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Incidence of Prostate Adenocarcinoma in Men who had Radical Cystoprostatectomy because of Bladder Cancer. A Retrospective Cross Sectional Study

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Abstract

Aim: To determine the incidence of prostate adenocarcinoma in men who had radical cystoprostatectomy because of bladder cancer**.**

Study design: Retrospective cross sectional study

Place and duration: This study was conducted in Bolan Medical College and Hospital Quetta Balochistan, Pakistan from June 2020 to June 2021

Methodology: A total of 248 patients with bladder transitional cell carcinoma had cystoprostatectomy after histological verification of their tumors. Histopathology was done on the prostate tissue samples, which were cut into 5 mm-thick sections.

Results: Ten individuals (4.03 percent) were discovered to have prostate cancer out of a total of 248 patients. Eight of the ten instances of undetected prostate cancer were found to be in stage T1 or T2, with the other two cases being in stages T3 and T4, respectively.

Conclusion: The incidentally discovered prostate cancer among our bladder cancer patients looked to be lower than the rate of incidentally discovered prostate cancer among bladder cancer patients seen in previous studies. Patients with bladder cancer, particularly those over the age of 60 years, should be screened using a digital rectal examination and PSA testing.

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Keywords: prostate cancer, bladder, cystoprostatectomy, transitional cell carcinoma

Introduction

The most frequent cancer among males in industrialized nations is prostate cancer. (1) Although it occurs much less often in the United States, this malignancy is the primary cause of cancer-related mortality. (2) The diagnosis of prostate cancer in those who have had a cystoprostatectomy is frequently an unintended consequence. The incidence of prostate cancer outnumbers the occurrence of clinically detectable prostate cancer by a ratio of two or three in males in developed nations. According to postmortem data, prostate cancer cases in 50-year-old American males were found by chance. Whereas the same percentage in 80-year-old men was discovered by chance. (3) Autopsy examinations carried out in China showed that the frequency of prostate cancer in men between the ages of 51–69 years was 9.3 percent, as well as the occurrence in men above 70 years of age was 25 percent; all of these figures were much lower than the incidence in the United States.(4) At this time, there are no known explanations for the very high discrepancies between these two groups. In addition, researchers may explore the relative accidental finds of prostate cancer in cystoprostatectomy tissues collected from patients who have had bladder cancer surgery, and a number of clinical studies have already published their findings. (5) The most frequent kind of prostate cancer is a small, well- or fairly well-differentiated tumor that is completely confined inside the glands. (6, 7)

A retrospective study of 248 individuals who had been treated for bladder cancer at our institution was carried out since there had no more reports of prostate cancer in patients with bladder carcinoma until the time of admission. All of these bladder cancer patients appeared to have an apparently healthy prostate, according to the findings. The current study was planned to investigate the frequency of adenocarcinoma of the prostate in individuals who had radical cystoprostatectomy for bladder cancer

Methodology

For bladder transitional cell carcinoma, 248 male patients had radical cystoprostatectomy at our facility. Permission was taken from the ethical review committee of the institute. There were 33 to 82 year old patients (mean age = 63) in this study. Prior to surgery, a CT scan of the abdomen and a bone scan were conducted. Prostate cancer had previously been detected in one participant, and the disease had spread to the bladder. All patients had a traditional cystoprostatectomy with bilateral pelvic lymphadenectomy. An ileal conduit was employed in every case to help the urine diversion. It was necessary to measure the circumference of the prostate gland that had been excised. Prostate sections were taken at 5 mm intervals from the apex to the base of the prostate to produce complete transverse sections. Under a microscope, the specimens from each cross-tissue section were checked for any abnormalities. If adenocarcinoma is found, the tumor grade, extracapsular disease, seminal vesicle invasion, and other factors were considered. Lymph node metastases were all noted. In the data analysis, the $\chi 2$ -test was used. All the data was analyzed with the use SPPSS software version 22.

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Results

Adenocarcinoma of the prostate was discovered in 10 (4.03) % of the 248 individuals with bladder cancer. Prostate cancer was staged as pT1–pT2N0M0 in eight instances, pT3N0M0 in one, and pT4N0M0 in one. Patients with both bladder cancer and prostate cancer had a mean age of 71 years (range 61–81 years), which was substantially higher (P = 0.01) than those with just bladder cancer, who had a mean age of 63 years (range 33–82 years). In four instances, the Gleason score was 2–4, in five cases it was 5–7, and in one case it was 8–10. Two patients had Gleason patterns 4 and 5; all other tumor foci were rated 3 or below. Prostate cancer was found in 3 (4.3%) of 70 patients aged 60–69 years and 7 (7.3%) of 54 patients aged 70 years and above (7.3%). Serum prostate-specific antigen (PSA) levels that were done preoperatively were all less than 4 ng/mL in three cases.

Table 1 shows the Prostatic adenocarcinoma pathological characteristics. (n=10)

Pathological characteristics	**Number**
Tumor stages	
pT1-pT2-N0-M0	8
pT3-N0-M0	1
pT4-N0-M0	1
Pathological grade	
Gleason scores 2-4	4
Gleason scores 5-7	5^{a}
Gleason scores 8-10	1

Discussion

The purpose of this study was to find out how often prostate adenocarcinoma is in those who had bladder cancer. According to our findings, around 4% of the population is affected. This is in contrast to the 27–46 percent stated frequency of cystoprostatectomy specimens elsewhere. (8). According to the results, men in Taiwan have a reduced prevalence of prostate cancer that were noted by chance. Similar to results from examinations in the United States and Europe, the identified cancer was confined. (9) (10). The incidence of prostate cancer is generally known to be greater in Western nations than in Asian countries. (5) One adenocarcinoma exhibited seminal vesicle invasion, while the other one had seminal vesicle + bladder invasion in our cancer patients. In their blood, their PSA levels were 1.55 ng/mL and 2.09 ng/mL, respectively. Organ-confined was assigned to the remaining eight cases. In our study, the cystoprostatectomy procedure seemed to be a completely adequate therapeutic choice for virtually all of the individuals, with just two (0.8 percent) requiring further prostate cancer treatment. The identification of tiny tumors requires a thorough pathologic investigation of the removed prostatic tissue specimens. We might certainly find more cancers if we analyzed the specimens at

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2–3 mm intervals from the apex to base. All of the undetected prostate cancer patients in this research were above the age of 60, and there were two instances of advanced illness among them. In terms of prognosis, the pathologic state & grade of bladder cancer seem to be more important than the prostate cancer grade and stage. Preoperatively, our patients were thoroughly examined to rule out the possibility of concomitant prostate cancer.

Conclusion This incidence of incidentally discovered prostate cancer among our bladder cancer patients looked to be lower than the rate of incidentally discovered prostate cancer among bladder cancer patients seen in previous studies**.** We recommend routine digital rectal examination and serum PSA testing for male bladder cancer patients over the age of 60. If a patient has an abnormal DRE, an increased serum PSA, or a free PSA of less than 15%, a needle biopsy should be performed to rule out prostate cancer.

Permission:

Permission was taken from the ethical review committee of the institute

Funding source

None

Conflict of interest

Nil

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