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CLINICAL ARTICLE

Obstetrics

Anesthesia and postpartum pain management for placenta accreta spectrum: The patient perspective and recommendations for care

Helena C. Bartels[1] | Joan G. Lalor[2] | Don Walsh[3] | Albaro José Nieto-Calvache[4] | Kristen Terlizzi[5] | Naomi Cooney[6] | José Miguel Palacios-Jaraquemada[7] | Doireann O'Flaherty[8] | Siaghal MacColgain[3] | Robert ffrench-O'Carroll[3] | Donal J. Brennan[9]

[1]Department of Obstetrics and Gynaecology, School of Medicine, University College Dublin, National Maternity Hospital, Dublin 2, Ireland

[2]School of Nursing and Midwifery, Trinity College Dublin, Dublin, Ireland

[3]Department of Anaesthesiology, National Maternity Hospital, Dublin 2, Ireland

[4]Clinica de Espectro de Acretismo Placentario, Fundación Valle del Lili, Cali, Colombia

[5]National Accreta Foundation, Saratoga, California, USA

[6]Placenta Accreta Ireland, Dublin, Ireland

[7]Hospital Universitario de CEMIC, Buenos Aires, Argentina

[8]Department of Obstetric Anaesthesiology, Coombe Women's Hospital, Dublin, Ireland

[9]University College Dublin Gynaecological Oncology Group (UCD-GOG), Mater Misericordiae University Hospital and St Vincent's University Hospital, Dublin, Ireland

Correspondence
Donal J. Brennan, UCD School of Medicine, Catherine McAuley Research Centre, Mater Misericordiae University Hospital, Eccles Street, Dublin 7, Ireland.
Email: donal.brennan@ucd.ie

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Abstract

Objective: Placenta accreta spectrum (PAS) is a high-risk complication of pregnancy, which often requires complex surgical intervention. There is limited literature on the patient experience during the perioperative period and postpartum pain management for PAS. Therefore, this study aims to explore the patient perspective of anesthesia care.

Methods: Ethical approval was granted by the hospital ethics committee (EC02.2023). This was a descriptive survey study, including women with a history of pregnancy complicated by PAS who were members of two patient advocacy groups. The survey, consisting of both open and closed questions, was performed over a 6-week period between January and March 2023. Content analysis was performed on qualitative data to identify themes, and recommendations for care are suggested.

Results: A total of 347 participants responded to the survey; 76% ($n = 252$) had a cesarean hysterectomy ($n = 252$), and general anesthesia was the most common primary mode of anesthesia (39%, $n = 130$). We identified two overarching themes: experiences of anesthesia and experience of postpartum pain management. Under experiences of anesthesia, three subthemes were identified, namely "communication with the anesthesiologist", "deferring to the expertise of the team", and "consequences of decision around the mode of anesthesia." Under postpartum pain management, two subthemes emerged: "support of specialist PAS team" and "poor pain management following PAS surgery".

Conclusions: Women want to be involved in decisions around their care, but do not always understand the consequences of their decision-making, such as missing the birth of their child. An antenatal anesthesiology consultation is important to provide women with information, explore preferences, and develop a plan of care for the birth.

KEYWORDS
lived experience, obstetric anesthesia, pain, placenta accreta spectrum

1 | INTRODUCTION

Placenta accreta spectrum (PAS) is a rare complication of pregnancy where the placenta fails to separate from the myometrium after birth.[1] PAS is associated with significant maternal morbidity, largely related to massive obstetric hemorrhage and surgical complications.[2,3] Birth for women with PAS is often complex, and may involve midline laparotomy, cesarean hysterectomy, and/or massive obstetric hemorrhage.[4–6] Surgical time can be lengthy, with operating times of up to 3 h.[5,7,8]

Various primary anesthetic approaches are used for the birth, including general anesthesia (GA), neuraxial (epidural, spinal, or combined spinal-epidural), or a combination of both.[9] The combined approach refers to neuraxial anesthesia until the baby is delivered, to allow the woman to be awake for the birth of her baby, with conversion to GA for the cesarean hysterectomy. There is currently no consensus on what is the ideal primary mode of anesthesia for PAS cases.[9–11]

Experiences of anesthesia for women with a pregnancy complicated by PAS are poorly documented. To our knowledge, no studies to date have explored the possible impact of experiencing distress, anxiety or pain from inadequate neuraxial anesthesia, or missing the birth of their baby due to GA on postpartum mental health or post-traumatic stress disorder. Two qualitative studies have suggested variation in the preferences of women, with some grateful to have been awake for the birth, while others found the experience traumatic and frightening.[12,13]

We sought to explore the experiences of women with a history of PAS relating to their anesthesia for birth and postpartum pain management, and use their experiences to make recommendations for care.

