

Pioneering a cutting-edge approach in placenta accreta spectrum disorders: multivessel selective embolization and intraoperative ultrasound

Nelinda Catherine P. Pangilinan MD, Catherine M. Ort    ez MD, Feliza Vida D. Cortez MD, Josephine I. Uy MD

Introduction

This case series aimed to describe the use of a multi-disciplinary approach using intraoperative ultrasound (IOUS) with multivessel selective embolization (MVSE) in the conservative management of advanced placenta accreta spectrum (PAS) disorders at a tertiary referral hospital in the Philippines, in terms of uterine preservation, blood loss, and maternal morbidity.

Methodology

Records were reviewed; all cases managed by a multidisciplinary team. Eleven consecutive cases of placenta accreta with PAS score 2 or 3 were presented, managed conservatively with uterine preservation with intraoperative ultrasound and multivessel selective embolization at a tertiary referral center in the Philippines from July 2022 until December 2024. Demographic data, operative course, intraoperative ultrasound findings, perioperative complications, blood loss and maternal morbidity are presented..

Results

Intraoperative ultrasound was useful in guiding the uterine incision to avoid the placental edge, quantify degree of vascularization, and identify areas of placental adhesion, facilitating placental removal. The most common vessels embolized were the internal iliac and uterine arteries, with an average of 3 vessels embolized per case. Of the 11 cases, the uterus was preserved in 9 cases, blood loss ranged from 420 – 2650cc, with no surgical complications except for bladder tear in 1 case. Anemia from hemorrhage was the most common complication.

Conclusion

This study was able to demonstrate importance of a multi-disciplinary approach and the role of intraoperative ultrasound in guiding the uterine incision, degree of devascularization, and facilitating placental removal. There was decreased maternal morbidity, blood loss, need for blood transfusion, with complete manual extraction of placenta, uterine preservation, with minimal surgical complications.

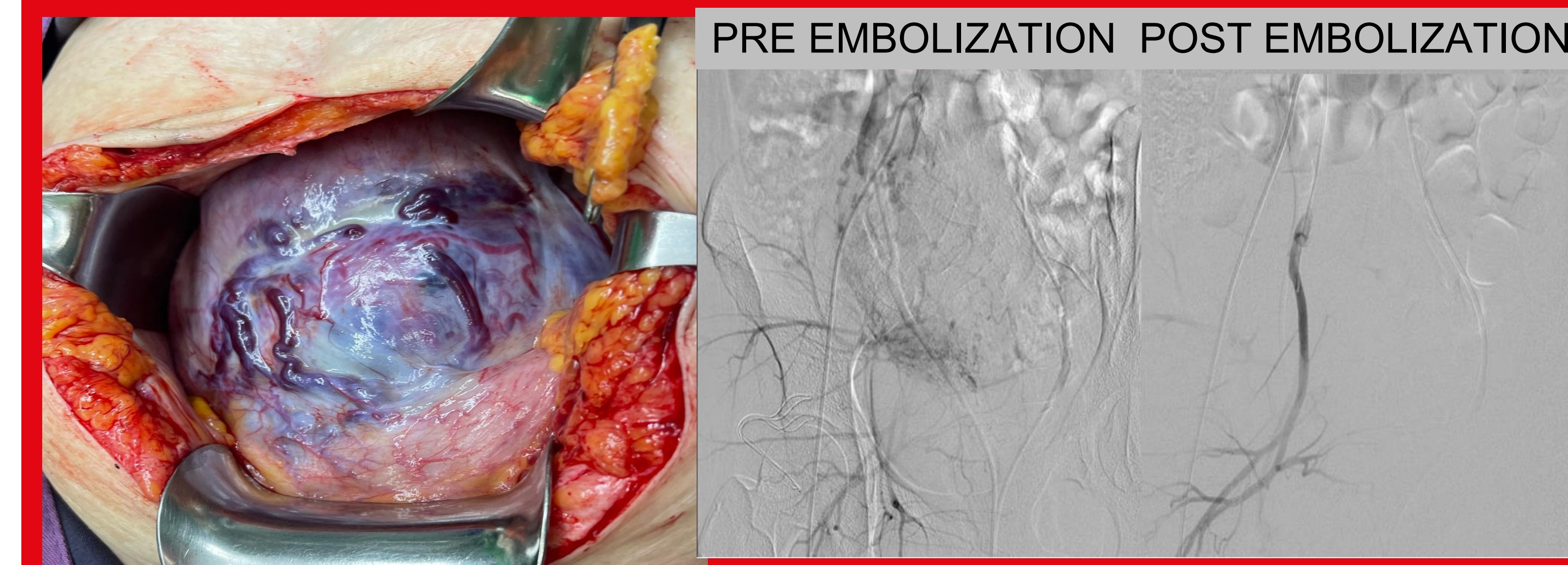


Figure 1. IOUS showing prominent engorged vessels over the uterine surface. Pre embolization compatible with IOUS findings. Post embolization decrease vascularization

