

Introduction

- Placenta accreta spectrum disorder (PASD) is characterised by abnormal placenta adherence or invasion of the uterine wall and is associated with significant maternal morbidity and mortality.¹
- Following lower segment caesarean section (LSCS), patients with PASD who suffer significant postoperative pain are particularly susceptible to chronic pain development, delayed functional recovery and postpartum depression.²
- Despite this, there is no consensus on optimal anaesthetic management for PASD.^{1,2}
- This retrospective audit evaluated anaesthetic techniques and postoperative pain outcomes in women with PASD undergoing LSCS at North Bristol NHS Trust (NBT).

Methodology

- This audit was registered and approved by the NBT Clinical Audit team.
- A retrospective review of electronic records was conducted for patients with surgically confirmed PASD who underwent LSCS at NBT between March 2020 and September 2025.
- Patients were grouped according to anaesthetic technique: general anaesthesia (GA), GA with spinal anaesthetic, combined spinal-epidural (CSE) or GA with CSE.
- Demographics of these four different groups are summarised in **table 1 below**.
- Primary outcome was post-operative opioid use, measured as total oral morphine in mg equivalents (MMEs).
- Group differences were analysed using the Kruskal-Wallis with Dunn's post-hoc comparisons.
- Secondary outcomes included patient-controlled analgesia (PCA) requirement and opioid-related complication rates both analysed by Fisher's exact tests.

	No. of Cases	Mean Age	Mean BMI	Mean Parity	Mean No. of Prev. LSCS.
GA	5	33	29.8	3.4	2
GA + Spinal	17	34.5	31.3	2.8	1.8
GA + CSE	22	37.1	28.1	2.6	1.9
CSE Alone	12	34.8	29.0	2.1	1.5

Table 1. Demographics of the four patient groups audited. Comparable means for age, BMI, parity & no. of previous LSCS were found.

Results

- Of the 56 cases, 5 underwent GA alone, 17 GA & spinal, 22 GA & CSE & 12 CSE alone
- Total MMEs differed significantly between the four techniques ($p=0.029$), shown in **figure 1**.
- Patients receiving GA alone had the highest mean MME (233mg), significantly greater than those receiving GA with CSE (119mg, $p=0.01$) or CSE alone (109mg, $p=0.035$).
- Patients receiving GA with spinal anaesthesia also used significantly more opioid than those receiving GA with CSE (185mg vs. 119mg, $p=0.044$).

Comparison of Total Post-Operative MMEs used among four different anaesthetic techniques

