

Characteristics of Certifying Urologists Performing Cystectomies in the United States

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Abstract

Introduction: The surgical volume and training of the surgeon performing radical cystectomy can have a significant impact on bladder cancer outcomes. We hypothesize significant variability in the training and volume of surgeons performing radical cystectomy in the United States.

Methods: The 6-month case log data of urologists certifying between 2003 and 2013 were obtained from the American Board of Urology. Cases specifying an ICD-9 code for bladder cancer and a CPT code for radical cystectomy were analyzed for surgeon specific variables.

Results: A total of 5,335 radical cystectomies in the case log system were performed by 2,102 urologists, with 289 (5.4%) performed laparoscopically or robotically. Median urologist age was 42 years (range 36 to 50). Median number of cystectomies performed was 2 (IQR 1–3) with the top 10% of urologists performing 5 or more cystectomies. Half of cystectomies were performed by a urologist who performed only 1 during the certification period. On multivariable analysis stated specialty of oncology and nonprivate practice type were associated with top 10% cystectomy volume. For minimally invasive cystectomy 54% of surgeons logged only a single minimally invasive cystectomy. Factors predictive of performing minimally invasive cystectomy on multivariable analysis were male gender, more recent certifying year and original certification year, endourology and urolithiasis specialization, and Northeast practice region.

Conclusions: Despite the high level of complexity associated with the surgical management of bladder cancer with radical cystectomy, the majority of cystectomies seem to be performed by low volume surgeons who have most often applied for their first certification with the American Board of Urology.

Key Words: urinary bladder neoplasms, cystectomy, robotic surgical procedures

Abbreviations and Acronyms

ABU = American Board of Urology

BCa = bladder cancer

MIS RC = minimally invasive radical cystectomy

RC = radical cystectomy

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Radical cystectomy with pelvic lymph node dissection is the standard of care for patients with muscle invasive bladder cancer with a 10-year recurrence-free survival rate of greater than 60%.¹ Bladder cancer outcomes after cystectomy are not only affected by tumor stage and degree of lymph node involvement, but also by surgical factors including margin status and extent of pelvic lymph node dissection.^{2–4} To increase survival for patients with BCa, an option is to develop surgical standards for RC with referral of patients with BCa to experienced surgeons at high volume centers.^{5,6} Validating this assertion, multiple studies have shown higher surgeon volume to be correlated with decreased hospital readmissions, and improved 30-day mortality and overall survival after cystectomy.^{7–10}

Before establishing criteria for surgical volume, the landscape of surgeon volume and training for surgeons performing RC must be established. Currently the demographic data of urologists performing RC in the United States are limited. While RC may often be performed at larger institutions, we hypothesize significant heterogeneity in the training and surgical volume of urologists performing arguably one of the most complex urological procedures. Therefore, we characterize the surgeons performing RC and describe factors associated with higher RC volume using ABU certification data.

Methods

Case log data of urologists certifying between 2003 and 2013 were obtained from the ABU. Urologists initially certifying and recertifying every 10 years with the ABU are required to submit case logs with CPT and ICD-9 codes listed for all procedures completed in a consecutive 6-month period.

We identified records from the electronic case log data for all cases specifying an ICD-9 code for BCa (188.0-188.9) and a CPT code for RC (51570, 51575, 51580, 51585, 51590, 51595, 51596, 51999). Log data were analyzed for self-reported surgeon specific factors including age, certification type, date of initial certification, specialty, practice type, practice region and practice area population. Urologists who identified their specialty as pediatric urology or were applying for pediatric certification were excluded from study. Univariate and multivariate logistic regression models were used to identify factors associated with higher cystectomy volume and use of minimally invasive (laparoscopic or robotic) cystectomy. Of note, data on specialization were missing for 30% of MIS RC cases. All data analysis was performed using SAS® v9.4.

Results

A total of 5,335 RCs in the case log system were performed by 2,102 urologists with 289 (5.4%) performed laparoscopically or robotically. During the 10-year period analyzed 2,102 of 7,278 (29%) urologists who submitted case logs recorded a cystectomy. Characteristics of certifying urologists who logged a cystectomy are detailed in table 1. Median urologist age was 42 years (range 36 to 50). The median number of cystectomies performed was 2 (IQR 1–3) with the top 10% of urologists performing 5 or more cystectomies (see figure).

Half of cystectomies (50%) were performed by a urologist who logged only a single case during the certification period. Urologists who initially certified after the year 2000 performed the majority (57%) of cystectomies and urologists certifying for the first time logged 40% of cystectomies. Only 24% of cystectomies were logged by urologists who identified themselves as oncologists with 45% of cystectomies logged by general urologists. Urologists in private practice logged 45% of cystectomies vs 38% for nonprivate practice, and 17% for mixed private and nonprivate practice. Urologists practicing in areas with a population of more than

Table 1.
Characteristics of 2,102 certifying urologists

Median age (IQR)	42 (36–50)
No. male (%)	1,963 (93.4)
Median cystectomies (IQR)	2 (1–3)
No. certification type (%):	
Female pelvic medicine + reconstructive surgery	29 (1.4)
Initial	838 (39.9)
First recertification	679 (32.3)
Second recertification	531 (25.3)
Third recertification	25 (1.2)
No. specialty (%):	
Andrology	11 (0.5)
Endourology	91 (4.3)
Female urology	123 (5.9)
General urology	1,238 (58.9)
Oncology	251 (11.9)
Urolithiasis	24 (1.14)
Unknown	364 (17.3)
No. practice type (%):	
Private	1,265 (60.2)
Nonprivate	462 (22.0)
Private + nonprivate	375 (17.8)
No. practice area population (%):	
Less than 100,000	175 (8.3)
100,000–250,000	253 (12.0)
250,001–500,000	248 (11.8)
500,001–1,000,000	282 (13.4)
Greater than 1,000,000	646 (30.7)
Unknown	498 (23.7)
No. region (%):	
Midwest	496 (23.6)
Northeast	395 (18.8)
South	712 (33.9)
West	477 (22.7)
U.S. territory/Canada/unknown	22 (1.1)

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