

Introduction

- Previous surgery and/or radiation can lead to significant intra-abdominal adhesions and render minimally invasive surgery more challenging.
- We reported the perioperative and oncologic outcomes of patients who underwent robot-assisted radical cystectomy (RARC) and have a history of previous pelvic surgery and/or radiation.

Methods

- Retrospective review of our prospectively maintained database between 2005 and 2018.
- 589 RARCs were identified.
- Patients were divided into three groups based on surgical complexity:
- **Grade 1 Complexity:** No previous pelvic surgery (including those who had prior upper abdominal surgery only e.g. cholecystectomy).
- **Grade 2 Complexity:** Single pelvic surgery or prior XRT e.g. hysterectomy, prostatectomy.
- **Grade 3 Complexity:** ≥ 2 pelvic surgeries and/or XRT.

Methods

- Perioperative and pathologic outcomes were compared.
- Multivariate linear and logistic regression models were used to depict variables associated with operative time, blood loss, 90-day complications, high-grade complications, and readmissions.

Results

	CG 1	CG 2	CG 3	p-value
Number (%)	323 (55)	186 (32)	80 (13)	--
Age mean \pm SD, years	67 \pm 11	70 \pm 10	72 \pm 9	<0.01
Males, n, (%)	270 (84)	127 (68)	41 (51)	<0.01
BMI (%), Kg/m ²	29 \pm 7	29 \pm 6	28 \pm 6	0.52
ASA ≥ 3 , n (%)	149 (49)	104 (59)	54 (72)	<0.01
Prior neoadjuvant chemotherapy, n (%)	107 (33)	37 (20)	21 (26)	<0.01
cT ≥ 3 , n (%)	26 (9)	15 (9)	9 (13)	0.51
Operative Outcomes				
Neobladder, n (%)	42 (13)	12 (6)	2 (3)	< 0.01
Operative time, median (IQR), min	353 (288,421)	361 (301, 443)	365 (295,428)	0.24
Significant (≥ 500 ml) Blood loss, n, (%)	79 (25)	56 (30)	11 (14)	0.02
Transfusion, n (%)	14 (4)	10 (5)	5 (6)	0.74

Postoperative Outcomes

	CG 1	CG 2	CG 3	p-value
90-d reoperations, n (%)	19 (6)	11 (6)	4 (5)	0.98
90-d Complications, n (%)	191 (59)	127 (68)	59 (74)	0.02
90-d High grade Complications, n (%)	41 (13)	34 (18)	19 (24)	0.03
90-d Readmissions, n (%)	57 (18)	40 (22)	18 (23)	0.44
90-d Mortality, n (%)	10 (3)	11 (6)	3 (4)	0.30
Adjuvant Treatment, n (%)	65 (20)	27 (15)	12 (15)	0.22
Hospital stay, median (IQR), days	7 (6,10)	8 (6,10)	7 (6,10)	0.93
ICU stay, median (IQR), days	1 (0, 2)	1 (0, 2)	1 (0, 2)	0.80
Pathologic T stage, $\geq pT3$, n (%)	127 (40)	78 (43)	31 (40)	0.81
Lymph node yield, mean \pm SD	24 \pm 11	24 \pm 10	21 \pm 11	0.03
N positive, n (%)	75 (23)	53 (28)	12 (15)	0.06
Positive surgical margins, n (%)	23 (7)	17 (9)	9 (11)	0.43
Any recurrence, n (%)	107 (33)	49 (26)	24 (30)	0.28

Multivariate Linear Regression Model

Operative Time		
Variable	Estimate	P-value
Intercept	326	<0.01
Male Gender	-24	0.01
BMI	3	<0.01
ICUD	-35	<0.01
Neobladder	66	<0.01

Multivariate Logistic Regression Model

	Odds Ratio	Lower CI	Upper CI	P-Value
≥ 500 ml Blood loss				
BMI	1.09	1.05	1.13	<0.01
NAC	0.43	0.24	0.74	<0.01
cN +ve	2.22	1.15	4.26	0.02
ICUD	0.33	0.21	0.52	<0.01
Operative time	1.003	1.002	1.005	<0.01
90 days Complications				
CG 2 vs CG1	1.47	0.98	2.20	0.06
CG 3 vs CG 1	2.18	1.21	3.94	<0.01
Operative time	1.13	1.02	1.26	0.03
Hospital stay	1.13	1.08	1.19	<0.01
90 days High grade complications				
Hospital Stay	1.09	1.06	1.12	<0.01
90 days Readmissions				
Higher CCI	1.18	1.06	1.31	<0.01
NAC	2.10	1.33	3.29	<0.01
ICUD	4.17	1.98	8.74	<0.01
Operative time	1.15	1.01	1.30	0.03

Conclusion

- Surgical Complexity of the operative field significantly affected perioperative outcomes after RARC.
- Higher Surgical Complexity was significantly associated with overall 90-d complications, but not blood loss, 90-d high grade complications and 90-d readmissions after RARC.