

EP15.06. Preoperative multivessel selective embolization (MVSE) in the management of advanced placenta accreta spectrum disorders

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Objective

The study aims to determine the efficacy and safety of MVSE using gel foam slurry embolization in advanced placenta accreta spectrum (PAS).

Methods

This study reviewed the efficacy and safety of gel foam slurry embolization before manual placental extraction in 11 cases of PAS disorders managed by a multi-specialty team in a tertiary government hospital in the Philippines from June 2022 - December 2024. Selective catheterization and angiography of both internal iliac arteries and superselective catheterization and angiography of both uterine arteries were done followed by gel foam slurry embolization until satisfactory cessation of flow was documented using intraoperative ultrasound and angiography. Radiation to the fetus was avoided as fluoroscopy was commenced after fetal delivery. Safety measures include personal protective equipment and radiation shields for all present in the hybrid catheterization laboratory/operative suite. The effectivity of embolization of vascular supply to the placenta was assessed based on angiographic findings, color Doppler ultrasound findings, total blood loss, need for blood transfusion, average radiation dose, and embolization complications.

Results

All cases underwent selective catheterization of both internal iliac arteries, and superselective catheterization angiography of both uterine arteries using gel foam slurry. Post-embolization color Doppler ultrasound showed an 80-90% decrease in color flow signals. The extent of placental removal ranged from 80-100%. Blood loss ranged from 400ml-3500ml, transfusion ranged from 0-10 units of packed RBC, 1-6 units of fresh frozen plasma, and 2-4 units of platelet concentrate. Average radiation dose was 20.59mGy (9.83–35.37mGy), which is lower than the 90mGy maternal safety threshold. No embolization complications encountered.

Conclusion

MVSE using gel foam slurry embolization showed decreased blood loss, radiation safety, with no complications in the management of advanced placenta accreta spectrum disorders

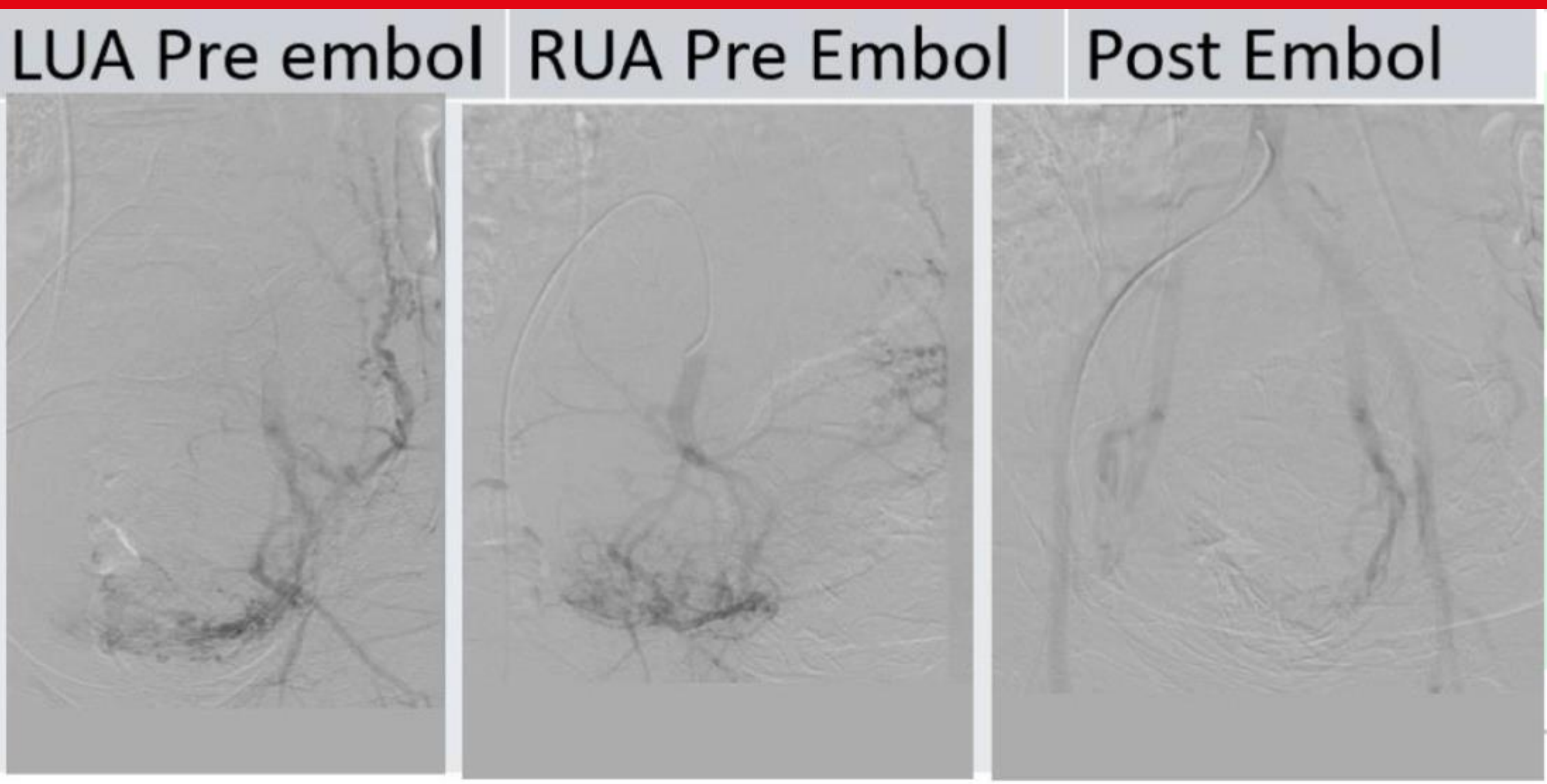


Figure 1. Pre and post embolization angiograms showing marked reduction of uterine arterial flow and placental hypervascularity following multivessel selective embolization

