color Doppler has demonstrated high sensitivity for PAS, with MRI serving as a complementary modality in equivocal or suspected invasive cases (5). Early diagnosis allows planned cesarean hysterectomy in tertiary centers with multidisciplinary teams, which significantly reduces maternal morbidity (9).

However, our patient presented as an obstetric emergency with severe preeclampsia and acute fetal distress, necessitating immediate surgical intervention. In such time-critical scenarios, maternal stabilization and expedited delivery take precedence, leaving limited opportunity for comprehensive placental mapping. 2 The diagnosis of PAS was therefore made intraoperatively when the placenta failed to separate and no cleavage plane could be identified.

Diagnostic Considerations

Intraoperative recognition of PAS is crucial. Forceful manual removal of an abnormally adherent placenta can precipitate catastrophic hemorrhage and disseminated intravascular coagulation. In this case, controlled attempts at placental separation were appropriately abandoned once abnormal adherence was suspected. The absence of massive hemorrhage allowed time for deliberation regarding management strategy.

Postoperative imaging demonstrated features suggestive of placenta increta on ultrasound and possible percreta on MRI. While MRI improves specificity in assessing depth of invasion, it may occasionally overestimate placental penetration (5). Nonetheless, imaging findings reinforced the need for vigilant monitoring.

Obstetric Management and Fertility Preservation

Planned cesarean hysterectomy with the placenta left in situ remains the standard

recommended management for PAS, particularly in cases of suspected percreta (3). This approach minimizes intraoperative hemorrhage but results in permanent loss of fertility.

Conservative management, defined as leaving the placenta in situ with close surveillance, has emerged as an alternative in carefully selected hemodynamically stable patients who desire fertility preservation (6,7). Reported conservative strategies include expectant management, methotrexate administration, uterine artery embolization, and delayed hysterectomy (6).

The role of methotrexate in term PAS remains controversial. As placental trophoblastic proliferation is minimal at term, some authors question its efficacy (6). However, selected case series have demonstrated successful outcomes with adjunctive methotrexate therapy (7). In our patient, a single dose was administered following multidisciplinary discussion, and spontaneous vaginal expulsion of the placenta occurred on postoperative day three without hemorrhagic or septic complications.

The favorable outcome in this case can be attributed to several factors: minimal intraoperative blood loss (approximately 800 ml), absence of coagulopathy, maintained hemodynamic stability, and availability of tertiary care monitoring. Importantly, conservative management should only be undertaken in centers equipped to manage delayed hemorrhage or sepsis, as secondary postpartum hemorrhage remains a significant risk (6,7).

Clinical Implications

This case reinforces several important clinical considerations:

1. PAS can occur even in the absence of traditional risk factors.
2. Unregistered pregnancies increase the likelihood of missed antenatal diagnosis.
3. Intraoperative recognition and avoidance of forceful placental removal are critical.
4. Conservative management may be a safe and fertility-preserving option in selected stable patients.
5. Multidisciplinary care and close postoperative surveillance are essential for favorable

outcomes (9).

Limitations

The diagnosis in this case was based on intraoperative findings and postoperative imaging. Histopathological confirmation was not available, as hysterectomy was avoided. However, the clinical and radiological findings were strongly suggestive of placenta accreta spectrum.

OBSTETRIC MANAGEMENT

Management of placenta accreta spectrum (PAS) depends on timing of diagnosis, depth of invasion, hemodynamic status, and available institutional resources. International guidelines recommend planned cesarean hysterectomy with the placenta left in situ as the standard approach in confirmed cases, particularly when invasive disease is suspected (1,6). This strategy reduces the risk of massive hemorrhage associated with attempted placental removal.

Emergency Context

In the present case, the patient presented as an obstetric emergency with severe preeclampsia and acute fetal distress, necessitating immediate delivery. Due to the urgency, comprehensive preoperative placental mapping was not feasible. Following delivery of a live neonate, failure of placental separation raised suspicion of PAS.