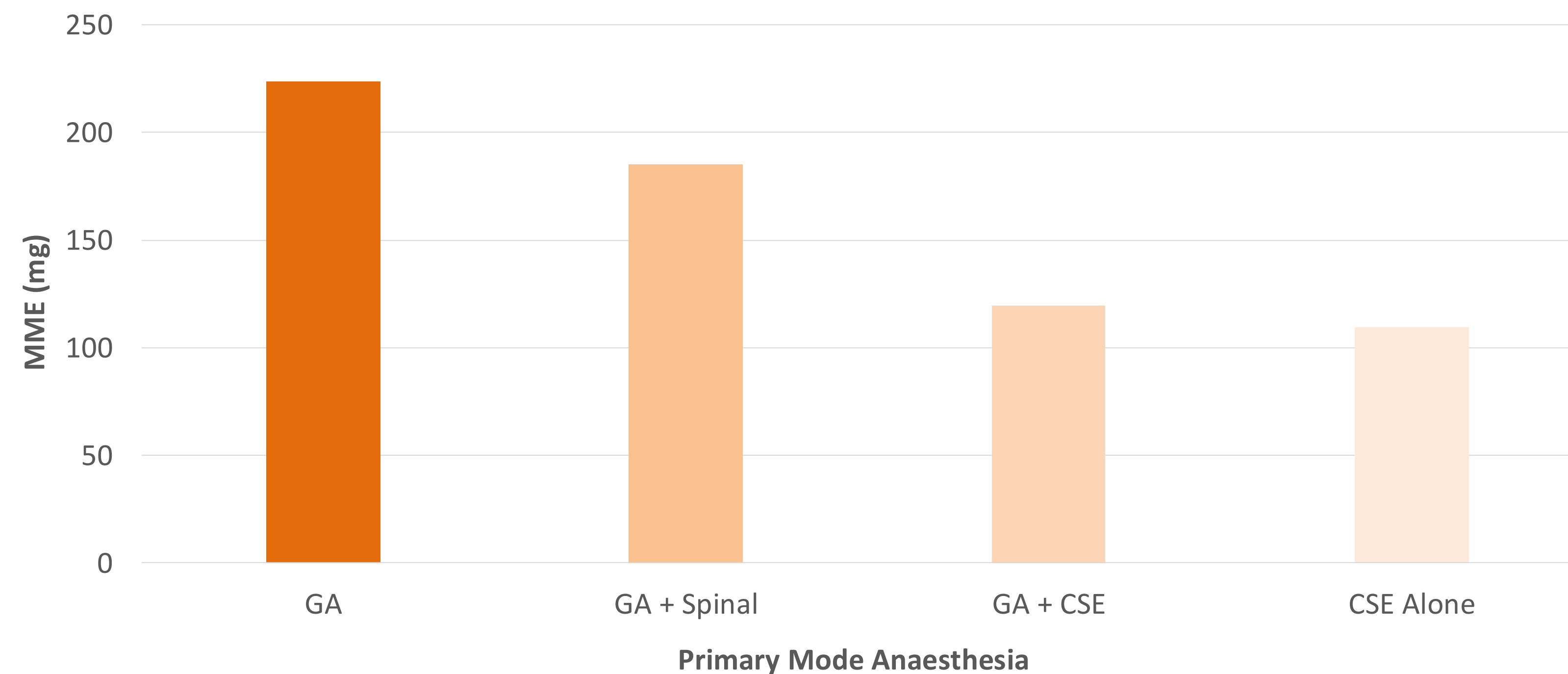


Figure 1. Those patients receiving a GA alone used significantly more post-operative MMEs vs. those patient groups who received a CSE ($p=0.029$). Spinal with GA also resulted in higher MMEs used.

- Use of PCA was also compared between those patients who received CSE (GA + CSE & CSE alone) and those who did not (GA alone & GA + spinal)
- Placement of CSE, alone or with GA, was associated with significantly reduced PCA use ($p<0.01$) as clearly demonstrated in **figure 2**.

