



Review – Prostate Cancer

Clinicopathologic Features of Prostate Adenocarcinoma Incidentally Discovered at the Time of Radical Cystectomy: An Evidence-Based Analysis

Rocco Damiano^{a,*}, Giuseppe Di Lorenzo^b, Francesco Cantiello^a,
Marco De Sio^c, Sisto Perdonà^d, Massimo D'Armiento^c, Riccardo Autorino^c

^aClinica Urologica, Università Magna Graecia, Catanzaro, Italy

^bDipartimento Oncologia Molecolare e Clinica, Università Federico II, Naples, Italy

^cClinica Urologica, Seconda Università degli Studi, Naples, Italy

^dU.O. Urologia, INT Fondazione "G. Pascale", Naples, Italy

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Abstract

Objectives: To review all relevant features of incidentally discovered prostate cancer (PCa) in patients undergoing radical cystectomy for bladder cancer: incidence, pathologic characteristics, clinical significance, and implications for its management.

Methods: A structured literature review through a MEDLINE search was performed.

Results: The frequency of incidentally discovered PCa in cystoprostatectomy specimens is extremely variable because of several factors, particularly the pathology sampling. The relationship among clinically, incidentally, and autopsy-detected cancer is uncertain. The definition of clinically significant cancer varies among published reports and remains inadequate for clinical application. High-grade prostatic intraepithelial neoplasia is a marker for concurrent PCa and the risk depends more on the volume than on its absolute presence. Outcome of patients with unsuspected PCa after cystoprostatectomy relies mostly on the bladder tumor. **Conclusions:** Incidental PCa in patients with bladder cancer is highly variable and with an unclear clinical significance. For those who are candidates for prostate-sparing surgery, it seems reasonable to include a routine prostate biopsy in the standard preoperative work-up irrespective of prostate-specific antigen values. In the absence of sufficient data to make firm recommendations, when PCa is incidentally discovered, PCa surveillance should be part of the follow-up scheme after radical cystectomy.

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* Corresponding author. Magna Graecia University of Catanzaro, Campus di Germaneto, viale Europa, 88100 Catanzaro, Italy. Tel. +39 961 3697219; Fax: +39 961 3697184.
E-mail address: damiano@unicz.it (R. Damiano).

1. Introduction

Cystoprostatectomy represents the most effective treatment for muscle-invasive nonmetastatic bladder cancer [1]. Due to the high incidence of sexual complications associated with this procedure, alternative techniques have been described in highly selected cases where the preservation of potency and fertility is a highly desirable goal. Some authors described a cystectomy with partial prostatectomy preserving the vasa deferentia, seminal vesicles, and the posterior prostate [2,3]. Muto et al combined cystectomy with adenoma enucleation according to Millin [4]. Others advocated cystectomy preceded by transurethral resection of prostatic tissue with preservation of the prostatic capsule [5,6].

However, these techniques to preserve sexuality raised some concerns because of two essential risks: local invasion of the prostate by the urothelial cancer and a possible association with incidental prostate cancer (PCa).

The incidence of urothelial carcinoma of the prostate ranges from 12% to 48% in cystectomy specimens with stromal invasion present in 7.6–16.6% [7]. However, underreporting of prostatic involvement is common because most studies lack careful pathologic assessment of the prostate. Radical cystoprostatectomy is the treatment of choice in these cases. Disease-free survival is a function of the pattern of invasion because direct extension from the bladder is associated with a worse prognosis than prostate invasion via the prostatic urethra.

In industrialized countries, PCa has emerged as one of the most common malignancies in the male population [8]. Furthermore, the prevalence of latent PCa is much higher in autopsy series than that found in clinically diagnosed cases [9]. Additionally, many authors have reported a higher prevalence of PCa in patients with bladder cancer [10], although data are sparse regarding the outcome of these patients [11].

Our aim was to review all the relevant features of incidentally discovered prostate adenocarcinoma in patients with bladder cancer with regard to their incidence, pathologic characteristics, clinical significance, and implications for management.

2. Study methodology

The present study is based on a structured literature review. As of April 1, 2007, a MEDLINE search was performed for publications in the English language relating to PCa or premalignant prostate lesions discovered incidentally in cystoprostatectomy speci-

mens from patients with bladder cancer. We combined the following terms in the search: “prostate cancer,” “prostatic intraepithelial neoplasia,” “incidental,” and “cystoprostatectomy.” Inclusion criteria were established before the search was initiated to select only relevant full-length papers that met the criteria of the analysis. Therefore, only studies addressing the incidence, pathologic characteristics, and/or clinical significance of incidental PCa or related premalignant lesions from cystoprostatectomy series were included and reviewed in detail. Furthermore, papers identified from the reference lists of selected papers were also considered. Abstracts from meetings were not included in the analysis. The issue of urothelial carcinoma of the prostate and the implications for its management did not represent subjects of the present review.

3. Are PCa and bladder cancer clinically related?

Bladder and prostate cancers share similarities at different levels. Epidemiologically, bladder cancer is almost four times more prevalent in men and PCa is exclusively limited to this population.

The coincidence rate between these two cancers is significantly higher than the rate of either in the general population [12,13]. One factor to be considered in this setting is the likelihood of diagnostic bias that can occur when the presence of one genitourinary cancer leads to a more detailed clinical assessment and extensive pathologic examination that result in the incidental diagnosis of another genitourinary cancer.

Clinical data accounting for this bias were provided first by Chun, who investigated the number of patients diagnosed with prostate or bladder cancer in the cancer registry at one medical institution over 6 yr. He compared the rate of clinically detectable PCa in men with bladder cancer with the expected incidence rate of these cancers in an age-, sex-, and race-matched general population from the Surveillance, Epidemiology and End Results database. The rate of clinically detectable PCa in men with bladder cancer was 19-fold greater than expected [14].

Kurokawa et al investigated the prevalence rate of PCa between those with a present or past history of bladder cancer and an age-adjusted group of men within the same race and from the same region using the same screening regime [15]. The detection rate of PCa was 12.3% and 1.5% in the bladder cancer cases and control cohorts, respectively. They concluded that patients with a history of bladder cancer could be at high risk for concomitant PCa.

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