At this stage, the surgical team faced a critical intraoperative decision between emergency hysterectomy and conservative fertility-preserving management.

Intraoperative Risk Assessment

Several factors supported a conservative approach:

- Absence of torrential hemorrhage
- Estimated blood loss approximately 800 ml
- Hemodynamic stability
- Adequate uterine tone
- Primigravida status
- Desire for future fertility

 Availability of senior obstetric consultants

Emergency hysterectomy in unexpected PAS cases is associated with increased maternal morbidity, including massive transfusion, adjacent organ injury, and long-term reproductive loss (2,9). Given the patient's stability and institutional capacity for close monitoring, conservative management was elected.

The umbilical cord was ligated near placental insertion and cut. The placenta was left in situ, and the uterine incision was closed after ensuring meticulous hemostasis. One unit 1 of packed red blood cells was transfused.

Leaving the placenta in situ is an accepted conservative strategy in carefully selected hemodynamically stable patients managed in tertiary centers (6,7).

Postoperative Surveillance

Conservative management carries risks of:

 Secondary postpartum hemorrhage

 Sepsis

 Delayed hysterectomy

Therefore, structured monitoring was implemented, including serial complete blood counts and inflammatory markers. The patient remained afebrile and hemodynamically stable, and ICU admission was not required.

Role of Methotrexate

The role of methotrexate (MTX) in conservative PAS management remains controversial. MTX is a folate antagonist that inhibits rapidly dividing trophoblastic tissue and is commonly used in ectopic pregnancy. Its proposed role in PAS is to accelerate placental involution when the placenta is left in situ (6,7).

However, at term, trophoblastic proliferation is minimal, and placental tissue consists largely of differentiated cells. Consequently, several authors have questioned the biological rationale and effectiveness of MTX in term PAS (5,6,14). FIGO guidelines do not recommend routine MTX use due to insufficient high-quality evidence (6).

Despite this, case reports and small series have described successful conservative

outcomes with adjunctive MTX therapy (7,13,15). Some authors suggest it may facilitate earlier placental necrosis and expulsion, although robust comparative studies are lacking. In the present case, postoperative imaging suggested persistent invasive placental tissue. After multidisciplinary discussion and counseling, a single dose of MTX was administered, with careful hematological monitoring.

On postoperative day three, the patient spontaneously expelled the placenta vaginally in toto without significant hemorrhage or septic morbidity. While definitive causality cannot be established, early placental expulsion suggests a possible adjunctive role.

Given the current evidence, MTX should not be routinely administered in all conservatively managed PAS cases but may be considered selectively in stable patients managed in tertiary care centers with close surveillance.

CONCLUSION

Placenta accreta spectrum (PAS) is classically associated with prior uterine surgery and placenta previa; however, it may rarely occur in primigravida patients with unscarred uteri and no identifiable risk factors. Such atypical presentations reduce antenatal clinical suspicion and increase the likelihood of unexpected intraoperative diagnosis, particularly in unregistered pregnancies with limited placental evaluation.

This case underscores the importance of intraoperative vigilance and avoidance of forceful placental removal when abnormal adherence is suspected. Prompt recognition and judicious decision-making are critical to preventing catastrophic hemorrhage.

Although planned cesarean hysterectomy remains the recommended standard of care for PAS (1,6), conservative management with the placenta left in situ may be considered in carefully selected, hemodynamically stable patients who desire fertility preservation and are managed in adequately equipped tertiary centers. The role of adjunctive methotrexate remains controversial and should be individualized based on clinical context.

This report highlights that PAS can occur even in the absence of classical risk factors and demonstrates that fertility-preserving management may be feasible in selected cases

with structured postoperative surveillance. Further research is required to better define selection criteria and long-term reproductive outcomes in conservatively managed PAS, particularly in unscarred uteri.

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FIGURE 1

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