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ORAL ABSTRACT

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Western Association of Gynecologic Oncology

The effectiveness of low-pressure pneumoperitoneum on post-operative pain in gynecologic oncology surgery

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Objectives
Low pressure (LP) pneumoperitoneum during laparoscopy has been demonstrated to lower post-operative pain scores and reduce length of stay in several surgical procedures. Data in gynecologic surgery is limited. This study aimed to compare post-operative pain using high pressure (HP) versus LP robot-assisted laparoscopy in benign and oncologic gynecology patients.

Methods
We performed a single institution cohort study for laparoscopic surgery in 265 HP (>12mmHg; retrospectively collected) and 119 LP (<=12 mmHg; prospectively collected). The primary endpoint was post-operative pain score using a 10-point Likert scale. Recovery time, opioid use in recovery, and completion of planned procedure were also evaluated. Descriptive and comparative statistics were performed to assess differences between the HP and LP groups. Univariate and multivariate analyses assessed for factors associated with max PACU pain score >=5.

Results
Most patients were White (81%) with benign disease (56%) or uterine cancer (37%). Most LP surgeries (97%) were completed as planned (n=115). There were no demographic differences between groups. The HP group had significantly longer procedure time (127 vs 103 min, p=< 0.001) and robotic dock time (91 vs 76 min, p=< 0.001) compared to the LP group. The LP group had a higher max PACU pain score (median 6 vs 5, p=0.05), but no difference in total PACU oral morphine equivalent administration (7.5mg vs 7.5mg, p=0.13) or recovery time (59 vs 61 minutes, p=0.65) compared to the HP group. The LP group was less likely to be discharged home with opioids (p< 0.001) and more likely to be discharged same day (85% vs 71%, p=0.003). On multivariate analysis, the LP group had a lower risk of pain score ≥5 compared to the HP group (RR 0.84, p=0.02).

Conclusions
Most surgeries were completed as planned utilizing LP pneumoperitoneum. The LP group was less likely to be admitted and on multivariate analysis, the LP group had a lower risk of pain scores >5 compared to the HP group. Our findings demonstrate the feasibility and safety of this approach. A randomized controlled trial to further elucidate the potential benefits of LP pneumoperitoneum in gynecologic oncology surgery is underway.

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