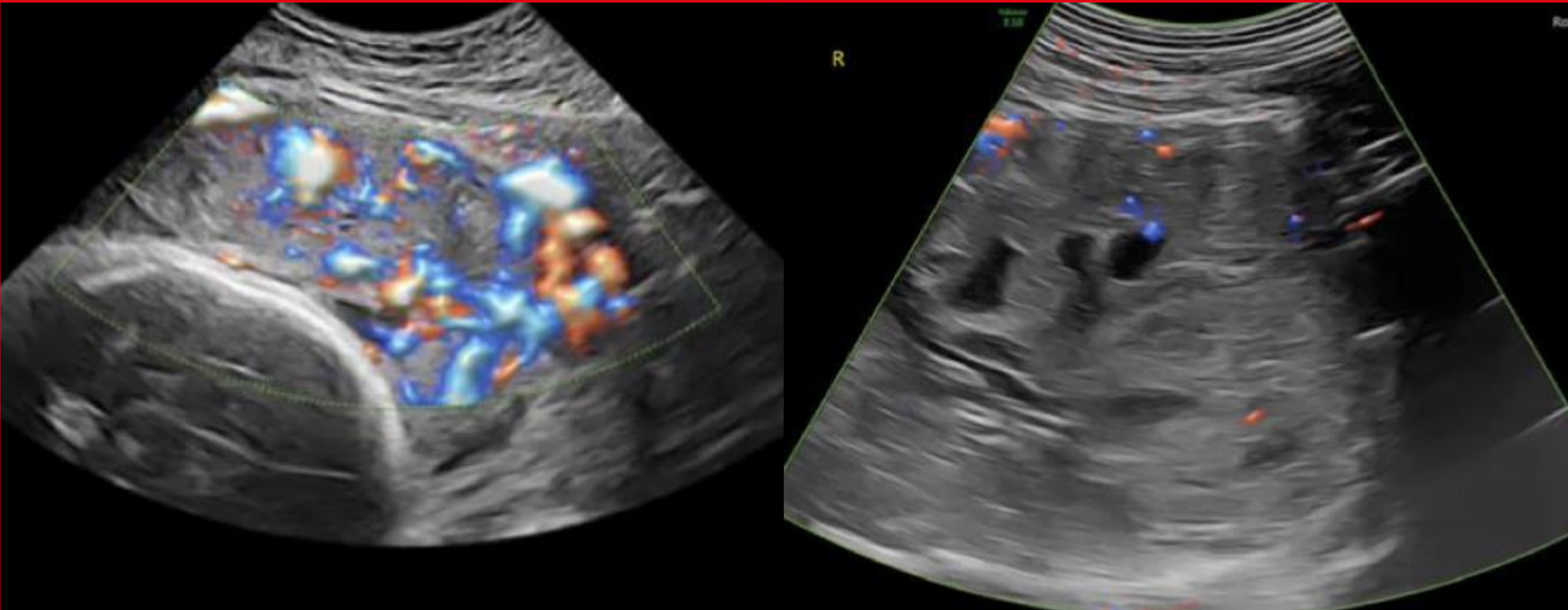


Figure 2. Intraoperative ultrasound with Doppler (right: pre embolization, left: post embolization)

Case No.	PAS Score	Decrease in color score	% placenta removed	Blood loss (ml)	Blood transfusion	Dose (mGy)	Embolization complication
1	2	80%	100%	2650	5 PRBC, 4 FFP, 4 PC	21.38	NONE
2	3	90%	0%-->100%	1200	3 PRBC post CS pre embolization, no BT post embolization	15.24	NONE
3	3	80%	100%	400	no BT	16.85	NONE
4	2	90%	100%	700	3 PRBC, 1 FFP	30.21	NONE
5	3	90%	90%-->100%	2000	6 PRBC, 2 FFP	15.69	NONE
6	2	90%	100%	420	2 PRBC	32.6	NONE
7	3	90%	100%	900	1 PRBC, 3PC	10.61	NONE
8	3A	80%	80%	3500	8 PRBC, 6PC	18.93	NONE
9	3	90%	100%	2000	10 PRBC, 4 FFP, 3 PC	19.53	NONE
10	3	90%	100%	500	no BT	9.83	NONE
11	3	90%	100%	2000	6 PRBC, 6 FFP; 2 PC	35.37	NONE

Figure 3. Summary of 11 PAS cases with preop MVSE