2 | MATERIALS AND METHODS

This is a descriptive survey study conducted over a 6-week period between January and March 2023. Ethical approval was granted by the National Maternity Hospital ethics committee (EC02.2023) and informed consent was obtained from participants.

2.1 | Survey design

Two separate surveys were designed: one for women with a history of PAS and one for health care providers. The results of the health care provider survey are presented separately. An initial draft of questions to explore the theme of anesthesia and postnatal pain management in PAS was developed in conjunction with patient representatives from two PAS patient advocacy groups (one in the United States and one based in Ireland). Questions were removed and added by consensus, with a final survey consisting of both quantitative questions and open-ended questions to obtain qualitative data. The final survey was approved by all researchers and patient advocates prior to survey distribution. The patient survey included 21 questions, of which eight allowed for an open-ended response that explored two overarching themes: experience of anesthesia for the birth and experience of postpartum pain management (survey questions, Supplementary Material). As little is known on the lived experience in this area, open-ended questions were essential as no validated questionnaires were available for use. Open-ended questions were required in order to gain new information that is currently not understood, and therefore could not be explored through the use of quantitative questions only.

2.2 | Survey distribution

The survey was distributed through two patient advocacy groups and was available in both English and Spanish. Women who had previously agreed to be contacted about research projects were contacted directly with a link to complete the survey by the advocacy group leads (authors KT and NC). In addition, an invitation to participate was made on social media, with a link sent to women who responded.

2.3 | Qualitative analysis

Content analysis was applied to the narrative comments from participants to identify key themes.[14] Two researchers (authors HB and JL) reviewed the comments and assigned codes to identify strong themes within the data. Final themes were selected. Similarly, comments on experiences of care were coded and final recommendations for care based on participant responses were developed. Finally, a further meeting was held with patient representatives and advocates to address whether the themes were consistent with and resonated with their experiences. Supporting quotes for each theme are included in the tables and manuscript; quotes were selected to ensure that the various geographical regions of participants were represented.

2.4 | Statistical analysis

Statistical analysis was performed in RStudio (version 4.2.2).[13] Contingency tables were used to calculate unadjusted odds ratios

(ORs) and 95% confidence intervals (CIs) between categorical variables. χ^2 tests were used to compare categorical data between the study groups. A two-tailed P value <0.05 was considered significant.

3 | RESULTS

A total of 347 participants responded to the survey; 550 were approached to take part, resulting in a 63% response rate. The majority of participants were from North and South America (Figure 1). Eight questions allowed for an open-ended response and were used for qualitative analysis (response rate of 62% [$n=215$]). Fifty-two percent of participants reported that they ($n=181$) were cared for by a PAS specialist team. Additional demographics are presented in Table 1.

The first overarching theme identified was experience of anesthesia, with three main subthemes: "communication with the anesthesiologist" "deferring to the expertise of the team" and "consequences of decision around the mode of anesthesia". Further supporting quotes for each theme are presented in Table 2.

Most women felt their anesthesiology team was well prepared for the birth (76.5%, $n=265$) and were overall satisfied with their anesthesia experience (85%, $n=290$). The majority of women (82%, $n=246$) wanted to be awake for the birth of their baby (Table 3); however, only 60% reported that this actually happened and only 56% ($n=170$) felt they were given enough information to make an informed decision.

Women who were involved in the decision of the mode of anesthesia felt listened to: "It was so important for me to be awake and I am grateful that my team allowed me to make that choice, even though it wasn't their preference…" and were more accepting of changes to their care plan: "It was well managed. I was less scared when things began to get serious, because my doctor and anesthesiologist had meticulously planned and included my wishes or compromised as much as possible. They fully prepared me…."

