Anaesthetic Management of Placenta Accreta Spectrum in a UK Tertiary Centre: A Cohort Study of 34 Cases

Dr Camilla Gordon, Dr Nisha Pattni & Dr Nhathien Nguyen-Lu

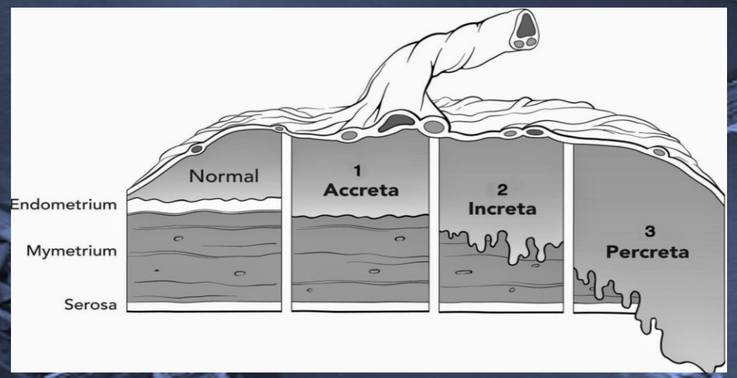
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Introduction

Placenta accreta spectrum (PAS) is a broad disorder ranging from an adherent placenta to invasion of adjacent organs by placental tissue. It is major contributor to maternal morbidity, causing postpartum haemorrhage and peripartum hysterectomy. The prevalence of PAS is up to 1:300 pregnancies [1] with increasing incidence [2].

Optimal anaesthetic management is an area of ongoing debate [3]. At St Thomas' Hospital, regional anaesthesia for patients identified with PAS. As a newly appointed Abnormally Invasive Placentation (AIP) centre we aimed to audit our anaesthetic practice and surgical outcomes against the literature



Methodology

Ethics approval was provided by the governance team. Data were retrospectively gathered from patients with PAS who delivered at a tertiary London hospital between 2009-2022. 35 were identified; 1 was excluded due to incomplete data. Records were searched for demographics, anaesthetic, radiological and surgical interventions, blood product use and postoperative course.

Results

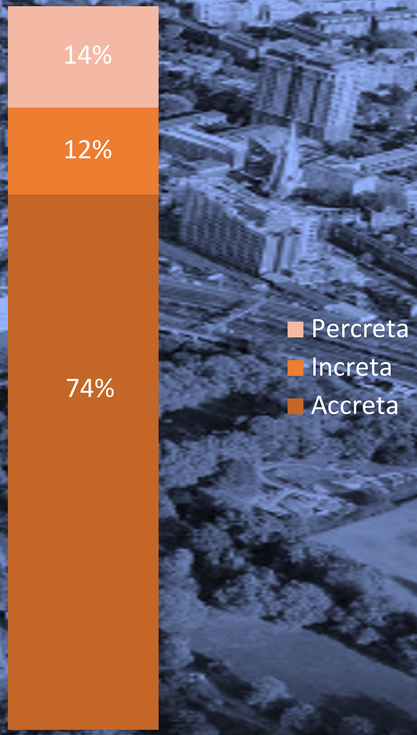
Demographics

Patients had a mean age (SD) of 36 (4.6) years, mean body mass index (SD) of 29 (6.9) $kg.m^{-2}$ and mean gestation (SD) of 35+0 (1.0) weeks.

Risk factors

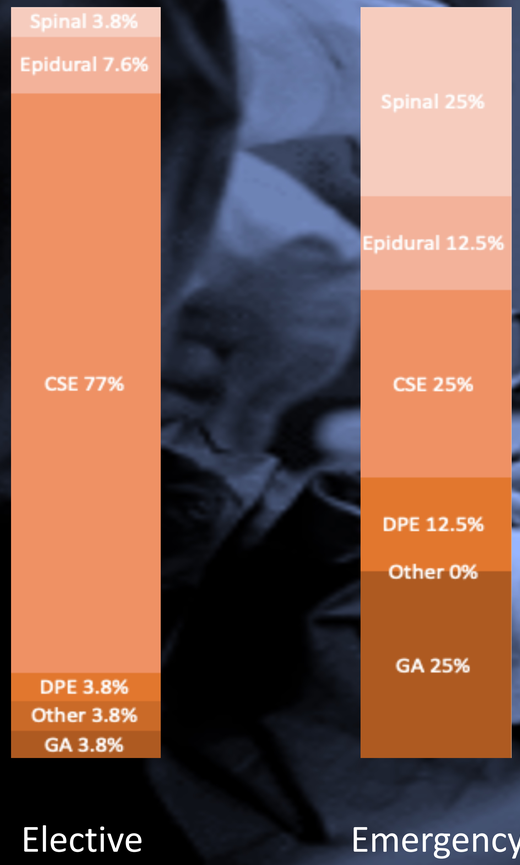
- Mean prior caesareans (range), 1.7 (0 - 4)
- Uterine surgery 24%
- Pre-eclampsia and hypertension 3%
- Smoking 12%.

