

Radical cystectomy in elderly patients, single center, 25 years experience

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Abstract: Objectives: To investigate the relation between age and tumor characteristics and to evaluate oncologic results after radical cystectomy in elderly patients. Materials and Methods: We reviewed 501 patients retrospectively who underwent radical cystectomy because of bladder cancer. Patients were divided into two groups; greater than or equal to 70 (group 1) and less than 70-years-old (group 2). We compared tumor pathological characteristics and oncologic results in both groups. American Society of Anesthesiologists (ASA) score is less than three and there was no risk for major surgery for all patients. None of the patients did not receive neoadjuvant radiotherapy and/or chemotherapy. Results: There were 87 (17.4%) patients in group 1 and 414 (82.6%) patients in group 2. The mean age was 73.3 ± 3.01 (70-85) in group 1, and 58.3 ± 7.47 (34-69) in group 2. There were no significantly difference between gender ($p=0.135$), pathological T stage ($p=0.483$), lymph node involvement ($p=0.462$), grade ($p=0.522$), type of diversion ($p=0.193$), histological type ($p=0.656$) in both groups. Perioperative mortality were 3.9% in group 1 and 3.4% in group 2 ($p=0.218$). Perioperative complication rates were 16.6 % in group 1 and 17.4% in group 2 ($p=0.469$). Five years disease specific survival (DSS) rates were 61% in group 1 and 53% in group 2 ($p=0.936$). The mean DSS periods were 72.91 ± 5.35 months in group 1 and 76.25 ± 7.45 months in group 2. Five years overall survival rates were 43.9% in group 1, 45.9% in group 2 ($p=0.476$). Mean overall survival periods were 54.02 ± 8.47 in group 1 and 69.25 ± 4.97 in group 2. In cox regression analyse; tumor stage ($p=0.012$) and lymph node involvement ($p<0.001$) were significant factors affected the survival in both groups. Conclusions: We found similar oncological results in patients who underwent radical cystectomy because of bladder cancer between young and elderly patients. We believe that age is not a contraindication factor for radical cystectomy operation. In addition preoperative performance statue of patients is important in terms of perioperative complications and mortality.

Keywords: Bladder Cancer, Elderly, Radical Cystectomy

1. Introduction

Cancer is the major cause of death and morbidity in the elderly. The proportion of elderly people in the general population is increasing. The increase in lifespan is associated with an increase in the incidence of some tumors including bladder cancer (1,2). Among people in the eighth decade, bladder cancer is the fifth leading cause of cancer death (1). Radical cystectomy is the treatment of choice for patients with invasive bladder cancer. Co-morbidity and unique physiological changes present a surgical challenge in the elderly patient (1,2).

Bladder cancer is the ninth most common cancer diagnosis

worldwide, with more than 330,000 new cases each year and more than 130,000 deaths per year, with an estimated male-female ratio of 3.8:1.0. At any point in time, 2.7 million people have a history of urinary bladder cancer (3). At the initial diagnosis of bladder cancer, 70% of cases are diagnosed as non-muscle-invasive bladder cancer and approximately 30% as muscle-invasive bladder cancer (4).

Traditionally, radical cystectomy was recommended for patients with muscle invasive bladder cancer T2-T4a, N0-Nx, M0. Other indications include high-risk and recurrent superficial tumours, BCG-resistant Tis, T1G3, as well as

extensive papillary disease that cannot be controlled with TUR and intravesical therapy alone (5).

The American Society of Anaesthesiologists' (ASA) risk classification system is actually an index for perioperative risk, but it can also be used to evaluate comorbidity because it describes a patient's physical status prior to surgery (6). The current ASA classification was developed in 1941 by Meyer Saklad (7) Several other small series have also failed to demonstrate any association between ASA class and clinical outcome after cystectomy (8,9).

In this study we aimed to investigate the relation between age and tumor characteristics and to evaluate oncologic results after radical cystectomy in elderly patients with ASA score less than three.

2. Materials and Methods

We reviewed 501 patients retrospectively who underwent radical cystectomy because of bladder cancer. Patients were divided into two groups; greater than or equal to 70 (group 1) and less than 70-years-old (group 2). We compared tumor pathological characteristics and oncologic results in both groups. ASA score is less than three and there was no risk for major surgery for all patients. None of the patients did not receive neoadjuvant radiotherapy and/or chemotherapy.

3. Statistical Analysis

Quantitative data were expressed as means \pm standard deviations. Chi-Square Tests were used to compare non-parametric values. Kaplan-Meier survival curves were used to estimate disease-specific survival (DSS) and overall survival (OAS) according to age. Cox regression was performed to define independent factors associated with survival. p-value less than 0.05 was considered significant. All statistical analyses were performed by using the SPSS ver. 16.0 (SPSS Inc., Chicago, IL, USA).