In contrast, others felt their concerns were not listened to or taken into consideration; for example, one woman wrote: "I was told I could be awake for delivery and then use general anesthesia for the hysterectomy. But the surgeon insisted on general anesthesia the morning of surgery without informing me until the operating room." Others commented on how being awake for the birth was very frightening and regretted that they did not have the option of a GA, with one woman saying: "I was awake for a lot longer than I wanted/needed to be; I am haunted by that experience, as it was deeply unpleasant."

A total of 43% ($n=129$) of women would prefer to "defer to the expertise of the team" to make decisions around anesthesia. Their responses suggest that they appeared grateful that their health care team acted in their best interests. For example, a woman who had planned for neuraxial anesthesia for the birth but required GA due to an emergency delivery commented: "I didn't want to be put to sleep but it was in my best interest after the birth of my baby due to the severity of complications I was experiencing. I am thankful my health care team took the necessary steps to save my life." For others, they recognized that while their team acted in their best interests, this did not always mitigate the fear and worry of a birth complicated by PAS: "they did the best they could, but the whole experience was terrifying and I have post-traumatic stress disorder from it."

Under the third subtheme "consequences of decision around the mode of anesthesia", it emerged that some women were unprepared for the consequences of the decision made relating to the mode of

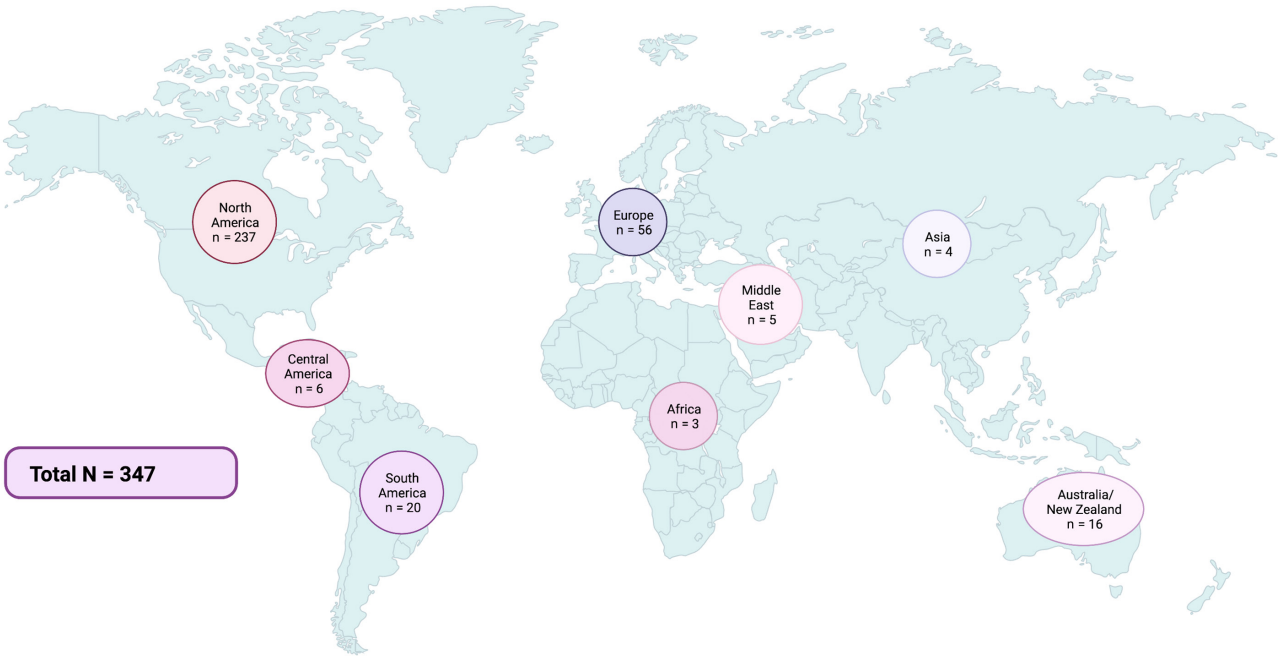

FIGURE 1 Geographical location of participants.

