

Placenta Accreta Spectrum: Case Series In A Tertiary Health Care Center In South India

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Abstract

Placenta Accreta Spectrum refers to range of pathologic adherence and invasion of placenta including placenta accreta, increta and percreta. Maternal morbidity and mortality can occur because of severe life threatening hemorrhage which requires blood transfusion. The purpose of this case series is to critically evaluate risk factors, diagnosis and the importance of multidisciplinary approach in decreasing maternal morbidity and mortality and also the emerging role of conservative management in PAS. Antenatal patients who were diagnosed as PAS and managed in obstetrics and gynaecology department, KIMSHEALTH hospital, Thiruvananthapuram during the time period of 2 years were reviewed and are being presented as case series. There is increasing evidence that the management of women with PAS disorders by multidisciplinary teams in centres of excellence decreases maternal morbidity and mortality when compared with standard obstetric care. Conservative management as a treatment modality to be practised in centres of excellence with proper counselling of the patients about high risk of peripartum and secondary complications.

Key Words: Placenta Accreta Spectrum, Placenta previa, Previous LSCS, Peripartum hysterectomy.

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I. Introduction

Placenta accreta is a histopathologic terminology coined for a condition first described in 1937 by obstetrician Frederick C. Irving and pathologist Arthur T. Hertig at the Boston Lying-In Hospital¹. Over the last 40 years, caesarean delivery rates around the world had a steep rise from less than 10% to over 30%, with a 10-fold increase in the incidence of placenta accreta spectrum (PAS) disorders in most medium- and high-income countries². Most accepted hypothesis regarding PAS is that a defect of endometrial- myometrial interface leading to failure of normal decidualization in the area of uterine scar which allows trophoblastic infiltration³. Another theory is that, the cellular changes in the trophoblast observed in placenta accreta are probably secondary to the unusual myometrial biological environment in which it develops, and not due to a primary defect of trophoblast biology leading to excessive invasion of the myometrium^{4,5}.

Classification of placenta accreta spectrum are according to the depth of invasion:

Placenta accreta (82%): placenta implants totally /partially/focally through the decidua basalis and villi are attached to the myometrium.

Placenta increta (12%): the villi invade within the myometrium.

Placenta percreta (6%): the villi fully penetrate the myometrium and may breach the serosa and invade surrounding structures.^{6,7}

Risk factors are previous caesarean, placenta previa, advanced maternal age, multiparity, previous uterine surgery including curettage, assisted reproductive techniques, and previous caesarean delivery⁸. Most common described risk factor is a combination of previous caesarean and placenta previa⁹. Antenatal diagnosis of placenta accreta spectrum is crucial and the primary imaging modality is obstetric ultrasonography. MRI is the other major imaging tool for antenatal diagnosis with a sensitivity of 94% and specificity of 84% which is comparable to ultrasonography³.

Optimal management involves standardized approach with comprehensive multidisciplinary team approach which involves experienced obstetrician, maternal-fetal medicine subspecialist, urologists, interventional radiologists, obstetric anesthesiologists, critical care experts, general surgeons and neonatologist³.

The purpose of this case series is to critically evaluate risk factors, diagnosis and the importance of multidisciplinary approach in decreasing maternal morbidity and mortality. This study also highlights the role of conservative management in cases of PAS in a tertiary care centre.

This study was conducted in obstetrics and gynaecology department of KIMSHEALTH, Thiruvananthapuram for a period of 2 years. Among the antenatal patients admitted during this period, 5 patients were associated with placenta accreta spectrum. Out of them, 2 underwent peripartum hysterectomy and conservative management done for 3 patients.

II. CASE SERIES

CASE 1: 37year old G2A1, IVF conceived TCTA triplets who had a previous missed miscarriage which was managed medically. In present pregnancy, antenatal scans showed placenta previa. Patient was admitted and monitored as one of the triplets had BPP 4/8 at 32 weeks, steroid coverage given and underwent Elective LSCS at 33 weeks, delivered a live of first triplet as female baby of weight 1.93 kg as cephalic, second as male baby of weight 1.85 kg as breech, third as male baby of weight 1.97kg as breech. Intra op found to have placenta accreta. Placenta was removed piece meal, some bits of tissue was left in-situ. Atonic PPH was present managed medically and with bilateral uterine and ovarian artery ligation. 3pint PRBC transfusion done. Estimated blood loss was 1700 ml. Patient was discharged on POD5. Patient readmitted on POD 24 as secondary PPH. USG showed retained placenta with proliferation and CT angiogram showed significant vascularization. Bilateral uterine artery embolization done. Patient discharged on POD7.

