Incidental Prostate Carcinoma Diagnosed at Radical Cystoprostatectomy for Bladder Carcinoma: A Case Report

Sonal Paul, Anitha Padmanabhan* and Nitin M Gadgil

Department of Pathology, Lokmanya Tilak Medical college and General Hospital, Sion, Mumbai, India

ABSTRACT

Introduction: The incidence of concomitant urothelial carcinoma of the bladder and adenocarcinoma of the prostate varies from 17% to 70% as per various literature studies.

Case report: We report the case of a 82 year old male who presented with hematuria and lower urinary tract symptoms. A cystoscopy was performed which was suggestive of a 6x4x5cm mass arising from the left anterolateral wall and dome of the bladder. A Transurethral biopsy of the bladder mass showed a high grade papillary urothelial carcinoma invading the muscularis propria. Following this, the patient underwent a radical cystoprostatectomy. Histopathological examination of the bladder mass confirmed High-grade urothelial carcinoma. The entire prostate was sampled which revealed Adenocarcinoma prostate, Gleason score 3+4=7, tumor volume 6cc.

Conclusion: The incidence of incidentally detected prostatic adenocarcinoma in Carcinoma bladder cases is extremely variable. Complete sampling of the prostate helps in detecting these lesions.

Keywords: Carcinoma Prostate, Cystoprostatectomy, Incidental, Urothelial Carcinoma Bladder

Introduction

According to literature, the frequency of incidentally discovered carcinoma prostate in cystoprostatectomy specimens is extremely variable ranging from 4% to 60% [1,2]. The yield of detection of these tumors depends on the complete sampling of the prostate and the thickness of the sections taken. [3] The incidence of clinically significant prostate adenocarcinoma varies from 5% to 48% depending upon the criteria in different studies. [4,5] However, the prognosis depends upon the stage of the Carcinoma bladder and prostatic adenocarcinoma has no prognostic implications. [4] We report a case of clinically significant prostate adenocarcinoma detected incidentally in a radical cystoprostatectomy specimen.

Case report

We report the case of a 82 year old male who presented with hematuria for three months and lower urinary tract symptoms for one month. Patient was a chronic tobacco chewer for forty years.

All hematological investigations and biochemical investigations including Blood Urea Nitrogen and Serum creatinine were within normal limits. Serum Prostate Specific Antigen (PSA) levels were 3.4ng/ml. A Computed Tomography scan showed a 6.3x4.5x5cm heterogeneously enhancing lesion arising from the left anterolateral wall, and dome of the bladder. Urine cytology was reported as High-Grade Urothelial Carcinoma. This was followed by a Transurethral biopsy of the bladder mass which on histopathology was reported as Muscle invasive High-grade papillary urothelial carcinoma.

A radical cystoprostatectomy (RCP) was performed and the specimen was received in the histopathology section of our department. The specimen measured 11x10x6.5cm with attached ureters and seminal vesicles. On opening, an exophytic friable papillary tumor measuring 7x3x2cm, completely obliterating the lumen was seen arising from the left anterolateral wall of the bladder[fig.1]. The rest of the bladder mucosa was edematous. Cut section of the tumour showed areas of hemorrhage and necrosis. Prostate measured 5x4x3cm. Cut section of the prostate was greyish white nodular. No yellow areas were seen.

Tissue sections were obtained from the primary tumor including the areas of deepest invasion, bladder wall, ureters, seminal vesicles and lymph nodes. The apex of the prostate was shaved perpendicular to the prostatic urethra. The bladder neck margin was coned from the specimen and perpendicularly sectioned. The remaining prostatic tissue was sectioned at 3 mm intervals along a plane perpendicular to the urethral axis and was submitted for histopathology.

On histopathology, a pT2aN0M0, High-grade papillary urothelial carcinoma (WHO 2016 Classification) [fig.2] invading the inner half of muscularis propria was seen. There was no evidence of any lymphovascular or perineural
invasion. Also, prostate showed a T2aNxMx (WHO 2016 Classification) Acinar Adenocarcinoma involving the right lobe, with Gleason score 3+4=7 [fig.3,4] with presence of perineural invasion. Volume of tumour was 6cc. There was no evidence of extraprostatic extension, invasion into the bladder neck or invasion into the intraprostatic seminal vesicles. No lymphovascular invasion was seen. Six lymph nodes ranging in size from 0.5cm to 0.8cms were dissected and all were free of tumour. There was no evidence of any metastasis. Urethral margin at prostatic apex was free of tumor.

Three months post operative, the patient did not have any complaints. The Serum PSA level was 0.1ng/ml. Currently, the patient is being followed up.

**Discussion**

The frequency of incidentally discovered carcinoma prostate in cystoprostatectomy specimens is extremely
variable ranging from 4% to 60%.[1] The incidence in
Asia is found to be relatively lower than in Western
countries. Tanaka et al[6] from Japan have reported an
incidence of 18.1% while Pan et al[7] from China observed
an incidence of 6.8%. An Indian study by Mahadik et
al have reported a prevalence of 12.4%.[8] Out of the 22
Radical Cystoprostatectomies done for Carcinoma bladder
in our institute, in the last five years, this is the first case
of co existing Carcinoma Prostate. Carcinoma prostate is
discovered better when the entire prostate gland is studied
by taking 2-3mm slices from the base to the apex.[1]

Heidegger et al in their study of 213 patients who underwent
radical cystoprostatectomy for carcinoma bladder
observed an incidence of 53.1% of synchronous prostate
adenocarcinoma. The mean age was 71 years, Gleason
score was ≥7 in 86% cases and 10% had extraprostatic
extensions. Both PSA and PSA% were significantly
increased in these patients. They also observed adverse
bladder histology >pT3 in 63.7% patients.[2] Our patient
was 82 years old and the pre operative Serum PSA was
3.4ng/ml.

