Defining Patient Selection for Prostate-sparing Cystectomy in Squamous Cell Carcinoma of the Urinary Bladder Associated With Bilharziasis: An Overview of 236 Patients

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OBJECTIVE To determine possible risk factors associated with prostate invasion in patients with squamous cell carcinoma (SCC) of the urinary bladder associated with bilharziasis.

METHODS After obtaining approval from the medical ethics committee, we reviewed the clinical and pathologic data from 236 male patients in our department between January 2006 and October 2010 who were treated with radical cystoprostatectomy and proved to have SCC associated with bilharziasis. We reviewed the clinical and histopathologic data regarding prostate infiltration from SCC of the urinary bladder associated with bilharziasis.

RESULTS Two-hundred thirty-six patients were included in this study. Prostate infiltration was present in 14 patients (5.9%). Tumor located in the bladder neck ($P = .000001$), tumors >5 cm ($P = .009$), and advanced clinical tumor stage ($P = .000001$) were associated with highly statistically significant increased risk of prostate invasion from SCC of the urinary bladder. Different patients' ages, high tumor grade, and regional lymph nodes' metastasis were not associated with increased risk of prostate invasion from SCC of the urinary bladder.

CONCLUSION Prostate infiltration from SCC of the urinary bladder (which is associated with bilharziasis) is not uncommon. Tumor >5 cm, bladder neck tumor, and high clinical tumor stages should be considered at least relative contraindications for prostate-sparing cystectomy. UROLOGY 78: 1351–1355, 2011. © 2011 Elsevier Inc.

The standard radical cystectomy in males includes en bloc removal of the urinary bladder with its perivesical fat and peritoneal covering, prostate, seminal vesicles, and abdominal part of the vas deferens, all with the draining lymphatics. Thus, potency is mostly lost while complete urinary continence has not occurred in most patients, even when surgery is performed by skilled surgeons.[1] Quality of life and functional outcomes play an important role in decision making in younger men with bladder cancer.[2] Spitz et al performed a radical cystectomy with preservation of the seminal vesicles and part of the prostate for treating nonurothelial bladder malignancy.[3] Prostate-sparing cystectomy (PSC) was performed in a trial to improve the postoperative continence, potency, and sometimes even fertility, especially in young patients with bladder cancer.[4] Squamous cell carcinoma (SCC) associated with bilharziasis occurs most commonly in Middle East and Southeast Asia, where schistosomiasis is endemic.[5] In a large Egyptian series, SCC with bilharziasis represented about 59% of 1026 radical cystectomy specimens.[6] The aim of the study was to identify which patient with SCC with bilharziasis of the urinary bladder is suitable for PSC.

MATERIAL AND METHODS

After obtaining approval from the medical ethics committee, Faculty of Medicine, Assiut University, and ensuring patients' anonymity, we reviewed the clinical and histopathological data from 236 men patients who were treated with radical cystoprostatectomy and proved to have SCC associated with bilharziasis at our department between January 2006 and October 2010.

We reviewed the clinical, cystoscopic, operative, and histopathologic data regarding prostate infiltration from SCC of the urinary bladder. Patients with coincidental occult primary pros-

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Table 1. Preoperative patients' data

Preoperative Patients' Data	No.	%
Age (y)		
<40	24	10.2
40-60	144	61.0
>60	68	28.8
Tumor site		
Posterior wall	128	54.2
Lateral wall	60	25.4
Anterior wall	26	11.0
Dome	14	5.9
Bladder neck	8	3.4
Tumor size (cm)		
<3	58	24.6
3-5	98	41.5
>5	80	33.9
Stage of the tumor		
Stage 1	20	8.5
Stage 2	148	62.7
Stage 3	48	20.3
Stage 4	20	8.5
Grade of the tumor		
Low grade (1 and 2)	186	78.8
High grade (grade 3)	50	21.2
Lymph node		
Negative for malignancy	166	70.3
Positive for malignancy	70	29.7
Prostatic infiltration		
Presence of infiltration	14	5.9
Absence of infiltration	222	94.1
Total	236	100.0

tatic adenocarcinoma and patients treated by preoperative chemotherapy or radiotherapy were excluded from this study. Patients' data included: age, tumor site, size (as reported by cystoscopy), tumor stage and grade, and presence or absence of nodal metastasis. Clinical staging in patients with SCC was performed by preoperative computed tomography (CT) scan, cystoscopic assessment, and biopsy, followed by bimanual examination with patients under anesthesia.

All radical cystectomy specimens were examined by the same pathologic protocol, which involves examination of tissue sections from the tumor itself, bladder wall, seminal vesicles, prostate, and regional lymph node. The TNM classification was used for pathologic staging, and the WHO classification was used for histologic grading. Association of any of the clinical parameters and prostate infiltration from the primary SCC of the bladder was observed and analyzed.

Statistical Analysis

Data analysis was done using SPSS version 17 (SPSS, Inc., Chicago, IL). Comparison between groups depended on chi-square test for categorical data. P value $<.05$ was considered significant.

RESULTS

This study included 236 male patients. Their ages were 22-71 years (mean 47.6).

Preoperative patients' data are presented in Table 1. From this table, it is noted that tumors were located mainly in the posterior wall above the trigone (54.2%), whereas tumors in the bladder neck region occurred in only 3.4%. Most of the tumors were <5 cm in diameter (66.1%). Most of the pathologic stage was T2, which represents about (63%) of all patients. More than 75% of patients had low-grade tumors. Positive lymph node metastasis was identified in approximately 29% of patients. Prostate infiltration from SCC of the bladder occurred in 14 patients (5.9%) of patients.

The relation between different patients' data and prostatic infiltration are presented in Table 2. Analysis of these data revealed that tumor site (bladder neck tumor), tumor size (>5 cm), and advanced clinical tumor stage (T3 and T4) were associated with highly statistically significant increased risk of prostate infiltration. However, patient age, high tumor grade, and regional lymph node metastasis were not associated with increased risk of prostatic infiltration.

COMMENT

PSC remains one of the most surgical debates in urology, and each side has its own valid arguments.[7,8] One point of view emphasizes the improved functional outcome and quality of life after PSC. By contrast, there is increased oncological risk after PSC and the best long-term oncological outcomes were observed after the classic radical cystectomy with bilateral pelvic lymph node dissection.[2-9] Another point of view supposes that standard radical cystoprostatectomy causes dramatic negative impact on many aspects of quality of life; consequently, radical surgery is often extremely delayed—especially in young patients—with consequent positive pelvic lymph nodes and undoubted negative outcome in terms of disease-free survival in a consistent amount of patients.[1]

Some authors reported that erection was excellent after prostate and seminal vesicle–sparing cystectomy together with fertility.[3] Moreover, preservation of ejaculation—even if retrograde—has positive psycho-emotional impact, especially in patients who would not exclude the possibility of fatherhood.[1] Hence, PSC seems to be better than nerve-sparing cystectomy concerning the postoperative quality of life.

Prostate invasion from SCC of the urinary bladder is not uncommon, and in our study it represented about 5.9% of cases. Our data are consistent with the experience of Ghoneim et al.[6] In their study of 1026 radical cystectomy cases in Egypt, they detected the presence of prostate infiltration in 6.9% of SCC cases.

The mechanisms of prostate infiltration from tumors of the bladder were suggested by direct intramural superficial invasion from bladder neck tumor, or an extravesical bladder tumor extending through the wall of the bladder to directly invade the prostate.[4] Another possible mechanism was described by Donat et al,[10] in which tumors of the bladder neck may silently invade the stroma of the prostate.

There are few studies that attempted to correlate the preoperative risk factors and tumor characteristics in