CASE 2: 31year old G2P1L1, previous LSCS done for breech 1 year ago was referred as a case of IUFD at 23 weeks with true placenta previa. Scan done showed IUFD with prominent vascular channels with doppler flow in retro placental zone. MRI pelvis showed placenta accreta. Elective hysterotomy with segmental resection of placenta invaded into myometrium with uterine artery embolization and prophylactic ovarian artery ligation was done. Intra op: tortuous blood vessels in lower half of uterus with focal bulge on the left side, proceeded with hysterotomy with vertical incision, and delivered out a dead fetus of 380gms. Placenta previa with invasion of myometrium into anterior and left side of uterus up to the serosa, placenta invading along with myometrium excised and myometrium sutured. 3pint PRBC and 2pint FFP given. Patient discharged on POD 8.

CASE 3: 29year old G2P1L1, previous LSCS for CPD 2 years back, referred as a case of anterior placenta previa with suspicious placenta accreta at 35 weeks. MRI done here showed the possibility of placenta accreta. Elective LSCS with segmental resection of myometrium done at 36 weeks. Intra op: abdomen opened with vertical incision and delivered a live male baby of weight 3.17 kg as breech. Placenta accreta noted and segmental resection done at 2 points. Patient developed shock: 6 PRBC, 4 FFP, 8 CRYOPRECIPITATE, 2 SDP, 1.5L colloids, 1L crystalloids given. Bleeding controlled with lynch sutures. Estimated blood loss was 2500 ml. Patient was intubated and shifted to MDICU, extubated and shifted out of MDICU on post-operative day 3. Discharged on POD11.

CASE 4: 32year old G2P1L1, previous LSCS 2 years back, referred as a case of placenta previa with suspicion of accreta at 34 weeks. MRI done here showed placenta per-creta with adherence to anterior abdominal wall. Patient presented with bleeding per vagina at 35 weeks, she was hemodynamically stable and intra op: vertical incision made, delivered out live male baby of weight 2.66 kg as breech. Placenta anterior completely covering the os invading into anterior myometrium up to serosa, not invading serosa. Hence peripartum hysterectomy done. 2pint PRBC transfused. Patient was discharged on POD11. HPE confirmed placenta increta.

CASE 5: 34year old G2P1L1, previous LSCS 2 years back for CPD, referred as a case of placenta previa with suspicious accreta at 34 weeks. MRI done showed placenta accreta. Patient again presented with bleeding per vaginum at 36 weeks, hemodynamically stable. Patient was planned for emergency LSCS after counselling regarding the possible consequences. Intra op: vertical incision made and delivered out male baby of weight 2.8 kg as breech. placenta anterior invading in to myometrium. She underwent peripartum hysterectomy. 2pint PRBC was transfused. She was discharged on POD10. HPE confirmed placenta increta.

III. DISCUSSION

Placenta accreta spectrum is a serious obstetric complication as a result of increase in cesarean section rates worldwide. Major risk factors include previous CS, placenta previa³. Antenatal diagnosis of placenta accreta spectrum is critical. Along with US and MRI, clinical risk factors remain equally important as predictors of PAS. Maternal morbidity and mortality can occur because of severe life-threatening hemorrhage requiring blood transfusion³. The single most important risk factor, reported in around half of all cases of PAS disorders is placenta previa¹⁰.

All the 5 patients who were diagnosed with PAS were a combination of previous caesarean section with placenta previa which emphasize that clinical evaluation starts from the risk factors.

A large multicentre US cohort study found that for women presenting with placenta previa and prior caesarean deliveries, the risk of accreta was 3%, 11%, 40%, 61%, and 67% for first, second, third, fourth and fifth or more caesareans respectively¹¹.

The combination of grey-scale and colour Doppler imaging ultrasound markers is reported to have increased the sensitivity of ultrasound imaging to around 90% with negative predictive values ranging between 95% and 98%¹².

Among the 5 patients, 4 patients had the diagnosis of placenta previa with suspicious PAS by either US or MRI, which helped in planning a multidisciplinary approach.

Recent cohort studies have shown that women managed by MDT care were less likely to require large-volume blood transfusion, intensive care unit admission, and reoperation within 7 days of delivery compared with management by standard obstetric care without a specific protocol^{13,14,15,16}

Caesarean hysterectomy is considered the gold standard treatment for invasive accreta but it remains associated with high rates (40%–50%) of severe maternal morbidity and in cases of placenta percreta, the mortality rates can be as high as 7% owing to damage to pelvic organs and vasculature.

The last 2 cases were managed by caesarean hysterectomy, and it is evident from this case series that hysterectomy is associated with reduced maternal morbidity compared to uterine conservation approach.

IV. CONCLUSION

Maternal mortality and morbidity are reduced when women with PAS disorders, particularly the invasive forms: placenta increta or percreta deliver in a centre of excellence by a multidisciplinary care team with experience in managing the surgical risks and perioperative challenges presented by these disorders^{17,18,19,20}.

Uterus preserving surgery in placenta percreta decreases morbidity and preserves future fertility and women should be informed of the high risk of peripartum and secondary complications, including the need for secondary hysterectomy²¹.

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