Saad et al in their study of 425 cystoprostatectomy
specimens done for carcinoma bladder observed prostatic
adenocarcinoma in 21% and High grade prostatic
intraepithelial neoplasia(HGPIN) in 10% of cases. In their
review, they have described a variable incidence of 14-60% prostatic cancer. They concluded that entire sampling of
the prostate gland and slice thickness are critical in detecting
carcinoma prostate. The PSA levels did not indicate the
presence of incidental carcinoma. Also, it did not reflect
the Gleason score or pT stage of cancer.[3]

The criteria for clinically significant cancer includes the
following,[4]

• Seminal vesicle invasion
• Positive surgical margins
• Pathologic Gleason score≥6
• Pelvic lymph node involvement or
• Tumor volume >0.5cc

Apart from the above, other criteria used by the authors were,[5]

• Proliferative index >5%
• Stage pT3
• Extracapsular extension

In our case, the Gleason score was >7, tumor volume
was 6cc, thus making it a clinically significant cancer. No
evidence of HGPIN was seen.

Joshua et al in their study of 307 patients identified
Carcinoma Prostate in 33.6% of patients. One- third of
these had clinically significant cancer.[4]

Autorino et al in their review observed that the percent of
clinically significant cancer varied from 5-60% in various
studies.[5]

Joshua et al suggested an initial post RCP PSA within 1-2
months post operative, following annually thereafter in the
absence of aggressive features like Gleason score 8-10,
pelvic nodal or seminal vesicle involvement, multifocal and
large extent of prostate involvement. Adjuvant hormonal
or radiation therapy is not advocated. They concluded that
the Ca prostate has little impact on the natural history of
Carcinoma bladder.[6] Three months post operative, Serum
PSA levels in our patient was 0.1ng/ml and he does not
have any complaints at present.

Androulakakis et al also observed that the simultaneous
occurrence of these carcinomas does not affect the
prognosis of either disease.[1]

Konski et al concluded that the most significant prognostic
factor was the stage of Bladder carcinoma.[1]

Conclusion
Incidental prostatic carcinoma in patients with Carcinoma
Bladder has a variable incidence. A complete sampling of
the prostate will enhance the detection rates of these tumors.
When prostate carcinoma is incidentally detected in radical
cystoprostatectomy specimen done for Carcinoma Bladder,
no additional treatment is required and these patients
should be followed up as per the standard protocol. In
Carcinoma Bladder patients where prostate sparing surgery
is planned, routine TRUS biopsy of prostate may be done
preoperatively.

Acknowledgements
Dr. Leena Naik, Prof and HOD, Dept of Pathology,
Lokmanya Tilak Municipal Medical College, Mumbai

References
1. Damiano R, Lorenzo GD, Cantiello F et al. Clinicopathologic
features of prostate adenocarcinoma incidentally discovered
at the time of radical cystectomy: an evidence based analysis.
Eur Urol 2007;52:648-57.
2. Heidegger I, Oberaigner W, Horninger W, Pichler R. High
incidence of clinically significant concomitant prostate
cancer in patients undergoing radical cystectomy for bladder
cancer: a 10-year single center experience. Urol Oncol
2017;35:152e1-e5.
3. Saad M, Abdel-Rahim M, Abel-Enein H, Ghoneim MA.
Concomitant pathology in the prostate in cystoprostatectomy
specimens: a prospective study and review. BJU Int 2008;102:1544-50.

4. Kaelberer JB, O’Donnel MA, Mitchell DL et al. Incidental prostate cancer diagnosed at radical cystoprostatectomy for bladder cancer: disease specific outcomes and survival. Prostate Int 2016;4:107-12.

5. Autorino R, Lorenzo GD, Damiano R et al. Pathology of prostate in radical cystectomy specimens: a critical review. Surg. Oncol. 2009;18:73-84.

6. Tanaka T, Koie T, Ohyama C et al. Incidental prostate cancer in patients with muscle-invasive bladder cancer who underwent radical cystoprostatectomy. Jpn J Clin Oncol. 2017;47:1078-1082.

7. Pan J, Xue W, Sha J et al. Incidental Prostate Cancer at the Time of Cystectomy: The Incidence and Clinicopathological Features in Chinese Patients. PLoS One. 2014;9(4):e94490.

8. Mahadik R, Bijalwan P, Thomas A. Prevalence and Pathological Analysis of Adenocarcinoma Prostate Discovered Incidentally in Radical Cystoprostatectomy Specimen: An Indian Center Experience. Journal of Clinical and Diagnostic Research. 2018;12:XC01-XC03.

*Corresponding author: 
Dr. Anitha Padmanabhan (Assistant Professor) Address: D-30,2/2 Sagar Sangam CHS Sector 4, Nerul, Navi Mumbai- 400706, INDIA
Phone: +91 9820458848
Email: anithahari2001@hotmail.com

Financial or other Competing Interests: None.