



# Routine cystoscopy after robotic gynecologic oncology surgery: Increasing urinary injury detection or simply achieving medical-legal benefit?

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## BACKGROUND

The risk of urinary tract injury during gynecologic surgery is highly variable. The most important indications for cystourethroscopy at the time of gynecological surgery are to exclude cystotomy or intraureteral suture placement by verifying bilateral ureteral patency.

## OBJECTIVE

To determine whether the routine use of cystoscopy at the end of gynecologic robotic surgery increases the detection rate of urinary (bladder or ureteral) injury as compared to non-routine use of cystoscopy (indicated cystoscopy). All surgeries were performed by two gynecologic oncologists with similar robotic expertise.

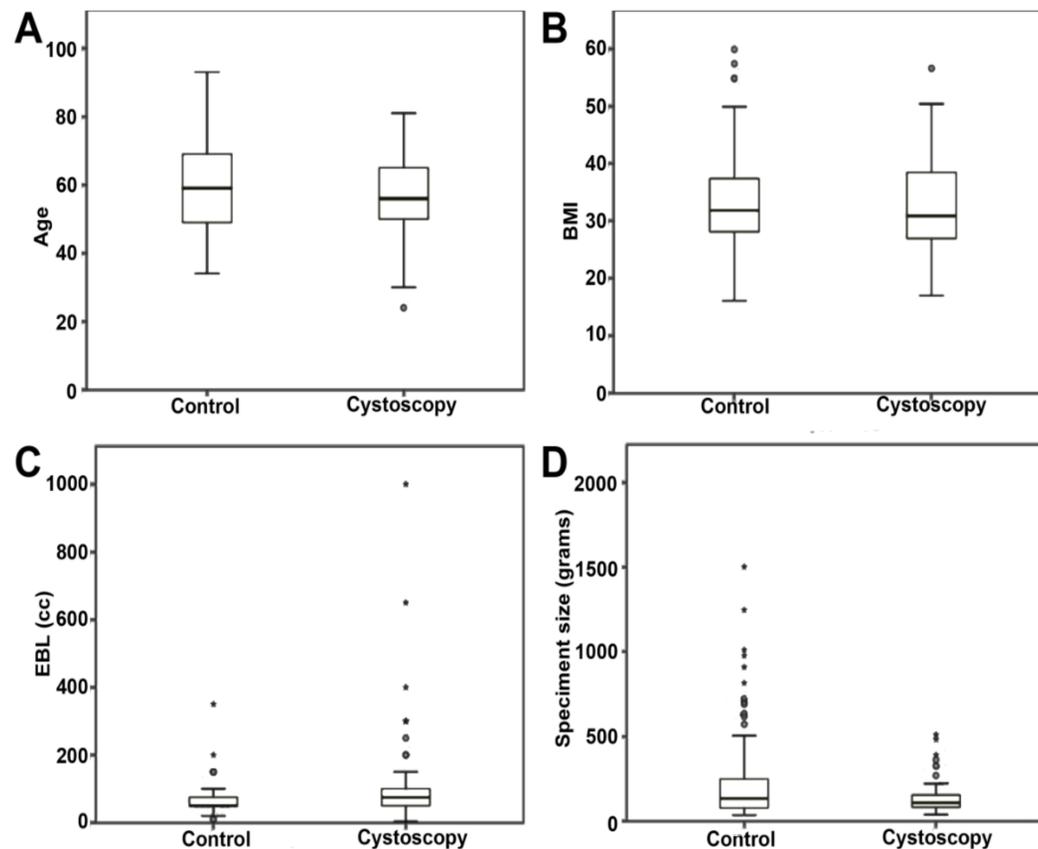
**Table 1: Baseline characteristics of patients undergoing robotic gynecologic surgery**

	Non-routine (control)	Routine Cystoscopy	P value
N	140	109	
Age	59.4±12.3	57.0±11.9	0.125
Body Mass Index	33±8.1	33±8.3	0.819
Hysterectomy with lymphadenectomy	47	57	0.0007
Hysterectomy for ovarian cancer	2	11	0.0192
Estimated Blood Loss (mL)	68.3±44.1	101.6±124	0.013
Specimen size (grams)	218.6±239.5	132.6±86.2	0.001
Operating time min (range)	360 (120-730)	180 (51-340)	0.0001
Ureteral or bladder injury	0	0	NS

## STUDY DESIGN

A retrospective chart review of all patients who presented for robotic surgery from 2009-2012 was performed at two separate teaching institutions under the division of gynecologic oncology (one institution performed routine cystoscopy and the other did not). Patient demographics such as age, BMI, primary surgical indication, surgical procedures, hysterectomy specimen size, blood loss, operative time and urinary complications were analyzed. Conversions from robotic surgery to laparotomy, cystoscopy performed in the non-cystoscopy group and the absence of cystoscopy in the routine cystoscopy group were excluded. Statistical analysis was performed using T-tests and Chi-squared tests. The primary outcome was urinary injury detection rate by cystoscopy.

## RESULTS



**Table 2: Comparison of Primary indications for robotic surgery and type of robotic surgery**

	Non-routine N = 140	Routine cystoscopy N = 109	P value
<b>Primary Indication</b>			
Endometrial carcinoma	54	53	NS
Ovarian carcinoma/borderline	2	11	.05
Fibroids	23	10	NS
Pelvic/adnexal mass	28	17	NS
Prolapse/Incontinence	2	4	NS
Endometriosis	2	1	NS
Preinvasive disease	19	7	NS
Cervical cancer	8	2	NS
<b>Primary procedure</b>			
Robotic TLH	85	40	.05
Robotic TLH with nodes	47	57	.05
Radical or modified radical	5	2	NS
Oophorectomy or cystectomy	2	5	NS
Other	1	5	.05

## CONCLUSIONS

There were no urinary injuries diagnosed in either group. The routine use of cystoscopy after robotic surgery did not appear to increase the detection rate of intraoperative urinary injury. Under the care of a gynecologic oncologist, routine cystoscopy may only provide medical-legal benefit should an injury be detected post-operatively.