

Poster 40: Vascular stapler versus traditional ligation in mitigating hemorrhage risk during cesarean hysterectomy

Presenting Author: Leah Ginn, DO, Medical College of Georgia (Augusta University)

Topic

Other: Surgical Techniques

Objectives

Placenta accreta spectrum (PAS) carries a high risk of hemorrhage, and the standard of care is cesarean hysterectomy. Optimal surgical strategies to reduce blood loss remain unclear. Compared to traditional ligation methods, vascular staplers enable rapid tissue devascularization. Stapler use has been described for reducing blood loss at the hysterotomy, however, data on its use for uterine vessel ligation are limited. We aimed to evaluate perioperative outcomes associated with vascular stapler use during cesarean hysterectomy compared to traditional ligation methods.

Methods

We performed a retrospective cohort study of cesarean hysterectomies at a tertiary center (2020–present). Cases were stratified by stapler use and application to vascular pedicles. The primary outcome was estimated blood loss (EBL). Secondary outcomes included ICU admission, intraoperative injury, postoperative complications, transfusion rates, operative time, and postoperative length of stay (LOS). Multivariable regression was used to adjust for age, BMI, and PAS severity.

Results

Staplers were used in 16 of 36 cases (44%). Rates of intraoperative injury (13% vs 35%) and postoperative complications (13% vs 35%) were lower with stapler use though not statistically significant. ICU admission rates (56% vs 50%, $p=0.73$), transfusion rates (94% vs 95%, $p=1.00$), mean operative time (212 vs 195 minutes, $p=0.50$), and LOS (3 vs 4 days, $p=0.29$) were comparable between groups. Within the stapler cohort, use on the vascular pedicles in addition to the hysterotomy was associated with a significant reduction in blood loss, with median EBL of 1200 mL (IQR 1200–1200) compared to 2500 mL (IQR 2375–5625) when used on the hysterotomy alone ($p=0.04$). This remained significant after adjusting for maternal age, BMI, and PAS severity (-2100 mL, 95% CI -3900 to -300 ; $p=0.03$).

Conclusions

In this preliminary cohort, use of a vascular stapler is a safe alternative to traditional ligation methods, with no observed increase in perioperative risk. Application to the uterine pedicles was associated with a significant and clinically meaningful reduction in blood loss. Although secondary outcomes were not statistically significant, the magnitude of observed effects suggests potential benefit of this technique.

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