TABLE 1 PAS pregnancy details and experience of anesthesia.

	Women with a history of PAS (*N* = 347)
Demographics	
Age (years)	
18–24	2 (0.3)
25–34	101 (29.3)
35–44	210 (64)
45–54	34 (6.4)
Obstetric history	
Number of previous vaginal deliveries	
0	263 (75.8)
1	48 (14)
2	21 (6)
3	6 (1.7)
≥4	2 (0.5)
Missing data	7 (2)
Number of previous cesarean sections	
0	49 (15)
1	172 (49)
2	68 (19.5)
3	36 (10)
≥4	15 (4.5)
Missing data	7 (2)
PAS pregnancy details	
Time since pregnancy complicated by PAS (months)	
<6	28 (7.6)
Between 6 and 12	47 (14)
Between 12 and 24	70 (20.4)
>24	195 (56)
Missing data	7 (2)
Cared for by a PAS specialist team	
Yes	181 (52)
No	145 (42)
Unsure	14 (4)
Missing data	7 (2)
Pregnancy anesthesiology consult	
Yes	200 (57)
No	110 (33)
Planned but had an emergency birth prior to consult	30 (8)
Missing data	7 (2)
Gestational age at delivery (weeks)	
Under 24	5 (1.6)
Between 24 and 30	29 (9.4)
Between 30 and 36	193 (56)
After 36 weeks	113 (31)
Missing data	7 (2)
Delivery type	
Elective	215 (62)
Emergency	125 (36)
Missing data	7 (2)
Cesarean hysterectomy	
Yes	252 (75)
No	88 (23)
Missing data	7 (2)
Blood transfusion	
Yes	256 (78)
No	84 (20)
Missing data	7 (2)
Abdominal surgical scar from PAS surgery[a]	
Midline	143 (41)
Transverse	163 (47)
Both a transverse and a midline	28 (8.3)
No surgical scar	6 (1.7)
Missing data	7 (2)
Patient experience of anesthesia	
Anesthesia for the birth	
General anesthesia only	130 (38)
Neuraxial until the birth, then general anesthesia	125 (36)
Neuraxial anesthesia only	85 (24)
Missing data	7 (2)
Support partner able to be present for some/all of the birth	
Yes	175 (50)
No	165 (48)
Missing data	7 (2)
Overall satisfied with anesthesia	
Yes	290 (83.5)
No	50 (15)
Missing data	5 (1.5)
Did you feel your anesthesiology team was well prepared for the birth?	
Yes	265 (76.5)
No	75 (20.5)
Missing data	5 (1.5)
Would you have found the use of a decision aid tool helpful?[b]	
Yes	300 (87)
No	35 (11)
Missing	7 (2)

Note: Values are expressed as number (percentage) unless otherwise stated.

Abbreviation: PAS, placenta accreta spectrum.

[a]For χ^2 calculation, midline and midline and transverse were considered as one category under "midline."

[b]A decision aid is a tool to allow patients to participate in decision-making when facing choices on health care options; the decision aid presents the advantages and disadvantages of each decision to be made. The accompanying decision aid for this study is available to view in the supplementary materials here.[23]

TABLE 2 Patient qualitative results: codes and supporting quotes ($N = 215$).