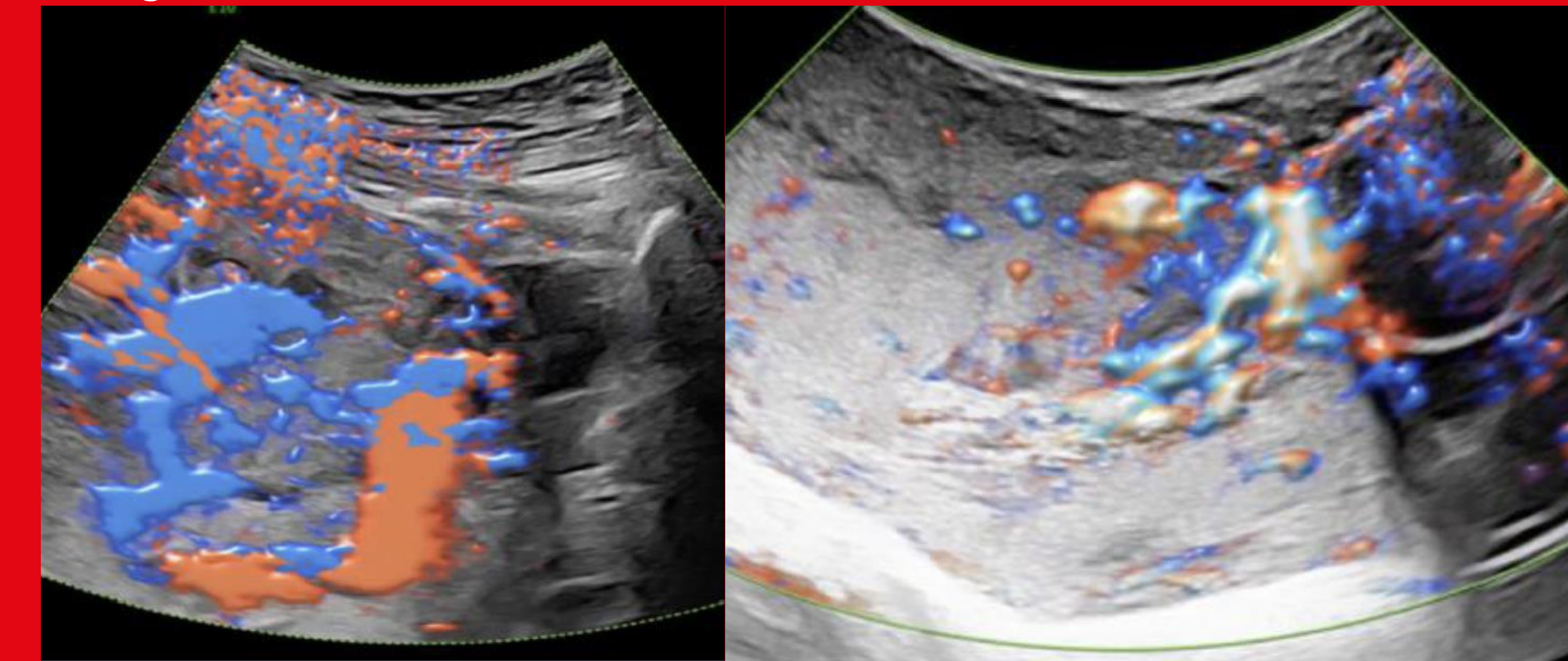


Figure 2. IOUS Pre CS and Post CS

No.	PAS Score	# vessels embolized	Vessels Embolized	Blood loss (ml)	Blood transfusion	Peripartum complication	Surgical complication	Uterine preservation
1	2	5	Bilateral UA, IIA, anterior division branches	2650	Y	Anemia from hemorrhage	NONE	ACHIEVED
2	3	1	Right UA and branches	1200	Y	Anemia from hemorrhage	NONE	ACHIEVED
3	3	2	Bilateral UA	420	N	None	NONE	ACHIEVED
4	2	2	Left UA, Right IIA	700	Y	Anemia from hemorrhage	NONE	ACHIEVED
5	3	2	IIA, direct ultrasound-guided gel foam embolization of LUS placenta	2000	Y	Anemia from hemorrhage	NONE	ACHIEVED
6	2	5	left IIA, bilateral UA, bilateral VA	420	Y	Anemia from hemorrhage	NONE	ACHIEVED
7	3	5	Right CIA, anterior and posterior branch of right IIA; Left CIA, anterior branch of IIA	900	Y	Anemia from hemorrhage	NONE	ACHIEVED
8	3A	2	Multiple branches of Anterior branch of bilateral IIA	3500	Y	Anemia from hemorrhage	NONE	NOT ACHIEVED
9	3	3	Anterior branch of the bilateral IIA; Small residual collateral arterial supply to the uterus	2000	Y	Anemia from hemorrhage	NONE	ACHIEVED
10	3	4	Anterior division of bilateral IIA, Bilateral UA	500	N	NONE	NONE	ACHIEVED
11	3	3	Anterior branch of both IIA and small collateral supply from posterior branch of left IIA	2000	Y	Anemia from Hemorrhage	Bladder tear	NOT ACHIEVED

Figure 3. Summary of 11 cases with IOUS and MVSE