Use of PCA in those with & without CSE placed

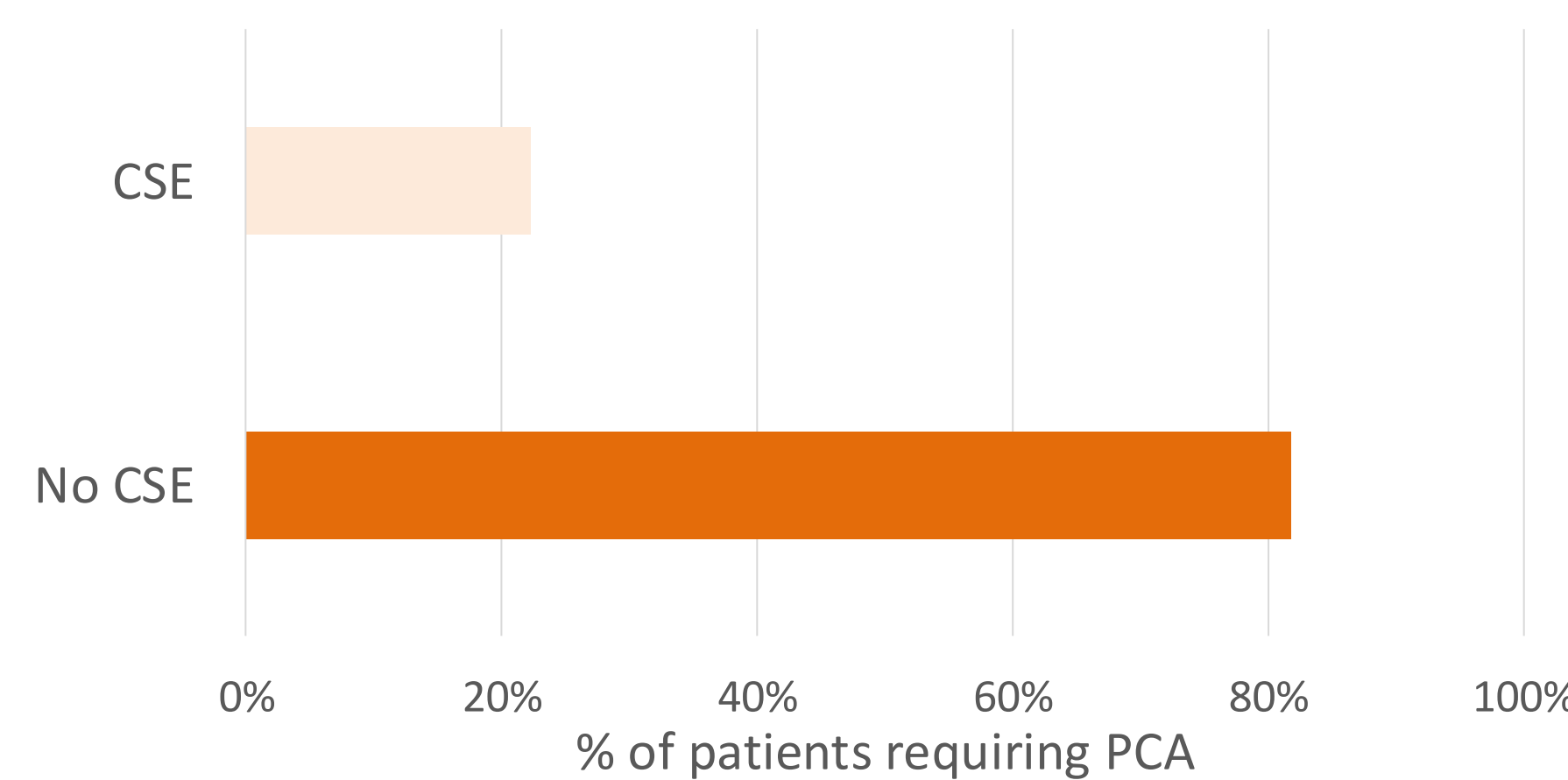


Figure 2. Placement of CSE significantly reduced PCA use

Results Continued

- No. of opioid-related complications between those patients who received a CSE vs those did not receive CSE were also compared.
- Complications found included postoperative ileus, pulmonary embolus & hospital acquire pneumonia.
- Provision of a CSE, alone or with GA, was associated with significantly fewer opioid-related complications ($p=0.027$) as shown in **figure 3**.

Opioid-related complications among those with and without CSE placed



Figure 3. Patients who did not receive a CSE had suffered a higher number of cases of post-operative ileus, PE & hospital acquired pneumonia.

Discussion

- In this retrospective audit the use of CSE, either alone or in combination with a GA, was associated with significantly reduced postoperative opioid requirements.
- Additionally, CSE significantly reduced PCA use and resulted in a fewer opioid-related side effects in women undergoing LSCS for PASD including ileus, pulmonary embolus and hospital acquired pneumonia.
- Although limited by its retrospective design and small sample size, the findings of this audit suggest CSE may offer meaningful analgesic advantages in this high-risk population and support its role as an essential component of anaesthetic management for PASD.

References

- Bartels HC, Lator JG, Walsh D, et al. Anesthesia and postpartum pain management for placenta accreta spectrum: The patient perspective and recommendations for care. Int J Gynaecol Obstet . 2024 Mar; 164(3): 992-1000
- Panjeton GD, Reynolds PS, Saleem D, et al. Neuraxial anesthesia and postoperative opioid administration for cesarean delivery in patients with placenta accreta spectrum disorder. A retrospective cohort study. Int J Obstet Anesth. 2022; 49: 103220