Overarching theme 1: Experience of anesthesia	
Subtheme 1.1: Communication with the anesthesiologist	Supporting quotes
Subtheme 1: Feeling heard	"The medical team at first wanted me to be awake for the birth and asleep for the hysterectomy. I expressed deep concern about severe anxiety and PTSD if things went poorly and had to be put to sleep quickly. They respected my wishes and put me to sleep for the whole thing."
	"I am incredibly grateful that, the anesthesiologist allowed me to be awake for my hysterectomy rather than putting me to sleep. She was willing to listen to my preferences and honor them. It made my accreta experience easier to cope with."
	"It was so important for me to be awake and I am grateful that my team allowed me to make that choice, even though it wasn't their preference. Not knowing how I would feel several hours in to the delivery, I was equally grateful to be allowed to decide to be put to sleep. The anesthesia portion was the most critical decision I was able to make."
	"I was so glad I was awake the whole time so I was informed of what was happening. That was important to me. The level of care was great and I really appreciated them asking me what I wanted and making me feel comfortable during the surgery. They played music for me and checked in constantly."
	"It was my choice to go to sleep after the birth of my baby once they proceeded to hysterectomy because the experience of listening to the increasing worried communication between staff in the room and the sensation of the surgery was too overwhelming for me emotionally. I was grateful to be awake for the birth and it helped me bond with my baby."
Subtheme 2: Not listened to	"Part of me wanted general anesthesia the whole time but my doctor talked me out of it. I am happy I was awake to see my baby, but part of me wished I was asleep for it all. It was a very intense and scary surgery."
	"I was told I could be awake for delivery and then use general anesthesia for the hysterectomy. But the surgeon insisted on general morning of surgery without informing me until OR."
	"They insisted I have my art line placed before going under general anesthesia. My birth was planned and I was not going to be awake for any part of it. (Not an emergency) I advocated for myself and declined the art line while I was awake. The nurse tried to insist saying it would not hurt. I'm a nurse I've seen them placed. No thank you!"
	"The anesthesiologist really wanted me to be under general anesthesia for the whole surgery, but I did not want to. My obstetrician advocated for me, and they ended up letting me be awake until they decided they could not save my uterus and needed to do the hysterectomy."
Subtheme 1.2: Deferring to the expertise of the team	"It likely saved my life as I had severe bleeding and had to be sedated."
	"At the time it was necessary… I was put to sleep quickly for the hysterectomy. During that time I remember hearing voices and dreaming. Looking back I wonder if I was at risk of being given the wrong anesthesia and it not working properly."
	"I feel that I was well informed about anesthesia before my delivery. It was never really suggested that I be awake and I think this was as a result of the severity of my accreta. It would have been nice to be awake for my daughter's birth; however, my surgery was 6 hours with a lot of blood loss and transfusions. I think being awake for any if this would have been frightening. I think the team made the appropriate choice/advice given my case."
	"I have to compliment my anesthetist…. He recognized and was sympathetic to the fact that missing the birth of a child is a really unfortunate and potentially traumatic thing, and assured me I was a good candidate for this (staying awake)."
Subtheme 1.3: Consequences of decision around the mode of anesthesia	"I made the decision to have general anesthesia so that I could allow my medical team to best care for me and my daughter. However, I regret not being able to see my daughter's birth or have my husband in the room for any of the surgery."
	"My doctors would not offer the option of being awake for the hysterectomy. I missed being awake for my baby's birth, but there is no way I would have wanted to be awake that long was so grateful for myself and my baby to come through the surgery."
	"Wish I could of been there to see the birth of my last child. It was very hard emotionally to miss that after everything I was going through. I felt being asleep delayed the bonding between my child and I. In the end it ended up being for the best as I went into DIC and needed extensive intervention and transfusions and for that I was thankful I wasn't awake during that."
	"My team was amazing and very well prepared, however, it did not make it easier to be completely asleep for the entire surgery and then not meet my son until 24 hours later. It was extremely difficult to deal with."

TABLE 2 (Continued)

Overarching theme 2: Experience of postnatal pain management	
Subtheme 2.1: Support of specialist PAS team	"I was in the ICU for about 6 days post op, the first 2 days I was kept sedated and on the ventilator. After, I was in significant pain much of the time, but the nurses and doctors from my accreta team worked hard to try and help manage it."
	"My concerns about my pain management were addressed by the medical team and center where I received care. A specialized ICU team and nursing staff is a benefit to accreta spectrum mothers."
	"My pain management team visited me daily and they did a wonderful job making sure my pain was as controlled as possible."
	"Being awake was perfect and what we had planned with my team. I was able to just transition to the postpartum floor, my pain was very well managed and my accreta team checked on me daily, and I got to be with my baby very soon after."
Subtheme 2.2: Poor pain management following PAS surgery	"I do not believe I was placed in the right care after birth, before birth my care was amazing but had I been on a more closely watched unit of the hospital I feel I would have had better pain control. I was on a regular postpartum floor which I do not believe I belonged on with such an intense surgery. I could not walk and was in severe pain after."
	"I was treated like a drug-seeker hours after childbirth. I wasn't made aware that healing would be more difficult after hysterectomy than the c-sections were. Once the baby was delivered, my well-being was an afterthought."
	"I felt that the nurses were not supportive with my pain management and constantly questioned my reports of pain."
	"On paper the plan sounded great. At the time I felt that some of the midwives viewed me as being in the same category as a standard c-section when it came to pain management…. There was little to no understanding of why I was in so much pain."

