

Implementation of a urogynecology-specific enhanced recovery after surgery (ERAS) pathway



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Objective

Enhanced recovery after surgery protocols were developed for colorectal surgery to hasten postoperative recovery. Variations of the protocol are being adopted for gynecological procedures despite limited population and procedure-specific outcome data. Our objective was to evaluate whether implementation of an enhanced recovery after surgery pathway would facilitate reduced length of admission in a urogynecology population.

Materials and Methods

In this retrospective analysis of patients undergoing pelvic floor reconstructive surgery by 7 female pelvic medicine and reconstructive surgeons, we compared same-day discharge, length of admission and postoperative complications before and after implementation of an enhanced recovery after surgery pathway at a tertiary care hospital. Groups were compared using χ^2 and Student *t* tests. Candidate variables that could have an impact on patient outcomes with $P < .2$ were included in multivariable logistic regression models. Satisfaction with surgical experience was assessed using a phone-administered questionnaire the day after discharge.

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TABLE

Length of stay, same-day discharge, and 30 day complication outcomes after ERAS implementation

Variables	Before ERAS	ERAS	<i>P</i> value
Length of admission, h	25.9 ± 13.5 ^a	12.1 ± 11.2 ^a	< .001 ^a
Same-day discharge	35 (25.9%) ^a	111 (91.7%) ^a	< .001 ^a
Total 30 day complications ^b	43 (31.4%)	43 (35.5%)	.480
Intraoperative complications ^c	3 (2.2%)	0 (0.0%)	.250
Hospital complications ^d	7 (5.1%)	5 (4.1%)	.775
Postdischarge complications ^e	12 (8.8%)	17 (14.3%)	.164
Unplanned postdischarge office visits	29 (21.2%)	22 (19.0%)	.761
Emergency department visits	11 (8.0%)	16 (13.5%)	.159
Readmission ^f	2 (1.5%) ^a	8 (6.7%) ^a	.030 ^a
Return to operating room	1 (0.7%)	4 (3.4%)	.187
Urinary tract infection	9 (6.6%)	13 (10.9%)	.265

Data are n (percentage) or mean ± SD.

^a Statistically significant; ^b Total 30 day complication is a composite variable of intraoperative, hospital, and postoperative complications; ^c Intraoperative complications included cystostomy and ureteral injury; ^d Hospital complications included hypoxia, chest pain/arrhythmia, hyponatremia, uncontrolled pain, oliguria, nausea/ileus, and wound complications; ^e Postdischarge complications included voiding dysfunction, wound complications, angina/cardiac arrhythmias, nausea/ileus, hematoma, vertigo, and ureteral obstruction; ^f Readmission indications included myocardial infarction, chest pain/arrhythmia, weakness, hyponatremia, wound complications, nausea/ileus, and ureteral obstruction.

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Results

Mean age and body mass index of 258 women (137 before enhanced recovery after surgery and 121 enhanced recovery after surgery) were 65.5 ± 11.3 years and 28.2 ± 5.0 kg/m². The most common diagnosis was pelvic organ prolapse (n = 242, 93.8%) including stage III pelvic organ prolapse (n = 61, 65.1%). Apical suspension procedures included 58 transvaginal (25.1%), 112 laparoscopic/robotic (48.8%), and 61 obliterative (26.4%). Hysterectomy was performed in 57.4% of women. Demographic and surgical procedures were similar in both groups. Compared with before enhanced recovery after surgery, the enhanced

recovery after surgery group had a higher proportion of same-day discharge (25.9% vs 91.7%, $P < .001$) and a 13.8 hour shorter duration of stay (25.9 ± 13.5 vs 12.1 ± 11.2 hours, $P < .001$). Operative and postsurgical recovery room times were similar (2.6 ± 0.8 vs 2.6 ± 0.9 hours, $P = .955$; 3.7 ± 2.1 vs 3.6 ± 2.2 hours, $P = .879$). Women in the enhanced recovery after surgery group were more likely to be discharged using a urethral catheter (57.9% enhanced recovery after surgery vs 25.4% before enhanced recovery after surgery, $P = .005$). There were no group differences in total 30 day postoperative complications overall and for the following

categories: urinary tract infections, emergency room visits, unanticipated office visits, and return to the operating room. However, enhanced recovery after surgery patients had higher 30 day hospital readmission rates ($n = 8$, 6.7% vs $n = 2$, 1.5%, $P = .048$). Patients before enhanced recovery after surgery were readmitted for myocardial infarction and chest pain. Enhanced recovery after surgery patients were admitted for weakness, chest pain, hyponatremia, wound complications, nausea/ileus, and ureteral obstruction. Three enhanced recovery after surgery patients returned to the operating room for ureteral obstruction ($n = 1$), incisional hernia ($n = 1$), and vaginal cuff bleeding ($n = 1$). Enhanced recovery after surgery patients also had more postoperative nursing phone notes (2.6 ± 1.7 vs 2.1 ± 1.4 ,

$P = .030$). On multivariable logistic regressions adjusting for age and operative time, same-day discharge was more likely in the enhanced recovery after surgery group (odds ratio, 32.73, 95% confidence interval [15.23–70.12]), while the odds of postoperative complications and emergency room visits were no different. After adjusting for age, operative time, and type of prolapse surgery, readmission was more likely in the enhanced recovery after surgery group (odds ratio, 32.5, 95% confidence interval [1.1–28.1]). In the enhanced recovery after surgery group, patient satisfaction ($n = 77$ of 121) was reported as very good or excellent by 86.7% for pain control, 89.6% for surgery preparedness, and 93.5% for overall surgical experience; 89.6% did not recall any postoperative nausea during recovery.

Conclusion

Enhanced recovery after surgery implementation in a urogynecology population resulted in a greater proportion of same-day discharge and high patient satisfaction but with slightly increased hospital readmissions within 30 days. ■

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