4. Results

There were 87 (17.4%) patients in group 1 and 414 (82.6%) patients in group 2. The mean age was 73.3 ± 3.01 (70-85) in group 1, and 58.3 ± 7.47 (34-69) in group 2. There were no significantly difference between gender (0.135), pathological T stage ($p=0.483$), lymph nodes involvement ($p=0.462$), grade ($p=0.522$), type of diversion ($p=0.193$), histological type ($p=0.656$) in both groups.

Perioperative mortality were 3.9 % in group 1 and 3.4 % in group 2 ($p=0.218$). Perioperative complication rates were 16.6 % in group 1 and 17.4 % in group 2 ($p=0.469$). Patient demographics and clinico-pathological characteristics were demonstrated in Table1.

Five years DSS rates were 61 % in group 1 and 53% in group 2 ($p=0.936$) (Figure 1). The mean DSS periods were

72.91 ± 5.35 months in group 1 and 76.25 ± 7.45 months in group 2. Five years overall survival rates were 43.9 % in group 1, 45.9 % in group 2 ($p=0.476$) (Figure 2). Mean overall survival periods were 54.02 ± 8.47 in group 1 and 69.25 ± 4.97 in group 2.

In cox regression analyse; tumor stage ($p=0.012$) and lymph node involvement ($p<0.001$) were significant factors affected the survival in both groups.

Table 1. Demographics and clinico-pathological characteristics of patients.

	Group1 (Age \geq 70)	Group2 (Age<70)	p value*
Number of patients	87	414	
Mean age	73.3 ± 3.01 (70-85)	58.3 ± 7.47 (34-69)	
Gender			
Male	76	383	0.135
Female	11	31	
Type of diversion			
Ureterocutaneostomy	12	44	0.193
Bricker	44	195	
Hemicoch pouch	0	12	
Neobladder	29	130	
Mainz 2 pouch	2	33	0.462
Lymph node involvement	20/87	112/414	
Perioperative complication	16.6%	17.7%	0.469
Perioperative mortality	3.9%	3.4%	0.218
Pathologic stage			
pT1	17	60	0.483
pT2	32	141	
pT3	26	139	
pT4	12	74	
Grade			
1	5	21	0.522
2	35	179	
3	47	214	
Histological type			
Urethelial carcinoma	72	330	0.656
Non-urothelial carcinoma	15	84	

*Chi-Square Tests

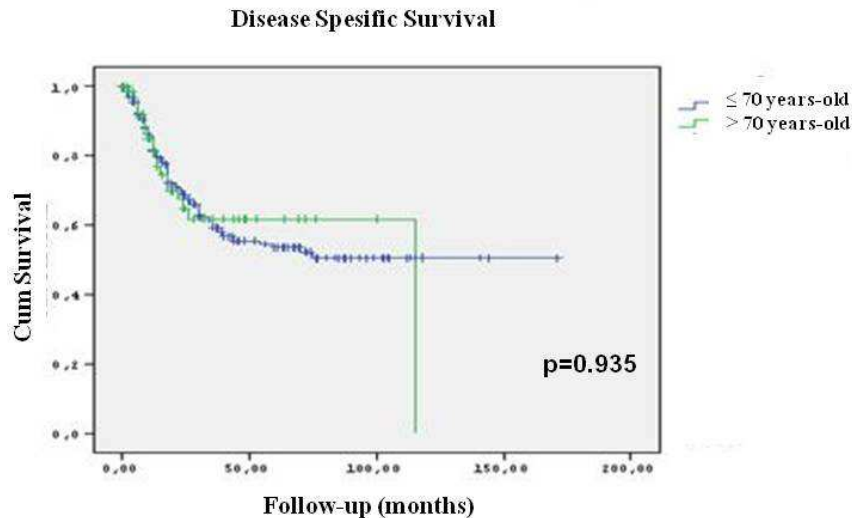


Figure 1. Disease specific survival for both groups.