Abbreviations: DIC, disseminated intravascular coagulation; ICU, intensive care unit; PAS, placenta accreta spectrum; PTSD, posttraumatic stress disorder.

anesthesia. Women who did not feel that they had been given the choice to be awake for the birth were unprepared for the emotions they would feel as a result: "They didn't give me the option to be awake for the birth of my child…and I'm very sad about that missed moment." Others who were actively involved in choosing to have a GA regretted the loss of partner support and seeing the birth of their child, "I made the decision to have general anesthesia… However, I regret not being able to see my daughter's birth or have my husband in the room for any of the surgery." Others were left wondering whether this negatively impacted their baby, such as "…looking back I would have been ok staying awake so at least my daughter wouldn't have had a sleepy entrance into the world and be without her mum…"

The second overarching theme was experience of postnatal pain management. Forty percent ($n = 137$) reported that their postpartum pain control was very poor or poorly managed, with 17% ($n = 58$) reporting severe pain (Table 4). Poor pain control was more likely in women who did not have an anesthesiology consult (OR, 2.39 [95% CI, 1.48–3.87]) and who had a cesarean hysterectomy (OR, 2.22 [95% CI, 1.33–3.83]) (Table 4). Two main subthemes were identified: "poor pain management following PAS surgery" and "support of a specialist PAS team" (Table 3).

Under "poor pain management following PAS surgery" some women felt their postoperative care was similar to a routine cesarean section: "I don't know if they understood what I had been through" and felt their concerns were not addressed: "I was in tremendous amounts of pain. They didn't listen to me." Some participants reported a lack of awareness around the specific needs of women with postnatal PAS. "The nurses were not given adequate information about my surgery (I was listed as a standard cesarean section) and complications." Inadequate pain management may also be a significant contributor to the emotional and psychological sequelae of a pregnancy complicated by PAS: "the pain is something that I will always be traumatised about."

Conversely, evaluation of the "support of specialist PAS team" subtheme suggested that some participants felt their pain management was adequate; for example, one woman said: "My pain management team visited me daily and they did a wonderful job making sure my pain was as controlled as possible." Another stated: "My concerns about my pain management were addressed by the medical team and center where I received care." Although women cared for by a specialist team still reported pain, they felt this was acknowledged, acted up, and treated as best as possible by their team: "I personally had severe pain after—I feel my accreta team did everything in their power to accommodate to make me as comfortable as they could with pain medications."

Based on these findings, we developed recommendations regarding the involvement of women with a suspected PAS diagnosis in anesthesia care (Figure 2). Supporting quotes for each recommendation are presented in Table S1.

First, we suggest that all women with suspected PAS have an antenatal anesthesiology consultation. This visit should offer thorough counseling regarding anesthetic options, explore the woman's preferences, and provide written information. Women who did not have an anesthesiology consultation were more likely to report not being given enough information about the options of anesthesia (OR, 7.69 [95% CI, 4.32–14.13]) and were more likely to experience poor pain control in the postnatal period. As part of this consultation, a

TABLE 3 Participant preferences for anaesthesia.

Level of agreement with the following statements (*N* = 302)	Strongly disagree-agree	Agree-strongly agree	Unsure
It was important to me to be awake for the birth of my baby	37 (12)	246 (82)	19 (6)
I wanted to be awake for the birth, but then be put to sleep once my baby was born	129 (43)	113 (38)	60 (19)
I was given enough information about the different options of anaesthesia to make an informed choice	93 (31)	170 (56)	39 (13)
I was told a specific option for anaesthesia was the best one for me (such as staying awake or being asleep), and not given a choice	110 (36)	155 (52)	37 (12)
I wanted my healthcare team to decide what is best for me, and not ask me to make the decision	135 (44)	129 (43)	38 (13)

TABLE 4 Postpartum pain management.

