

Maternal and neonatal outcomes following implementation of a multidisciplinary approach for managing patients with placenta accreta spectrum

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Introduction

Placenta accreta spectrum disorder (PAS), characterized by abnormal placental invasion into the uterine wall, is a potentially life-threatening obstetric condition associated with high risk of maternal morbidity and mortality. Maternal complications of PAS include haemorrhage, coagulopathy, genitourinary tract injury, VTE, hysterectomy & death.

Evidence indicates management by a multidisciplinary team (MDT) in a tertiary facility leads to improved outcomes and reduced complication rates in patients with PAS (1, 2).

The 2022 RANZCOG guideline recommends antenatal review and management by a MDT with expertise in PAS (3). The Mater Mothers' Hospital (MMH) established a PAS MDT in May 2021 with view to standardizing the diagnosis, delivery planning, operative & post partum care of patients with PAS.

Aims

To review maternal and neonatal outcomes in patients with histopathologically confirmed PAS delivered at MMH prior to and following the establishment of a MDT management approach.

To audit current practice at our tertiary centre to ensure best evidence management is being utilised for care of patients with PAS.

Methods

A single-centre retrospective cohort study of patients with histologically confirmed PAS was performed. Review of electronic medical records of patients delivered between April 2019 and April 2023 was undertaken.

Data collected included: baseline demographics, maternal outcomes, neonatal outcomes and audit of current clinical practice. Data collection and analysis was completed using Excel.

Results

72 cases of PAS were reviewed over a 4 year period. 64 cases ended in hysterectomy and 8 underwent uterine conservation.

94% of the patients diagnosed with PAS had a history of previous caesarean section and 62% had concurrent placenta praevia.

40 cases of PAS were managed prior to establishment of the MDT process. 32 cases of PAS were managed following establishment of the MDT process and of these 21 (65%) had formal pre-operative MDT review and 31 (97%) had post-operative MDT review.

Discussion

This study demonstrated a trend toward improvement in maternal outcomes following implementation of a standardized MDT approach to diagnosis, delivery and postpartum care of PAS patients. This aligns with research from other units which have demonstrated reduced EBL, transfusion requirements and composite maternal morbidity.

As expected, study numbers were too small to demonstrate statistically significant improvement in neonatal outcomes, however there was a trend towards later planned gestational age for delivery.

Interestingly, the rate of antenatal MRI and post-operative ICU admission increased, likely reflecting standardization of clinical practice.

A limitation of this study is the small population number and the inclusion of private patients.

A 2017 study demonstrated that PAS patient outcomes improve over time with increasing experience of a stable, established MDT managing cases regularly. It is expected that as the MDT process at MMH continues, including retrospective review of all post-operative cases, clinical outcomes will continue to be optimised.

References

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Demographic & Clinical Data

	Pre-MDT (n=40)	Post-MDT (n=32)
Age (years): median (IQR)	36 (6.25)	36 (6)
BMI (kg/m2): mean (SD)	28 (7.2)	25 (5.7)
Parity: median (IQR)	2 (2)	2 (2)
Current smoking status	7 (17.5%)	4 (12.5%)
Antenatal MRI performed	6 (15%)	17 (53%)
Hb optimised	27 (67%)	23 (71%)
Planned GA at delivery (weeks): mean (SD)	35 (1.5)	36 (2.6)
Actual GA at delivery (weeks): mean (SD)	34 (1.4)	33 (3.2)
Elective delivery	25 (62.5%)	18 (56%)
GONC present from start of case	34 (85%)	27 (84%)
EBL (mL): mean (SD)	2194 (2728)	1656 (1376)
Intra-operative transfusion	10 (25%)	6 (18.7%)
Units PRBC transfused intraop: median (IQR)*	3 (7.25)	2.5 (2.5)
Units PRBC transfused postop: median (IQR)*	2 (0.25)	2 (1)
Cellsaver used	35 (87.5%)	30 (93.4%)
Volume returned via cellsaver (mL): mean (SD)	762 (844)	742 (712)
Post operative length of stay: median (IQR)	7 (2)	6.5 (3)
ICU admission	15 (38%)	16 (50%)
ICU length of stay (days): mean	1.9	1.4
Intraoperative complications #	11 (27.5%)	6 (18.7%)
Postoperative complications ^	15 (37.5%)	13 (40%)

BMI: body mass index, Hb: haemoglobin, GA: gestational age, GONC: Gynaecology-Oncology, EBL: estimated blood loss
PRBC: packed red blood cells, ICU: intensive care unit
*In patients who received transfusion
Bladder injury, bowel injury, ureteric injury, massive PPH with loss of cardiac output
^ Wound infection, UTI, pyelonephritis, febrile illness, ileus, VTE