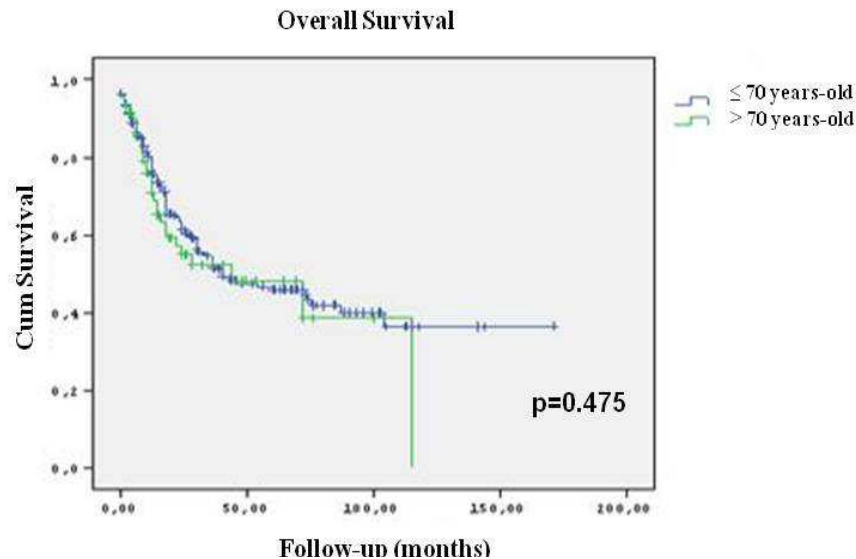


Figure 2. Disease specific survival for both groups.

5. Discussion

Bladder cancer is a common malignancy that disproportionately affects the elderly. The National Cancer Institute (NCI) Surveillance, Epidemiology, and End Results (SEER) Program estimated that most bladder carcinoma patients are 65 years or older at the time of diagnosis, and that the median age at diagnosis is 73 years (10). In the United States, bladder cancer is the fourth leading cause of cancer-related mortality in men aged 80 years or older (11).

Radical cystectomy is the standard treatment for localised muscle invasive bladder cancer in most western countries (12,13). Recent interest in patients' quality of life has increased the trend toward bladder preservation treatment modalities, such as radio- and/or chemotherapy. Performance status and age influence the choice of primary therapy, as well as the type of urinary diversion, with cystectomy being reserved for younger patients without concomitant disease and with a better performance status. The value of assessing

overall health before recommending and proceeding with surgery was emphasised in a multivariate analysis (14). The analysis found an association between comorbidity and adverse pathological and survival outcome following radical cystectomy (14). Performance status and comorbidity have a different impact on treatment outcome and must be evaluated independently (15).

Controversy remains about age, radical cystectomy and the type of urinary diversion. Cystectomy is associated with the greatest risk reduction in disease-related and non-disease-related death in patients aged > 80 years (14). The largest, retrospective, single-institution study on cystectomy to date found that patients aged > 80 years had increased postoperative morbidity but not increased mortality. Although some patients successfully underwent a neobladder procedure, most patients were treated with an ileal conduit diversion (16). It is particularly important to evaluate the function and quality of life elderly patients using a standardised geriatric assessment, as well as carrying out a

standard medical evaluation (17).

Age is often a major consideration when considering treatment options for muscle invasive bladder cancer. Data from multiple small surgical series have demonstrated that selected older patients were comparable to their younger counterparts in terms of early and late complications and perioperative outcomes (1,9,18). However, other reports suggested that advanced age may be an independent predictor of adverse oncologic and overall survival outcomes (19,20). In the present study, there was no significantly different in terms of perioperative complications and mortality. This condition can be explained by lower ASA score. Furthermore oncologic features such as pathologic stage and grade in both groups.

According to Surveillance, Epidemiology and End Results data, disease-specific survival after radical cystectomy appears to be influenced only by disease-related factors (stage and extent of lymphadenectomy), and not by age (21). In our study tumor stage and lymph node involvement were significant factors affected negatively the survival in both groups.

Radical cystectomy is associated with major morbidity and mortality. The early postoperative complication rate ranges from 25 to 57% (22,23) and early mortality rate is about 3% (24), and is even higher in elderly patients (25). In a review of the literature by Peyromaure *et al.*², the early mortality rate after cystectomy in patients over 70 years old ranged from 0 – 4.5 %, and these results were similar to those in a younger population. The overall peri-operative complications ranged from 61–70% which were mostly anesthetic. The overall postoperative complications ranged from 28–64% which again were mostly medical (41-72%) like in other series.

Perioperative mortality was 3.9 % in group 1 and 3.4 % in group 2. Perioperative complication rates were 16.6 % in group 1 and 17.4% in group 2. In our series, most common perioperative complications were ileus and urinary tract infections

Several investigators like Nielson *et al.*, found that advanced age was associated with extravesical disease, upstaging from clinical to pathologic stage and cancer-specific mortality in patients treated with radical cystectomy (26) and elderly patients were less likely to be treated with extirpative surgery than their younger counterparts (27) In our study, we found similar pathologic stage and grade between younger and elderly patients.

The current study was limited by its retrospective design and small number of patients for elderly patients.

6. Conclusion

The number of elderly people in the total population is rising. We found similar oncological results in patients who underwent radical cystectomy because of bladder cancer between young and elderly patients. Our series demonstrates that cystectomy with urinary diversion can be safely performed in the elderly with acceptable morbidity and mortality.

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