	N (%) *N* = 337	
In the days after the birth, was your pain well managed?		
Very poorly managed (I was in severe pain)	58 (17)	
Poorly managed (I was in pain)	79 (23)	
Well managed (I had mild pain)	154 (45)	
Very well managed (I experienced very mild to no pain)	46 (15)	
Associations with poor pain control	**OR (95% CI)**	***P* value**[a]
No specialist team	1.37 (0.86; 2.17)	0.199
Midline skin incision	1.08 (0.69; 1.68)	0.737
Support partner at delivery	1.34 (0.85; 2.12)	0.207
No anaesthesia consult	2.39 (1.48; 3.87)	0.0004
Caesarean hysterectomy	2.22 (1.33; 3.83)	0.002
Emergency delivery	1.84 (1.17; 2.92)	0.010

[a]Chi square.

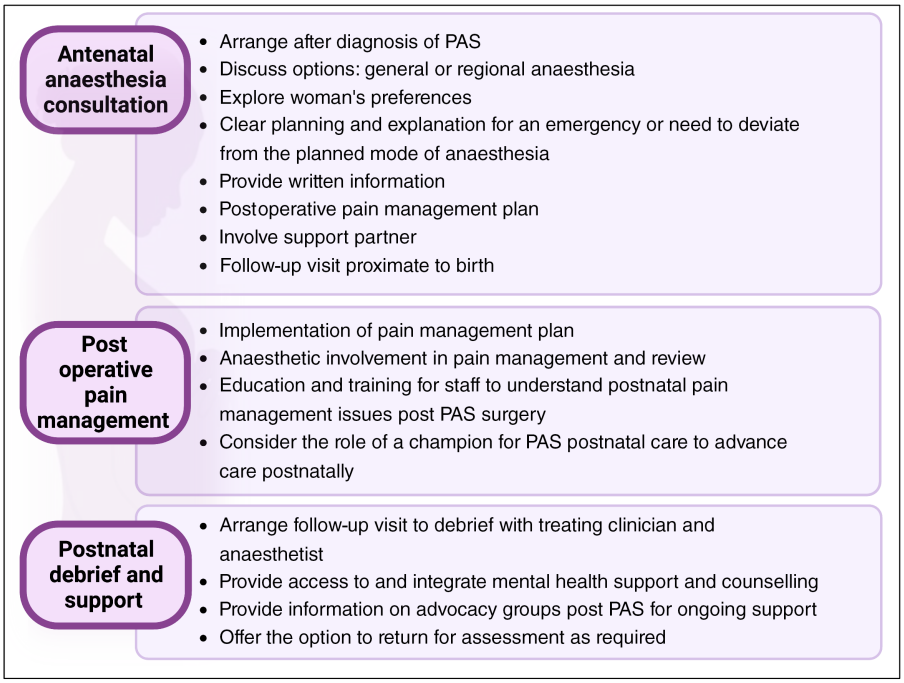

FIGURE 2 Recommendations for patient involvement in anesthesia care. PAS, placenta accreta spectrum.

discussion should be had regarding a postoperative pain management plan.

As some participants felt the staff caring for them after the birth were not aware of their postnatal care needs, we recommend education and training for staff should be provided. This training should focus on the differences between these patient cohorts and routine elective cesarean sections, highlighting their additional postoperative care needs, particularly relating to analgesia.

Finally, we suggest that all women have a postnatal debrief visit with their treating clinician. If women have additional questions around their care that cannot be adequately addressed by their treating clinician, a debrief with the anesthesiologist should be offered. The postnatal debrief is important to ensure that women are not left uncertain of events of their pregnancy and have a clear understanding of why decisions were made.

4 | DISCUSSION

This study explored the patient experience of anesthesia for PAS. We found that the decision concerning the mode of anesthesia for the birth was central to women's experience. As one woman stated, it was the "most critical decision" she could make. They valued being listened to and able to actively participate in their care; clear and concise information helped women to cope with deviations from the plan as a result of an emergency delivery and/or complications. Where this occurred, women deferred to the expertise of their team. For some, their postpartum pain management was inadequate, and a lack of understanding of their specific postnatal needs was identified as a key contributor to this deficiency.

