CASE REPORT

METACHRONOUS PRIMARY CARCINOMAS OF THE PROSTATE AND URINARY BLADDER- REPORT OF A CASE WITH REVIEW OF LITERATURE

Swarnagowri B.N1, Suba G2

HOW TO CITE THIS ARTICLE:

ABSTRACT: Multiple primary malignant neoplasms occur more commonly in elderly age group. Though they are encountered more frequently nowadays, the phenomenon is still considered to be rare. We report a case of an elderly man who presented with primary cancers of the prostate and urinary bladder which were diagnosed in a period of eight months interval.

KEYWORDS: Neoplasm, prostate, urinary bladder.

INTRODUCTION: The phenomenon of multiple primary malignant neoplasms in the same individual was described firstly by Billroth at the end of the 19th century1. Although, not uncommon, they occur more often in elderly patients, as the incidence of malignancies increases with age. The diagnosis of second primary neoplasms is rising as a result of prolonged survival of patients treated for previous malignancy with alkylating agents, topoisomerase II inhibitors, and/or radiotherapy2.

CASE REPORT: An 84 years old man who was a known case of hypertension and asthma came with a history of urinary retention and dysuria. The patient was a chronic smoker. Ultra sonogram revealed the enlarged prostate and the PSA level was 11.5 ng/ml. He was a known HBs Ag positive case. Other routine blood investigations were unremarkable. Transurethral resection of prostate was carried out. The specimen was sent for histopathological examination. The specimen consisted of multiple grey white firm bits of tissue and the entire tissue was processed.

MICROSCOPY: Multiple sections showed areas of architectural disturbance with single, separate, slightly less uniform glands, loosely packed invading the stroma were seen. Glands were lined by pleomorphic hyperchromatic cells with loss of basal cell layer. The diagnosis of adenocarcinoma of prostate with Gleason's grade 2+2 = 4 was made (Fig: 1). The patient's relatives denied further treatment.

Eight months later, the patient was again admitted for similar voiding complaints. Cystoscopy revealed a mass lesion in the urinary bladder and TUR –BT was done. Multiple grey white bits which were received for the histopathological examination and processed in toto.

MICROSCOPY: Sections studied showed highly pleomorphic tumour cells arranged in diffuse sheets with little intervening stroma. The cells had moderate to abundant eosinophilic to clear cytoplasm, hyperchromatic, pleomorphic nuclei, and prominent nucleoli. Many atypical mitotic figures were noted. Squamous differentiation was noted in few areas. The tumour was confirmed as urothelial carcinoma by the demonstration of anti p63 antibody nuclear marker. This IHC marker showed strong nuclear staining throughout the tumour mass (Figs: 2-4).
**CASE REPORT**

The final diagnosis of high grade urothelial carcinoma was made.

**DISCUSSION:** The generally accepted definition of multiple primary malignancies is that of Warren and Gates, who stated that each tumor must be present as a definite picture of malignancy, each must be distinct and the possibility that one is a metastasis of another must be excluded\(^1\). Metachronous (meta- means after and -chronous is the time) is a Greek word referring to a neoplasm that is discovered while there is already a known neoplasm in the same patient\(^2\).

When reviewing the existing literature we found that the frequency of prostate and bladder cancer combination is more common. Chun\(^3\), in his study titled “coincidence of bladder and prostate cancer” found that the rate of prostate cancer in those with bladder cancer was 17% and the rate of bladder cancer in those patients with prostate cancer was 3.2%.

Kinoshita et al\(^4\) in their literature review of double primary cancers of the prostate and bladder stated that the coincidence was as high as 70% for prostate cancers in patients with bladder cancer, and 3.4% for bladder cancers in patients with prostate cancer.

Our patient first developed prostate cancer and later bladder cancer. So it is worth presenting this case in view of low frequency of this combination. We summarize the case reports of multiple primary malignancies involving the urogenital system in the following table.

<table>
<thead>
<tr>
<th>Name of the Author</th>
<th>Year of publication</th>
<th>Age of the patient (years)</th>
<th>Combination of neoplasms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hashimoto et al(^5)</td>
<td>1988</td>
<td>-</td>
<td>Clear cell carcinoma – kidney TCC-urinary bladder, left ureter, left renal pelvis Adenocarcinoma- prostate</td>
</tr>
<tr>
<td>Harima et al(^6)</td>
<td>1998</td>
<td>74</td>
<td>Adenocarcinoma- prostate Clear cell carcinoma – kidney TCC-urinary bladder</td>
</tr>
<tr>
<td>Takada et al(^7)</td>
<td>2002</td>
<td>72</td>
<td>Renal cell carcinoma - kidney TCC - urinary bladder Adenocarcinoma- prostate</td>
</tr>
<tr>
<td>Satoh et al(^8)</td>
<td>2003</td>
<td>82</td>
<td>Renal cell carcinoma – kidney TCC - urinary bladder Adenocarcinoma- prostate</td>
</tr>
<tr>
<td>Abe et al(^9)</td>
<td>2005</td>
<td>60</td>
<td>TCC - urinary bladder Adenocarcinoma- prostate</td>
</tr>
<tr>
<td>Koutsopoulos et al(^2)</td>
<td>2005</td>
<td>75</td>
<td>TCC - urinary bladder Adenocarcinoma- prostate Small cell carcinoma - lung</td>
</tr>
</tbody>
</table>
Otrock et al\textsuperscript{10} & 2005 & 65 & Adenosquamous cell carcinoma - lung  
TCC - urinary bladder  
Adenocarcinoma - prostate  
Adenocarcinoma - breast  

Tiwari et al\textsuperscript{1} & 2012 & 55 & Renal cell carcinoma - kidney  
TCC - urinary bladder  
Adenocarcinoma - prostate  

Table: 1 Summarizes the case reports of multiple primary malignancies involving the urogenital system highlighting the author, year of publication, patient's age and combination of neoplasms.

TCC = Transitional cell carcinoma.

There was an association between DNA repair and N-acetyltransferase polymorphisms and risk of prostate and bladder cancer. These data suggest that these cancers may share a common carcinogenic process or that these patients are particularly susceptible to both cancers\textsuperscript{4}.

Multiple primary tumours are challenging for the clinician in view of treatment difficulties. Prognosis depends upon the aggressiveness of the tumour. Our patient had not undergone further treatment due to old age, fitness issues and unwillingness of the family.

**CONCLUSION:** As the prostate and bladder cancers are closely associated with each other, any patient who is diagnosed with one cancer should be thoroughly investigated and closely monitored for the occurrence of the other. Early diagnosis and aggressive treatment may improve survival rate.

**REFERENCES:**


AUTHORS:
1. Swarnagowri B.N.
2. Suba G.

PARTICULARS OF CONTRIBUTORS:
1. Associate Professor, Department of Pathology, Dr. B.R. Ambedkar Medical College, Bangalore.
2. Assistant Professor, Department of Pathology, Dr. B.R. Ambedkar Medical College, Bangalore.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Swarnagowri B.N.,
No. 21, VIth Cross, Vasanthnagar, Bangalore - 560052.
Email- swarnagowri@ymail.com

Date of Submission: 16/08/2013.
Date of Peer Review: 17/08/2013.
Date of Acceptance: 29/08/2013.
Date of Publishing: 04/09/2013

Figure 3: Urothelial carcinoma showing highly atypical cells with prominent nucleoli and atypical mitotic figures (HE 40X).

Figure 4: Tumour cells of urothelial carcinoma show nuclear positivity for anti p63 antibody stain. (10X)