PREDICTORS OF PARASTOMAL AND VENTRAL HERNIAS FOLLOWING RADICAL CYSTECTOMY

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INTRODUCTION

- Radical cystectomy with urinary diversion is associated with several postoperative complications, including hernia development.
- Limited data exists on predictors of parastomal or ventral hernia following radical cystectomy.
- We evaluated our cystectomy database for predictors of ventral and parastomal hernias following radical cystectomy.

METHODS

- Retrospective analysis of surgical database of 411 patients that underwent radical cystectomy from 2011 to 2022.
- Data collected included baseline characteristics, operative specific details, and postoperative outcomes.
- Univariate analysis with separate logistic regression models for each variable were fitted in addition to multivariate analysis with a logistic regression model.
- Additional statistical tests (Chi-square, Mann-Whitney U) were performed as appropriate.

RESULTS

Demographic data	**Median (IQR)**
Age at time of cystectomy	70 years (64, 77)
BMI	27 kg/m^2 (24, 30)
OR Time	303 minutes (253, 371)
Estimated Blood Loss	600 mL (400, 800)
Length of admission	8 days (6, 10)
Charlson Comorbidity Index	4 (3, 5)
ASA Score	3 (3, 3)
Time from surgery to last follow-up	0.8 years (.3, 1.8)
Time from surgery to hernia documented	0.9 years (.4, 1.6)
	Percent of sample (N=412)
% Male, % Female	78.9%, 21.1%
% Cigarette Smokers	60.0% Current 16.5% Former
% Radiated	20.1%
% Neoadjuvant Chemotherapy	51.0%
Predominating NAC Regimen	31.6% Gemcitabine/Cisplatin
Surgical Approach	93.0% Open 1.2% Laparoscopic 5.1% Robotic Assisted Laparoscopic 0.5% Robotic Converted to Open
Urinary Diversion	85.7% Ileal conduit 7.3% Ileal neobladder 2.9% Indiana pouch 4.1% Other

Table 1: Clinical characteristics of the sample studied. Median values with interquartile ranges (IQR) where appropriate.

RESULTS (contd.)

Figure 1: Hernias identified in this cohort of patients. At the time of data collection N=20 patients had undergone post-cystectomy hernia repair

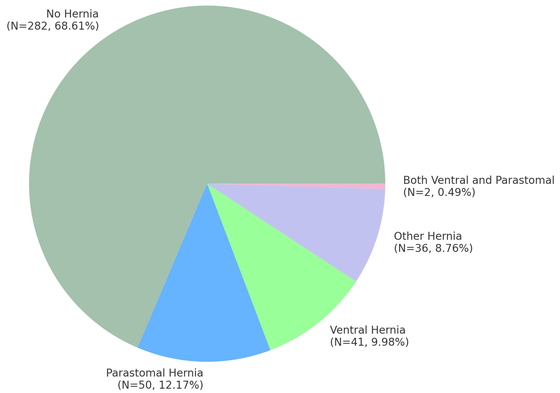

Table 2: Univariate and multivariate analysis with logistical regression modeling for hernia development following radical cystectomy.

	Univariate		Multivariate	
	OR	P-value	OR	p-value
Charlson Comorbidity Index	3.33	0.083	5.89	0.073
Smoking	0.96	0.881	0.96	0.919
Body Mass Index	1.06	**0.002**	1.05	0.084
Prior Pelvic Radiation	0.71	0.245	0.71	0.426
Neoadjuvant Chemotherapy	1.07	0.752	0.93	0.828
Operative Time	1.00	**0.003**	1.01	**0.001**
Surgical Approach	0.76	0.813	0.13	0.163
Estimated Blood Loss	1.00	0.078	1.00	0.953
Transfusion	0.87	0.547	1.25	0.532
Length of Stay	0.97	0.207	0.98	0.651
Time from Surgery to Follow-Up	1.32	**<0.001**	1.26	0.068
Pre-operative Hydronephrosis	0.68	0.125	1.03	0.945
Pre-operative Creatinine	0.77	0.180	0.76	0.295
Pre-operative Hemoglobin	1.07	0.200	1.00	0.983
Diabetes	1.33	0.316	0.91	0.825
COPD	1.06	0.852	1.21	0.688
Surgery Site Infection	1.83	0.056	2.56	0.061
ASA	1.63	0.184	1.99	0.174
Wound Dehiscence	1.45	0.218	0.83	0.705
Prior Abdominal Surgery	1.00	0.984	0.54	0.065

RESULTS (contd.)

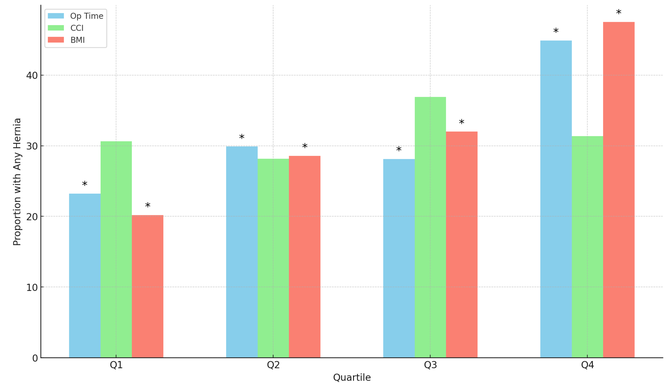

Figure 2: Proportion of hernia development stratified based on BMI, Charlson Comorbidity Index (CCI) and operative time. BMI quartile groups were ≤24, 24 to 26.77, 26.77 to 30.41, ≥30.41 kg/m^2. CCI quartile cutoffs were ≤3, 3 to 4, 4 to 5, and ≥5. Operative time quartile cutoffs were ≤253, 253 to 303, 303 to 369.88, ≥369.88 minutes. * indicates p<.05.

DISCUSSION AND CONCLUSIONS

- ~1/3 of patients developed a hernia following radical cystectomy at our center.
- Patients that develop hernias are almost equally prone to parastomal, ventral or other types of hernias
- Patients at the upper quartiles of BMI and operative time had statistically significantly higher rates of hernia development
- Most hernias were observed, with only 16% undergoing repair
- Smoking status, Charlson Comorbidity Index, prior abdominal surgery, pelvic radiation, diabetes and other commonly noted pre-operative factors were not associated with hernia development in our population