INCIDENCE OF POST-OP URINARY TRACT INFECTIONS AFTER ROUTINE CYSTOSCOPY IN MINIMALLY INVASIVE ROBOTIC GYNECOLOGIC SURGERY

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BACKGROUND AND AIMS

Routine cystoscopy is utilized following minimally invasive hysterectomy for early detection of intraoperative urinary tract injury. The aim of this study is to investigate the incidence of postoperative urinary tract infections (UTIs) after routine cystoscopy in robotic-assisted gynecologic cancer surgery and to compare the rate to reported incidence of similar surgeries without the use of routine cystoscopy.

METHODS

Retrospective study utilizing a single gynecologic oncologist’s database (July 2017 to July 2019) in which routine cystoscopy was performed to detect urinary tract injury following robotic total hysterectomies (RTH) for benign and malignant indications (N=348). Continuous and categorical variables were analyzed using two-sided t-test and Chi-square test respectively. Multivariate analyses of factors associated with post-op UTI following routine cystoscopy was performed using logistics and linear regression models.

RESULTS

Demographic and clinical characteristics were not significantly different between groups (Table 1). Routine cystoscopy did not find urinary tract injuries in any of the patients. 43 (12.4%) patients had postoperative UTIs within 30 days of routine cystoscopy. Postoperative complications were significantly associated with postoperative UTI in both benign and malignant cohorts (Table 2). Infection was the most common complication in patients with postoperative UTI (Figure 1). Dysuria was most commonly reported urinary symptom at postoperative visit Figure 2). Macrobid was most commonly prescribed antibiotic for postoperative UTI.

Table 1

Demographic and clinical characteristics by presence of postoperative UTI

	(+) Post-op UTI (N =43)	(-) Post-op UTI (N=305)	<i>p</i> value
Age, y	52 (30 – 79)	55 (27 – 91)	0.200
≤ 60, > 60	13 (30.0), 30 (70.0)	109 (40.0), 196 (60.0)	0.479
BMI, kg/m ²	32.92 (18.44 - 59.16)	31.88 (17.79 - 63.59)	0.432
≤ 30, > 30	20 (46.5), 23 (53.5)	151 (49.5), 154 (50.5)	0.713
Comorbidities			
≤ 1, > 1	22 (51.2), 21 (48.8)	137 (44.9), 168 (55.1)	0.442

Figure 1: Complications among cancer cohort

Table 2

Multivariate analysis of factors associated with post-op UTI following routine cystoscopy

	Benign (N=241)			Malignant (N=107)		
	Coefficient	95% CI	<i>p</i> value	Coefficient	95% CI	<i>p</i> value
Age	0.049	-0.078, 0.174	0.452	0.056	-0.135, 0.244	0.564
BMI	0.081	-0.046, 0.205	0.209	-0.131	-0.313, 0.061	0.180
Comorbidities	-0.001	-0.128, 0.125	0.982	-0.149	-0.329, 0.042	0.126
Surgery start time	0.154	0.029, 0.275	0.016*	0.033	-0.158, 0.221	0.737
Surgery length	0.078	-0.049, 0.202	0.227	0.059	-0.133, 0.246	0.548
EBL	0.043	-0.083, 0.169	0.503	0.183	-0.007, 0.360	0.059
Surgery complexity	0.128	0.002, 0.250	0.047*	0.132	-0.060, 0.314	0.176
Complications	0.371	0.257, 0.475	<0.001*	0.693	0.579, 0.780	<0.001*

Figure 2: Reported urinary symptoms

DISCUSSION

Postoperative UTIs are common in women undergoing gynecologic surgery. Literature reports UTI incidence in benign and malignant cases after routine cystoscopy following minimally invasive hysterectomy as 2.5 - 6.9% and 2.3 - 30.8% respectively. While our malignant cohort (15.9%) falls into the historically reported range, the benign cohort (10.8%) is relatively high. With a high-volume surgeon (>50 hysterectomies annually), benign indications for surgery, and low suspicion of urinary tract injury, we recommend that routine cystoscopy not be used.

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