There is no preferred primary mode of anesthesia for birth in PAS from a patient or health care professional perspective.[9,15,16] This study demonstrates that women value information, choice, and being informed of the risks and benefits of each option and would benefit from an antenatal anesthesiology consultation. This appeared to alleviate some of the stressors associated with a birth complicated by PAS and made them feel more prepared and empowered.

Up to one third of women experience birth trauma after giving birth;[17,18] PAS is associated with a higher risk of posttraumatic stress disorder compared with an uncomplicated cesarean section,[19] with patients reporting significant emotional and psychological sequelae that can last for many years.[12,13,20] Our study suggests that inadequate postoperative pain management may exacerbate this traumatic experience. Given these findings, it seems essential that women with a pregnancy complicated by PAS are routinely offered a postnatal review for debriefing. Postnatal debriefing is valued by many women, particularly when they are able to have their story heard and uncertainties related to their birth explained.[21] Such a review would likely help patients deal with many of the outstanding questions about their anesthesia and pain management, which were highlighted in this study.

This study has a number of strengths and limitations. To our knowledge, the experience of anesthesia in women who had a pregnancy complicated by PAS has not previously been reported, and this study gives unique insights into their lived experience. Furthermore, participants from various geographical regions were included in this survey, ensuring that a global cohort was represented. The combination of closed and open questions allowed us to explore both the quantitative data and, subsequently, the experience and perceptions of participants.

All women with a history of PAS who responded to this survey were members of a patient advocacy group to agree to participate in research, and their experiences may differ from women who do not seek support in this way. Participants self-reported that their pregnancy outcomes and medical records were not reviewed as part of this survey study. Moreover, the open-ended questions used for the qualitative analysis of this work do not provide the same level of depth as an interview would. However, the response rate from participants for the narrative comments was large, with most participants who did answer the open-ended questions responding to each of them. Furthermore, we have previously conducted in-depth interviews with women with a history of PAS, the findings of which relating to the experience of anesthesia were consistent with the experiences presented here.[12,22]

In conclusion, women with pregnancies complicated by PAS require individualized care planning. Women valued being informed and involved in the plan for their anesthesia care. While many accepted the complex and dynamic situation of a pregnancy complicated by PAS, being informed helped them to cope with uncertainty and accept changes to their care plan if an emergency arose. An antenatal anesthesiology consultation provides an opportunity to manage women's expectations and prepare for the birth. The decision around the final mode of anesthesia should be tailored to the plan for surgery, taking into consideration the woman's preferences and anticipated complications for each case.

AUTHOR CONTRIBUTIONS

Ethical approval: Helena C. Bartels, Doireann O'Flaherty, Donal J. Brennan. *Study design*: Helena C. Bartels, Joan G. Lalor, Don Walsh, Kristen Terlizzi, Naomi Cooney, Robert ffrench-O'Carroll, Donal J. Brennan. *Study planning*: Helena C. Bartels, Joan G. Lalor, Don Walsh, Kristen Terlizzi, Naomi Cooney, Robert ffrench-O'Carroll, Donal J. Brennan. *Data collection and analysis*: Helena C. Bartels, Joan G. Lalor, Don Walsh, Kristen Terlizzi, Naomi Cooney, Robert ffrench-O'Carroll, Albaro José Nieto-Calvache, José Miguel Palacios-Jaraquemada, Doireann O'Flaherty, Siaghal MacColgain. *Manuscript writing*: Helena C. Bartels, Joan G. Lalor, Don Walsh, Robert ffrench-O'Carroll, Doireann O'Flaherty, Donal J. Brennan. *Manuscript editing*: Helena C. Bartels, Joan G. Lalor, Don Walsh, Kristen Terlizzi, Naomi Cooney, Robert ffrench-O'Carroll, Albaro José Nieto-Calvache, José Miguel Palacios-Jaraquemada, Doireann O'Flaherty, Siaghal MacColgain. All authors read and approved the final manuscript.

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CONFLICT OF INTEREST STATEMENT

The authors have no conflicts of interest to declare.

DATA AVAILABILITY STATEMENT

Research data are not shared.

ORCID

Helena C. Bartels https://orcid.org/0000-0002-6470-9364

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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