Placenta Accreta Spectrum

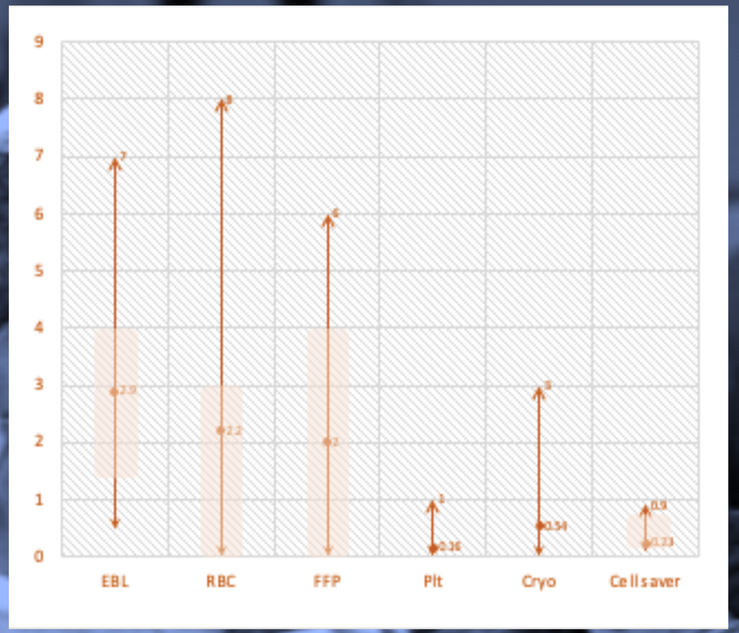


Anaesthesia

The case mix was 76% elective, 24% emergency cesarean sections. Overall, 94%of patients had neuraxial anaesthesia. 1 spinal was converted to a general anaesthesia (GA) in both the emergency and elective groups.



Transfusion Requirements



Cell saver blood was returned to 48% of patients. Where cell saver blood was used, the mean (SD) EBL was 3.2 (1.9) L compared with 2.7 (1.9) L.

Fluid Requirements

The mean (SD) volume of crystalloid infused was 3.29 (3) L with a range of 2 – 6 L. Colloid was used in only 18% of cases with a mean (SD) volume of 125 ((311) mL.

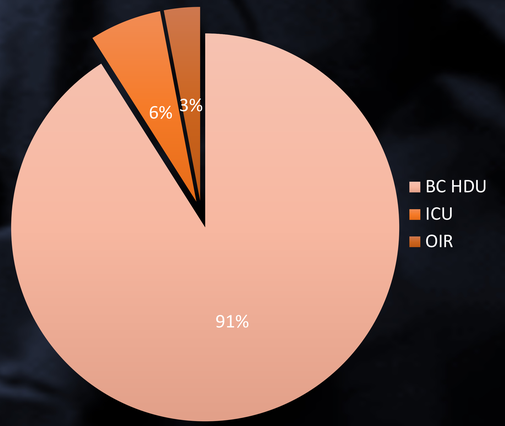
Interventional Radiology

Balloon catheters were inserted in 55% of patients and inflated 76% of instances when they were placed. Embolisation was required in 32%.

Conservative Surgery

Overall the uterus was preserved in 53%, 44% of patients had a hysterectomy and 3% had a subtotal hysterectomy. 87% of hysterectomies occurred in the elective setting.

Postoperative Destination



The mean (range) postoperative stay was 5.6 (1 – 14) days.
Complications occurred in 9% and included:

- Abdominal collection
- Ileus
- Radial artery thrombosis

Discussion

Mode of Anaesthesia

Regional anaesthesia was used more commonly than in the literature [4]; this is likely due to local protocols. The conversion rate for CSEs to GA was zero, and low conversion rates of 6% for other regional approaches. This conversion rate is lower than recent studies ranging from 7 to 14% [3]. The data is supportive of the safety of regional anaesthesia in high risk PAS in the context of a tertiary centre with a multidisciplinary PAS team and clear protocols.

Transfusion Requirements

Regional anaesthesia is often considered to reduce the risk of blood loss, however our EBL results were consistent rather than lower than literature where the majority of cases were performed under GA [4].

Cell saver is routinely used in the elective setting, however data is not available to differentiate between where it insufficient blood was collected to re-transfuse and where it was not set up for use. Use during emergencies is limited by staff training and clinical acuity. The somewhat higher EBL in cases where the cell saver blood was returned to the patient is suggestive that it is being used appropriately in the highest risk cases but there is potential to expand its use to more patients with PAS.

References

[1] Jauniaux et al, Green-top Guideline No. 27a BJOG
[2] Fiszer E et al, Best Pract Res Clin Anaesthesiol, 2022, 36(1):157-64
[3] Lopez-Erazo et al, Indian J Anaesth, 2021, 65(2):153-56
[4] Weiniger et al, Anaesth, 2005, 60 1079-84
[5] Farquhar et al, BMJ Open 2017;7:e017713

Conservative Surgery

The data shows increased rates of conservative surgery compared to the literature [5]. This could be due to a number of anaesthetic and surgical factors, but cannot be considered statistically significant due to our sample size. Of the hysterectomies that did occur, the majority took place during elective procedures. This is likely due to the success screening identifying the most severe cases early.

Postoperative Complications

The rates of postoperative complications captured were lower compared to the literature. The was considerable overlap in the nature of the complications that occurred with respect to wound infections and collections. However, no cases of aspiration, pulmonary embolus or urinary tract infection. This could be due to to fewer GAs resulting in less aspiration, post operative ventilation, reduced ICU admission, earlier mobilisation and urinary catheter removal.

Our ICU admission rate was lower compared with other studies [4]. This may be explained again due to avoidance of GA and the availability of the Hospital Birth Centre High Dependency Unit. This is a 4 bedded level 1 area with a higher staff to patient ratio. Cardiac monitoring and arterial lines are routinely managed by trained staff.

Abnormally Invasive Placenta (AIP) Centres

This model of care is similar to regional networks for major trauma. NHS England commissions AIP Centres to provide specialist prenatal diagnosis, risk assessment and definitive treatment by an MDT with expertise in complex pelvic surgery. These centres have antenatal imaging, adult intensive care, level three neonatal intensive care services and immediate access to blood products.