

MULTIPLE PRIMARY TUMORS OF THE GENITOURINARY TRACT

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ABSTRACT

Multiple primary tumors of the genitourinary tract with dissimilar histology are very rare. We report a patient who presented with synchronous invasive transitional cell carcinoma of the bladder, papillary cystadenocarcinoma of the kidney and a high grade prostatic intra-epithelial neoplasia.

Key Words: Bladder cancer, Renal cell carcinoma, Prostatic intraepithelial neoplasia, Multiple cancer.

INTRODUCTION

Several studies in the literature dealing with the occurrence of multiple primary malignant neoplasms report incidence rates ranging from 4.2 to 36% among cancer patients (1,2) and those studies that include tumors found at autopsy report even have higher rates (3). The most common sites for multiple tumors vary among the reports but as the occurrence of primary tumors in the genitourinary tract is higher compared to other organ systems, multiple tumors have a predilection to involve a GU tract organ.

Multiple primary malignant tumors involving only the GU tract are rare and present either as multicentric malignant tumors of the urinary epithelium, tumors occurring in bilateral organs or as multiple tumors with dissimilar histology.

We report a 53 - year - old male patient who underwent a nephroureterectomy, radical cystectomy and reconstruction of the lower urinary tract because of invasive transitional cell carcinoma of the bladder and a non - functioning kidney and was later found to have a papillary cystadenocarcinoma of the kidney and a high grade prostatic intraepithelial neoplasia.

CASE REPORT

The patient presented with painless total hematuria and was hospitalized when his excretory urogram demonstrated a non-functioning left kidney with the suggestion of a mass in the left bladder wall. Endoscopically a 7x7cm. solid tumor was seen on the left wall of the bladder occluding the left ureteral orifice. Transurethral resection was performed and the pathological study revealed a Grade III stage T3b transitional cell carcinoma.

Abdominal and pelvic ultrasonography, computerized tomography and magnetic resonance imaging following TUR demonstrated a left hydroureteronephrosis, tumorous thickening of the left bladder wall with extension into the peripelvic fat and left seminal vesicle and a possible invasion of the prostate by the tumor. No pathologic lymph nodes were detected and serum PSA level was 2.1 ng/ml. The patient underwent a left nephroureterectomy and cystoprostatectomy with reconstruction of the lower urinary tract by Studer operation.

Histopathologic al examination revealed a pT3b G III No Mx transitional and clear cell carcinoma (mixed carcinoma) of the bladder (Fig. 1). Although macroscopically normal, serial sections of the nephrectomy specimen demonstrated a 1.5cm. necrotic mass in the upper pole of the kidney which turned out to be papillary cystadenocarcinoma (Fig. 2). Three mm serial sections of the prostatectomy specimen were taken and the whole tissue was processed for microscopic examination that revealed a high grade prostatic intraepithelial neoplasia in the glands close to the bladder neck which was not accompanied with prostate carcinoma. It was also confirmed that each neoplasia had its own histologic pattern and that none were a metastatic lesion of the other.

The patient is doing well in the post-operative 19th month.

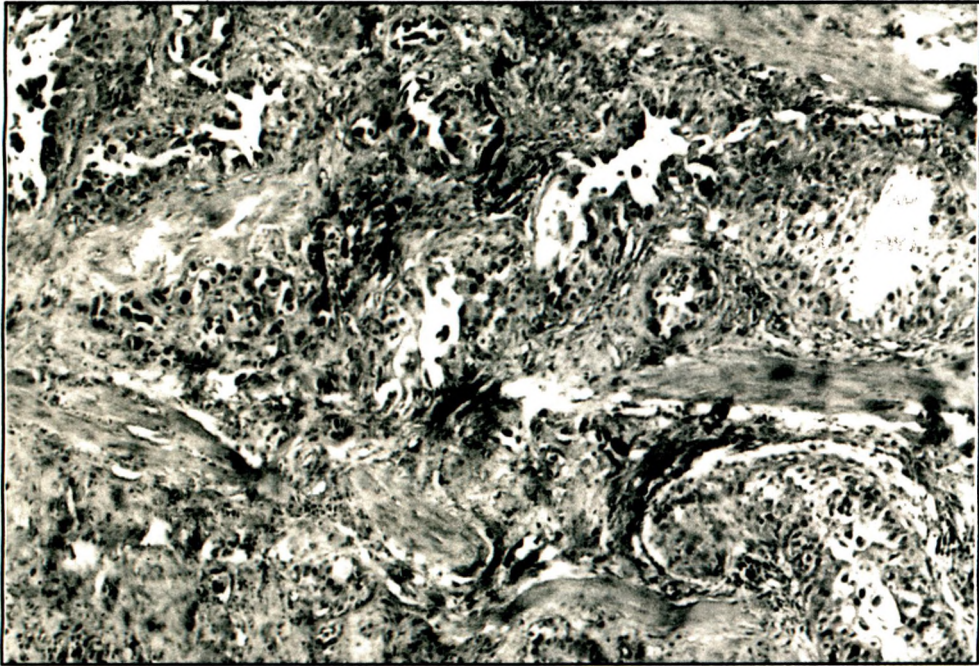


Fig. 1: Transitional cell carcinoma infiltrating the bladder wall. (H.E. X 100)

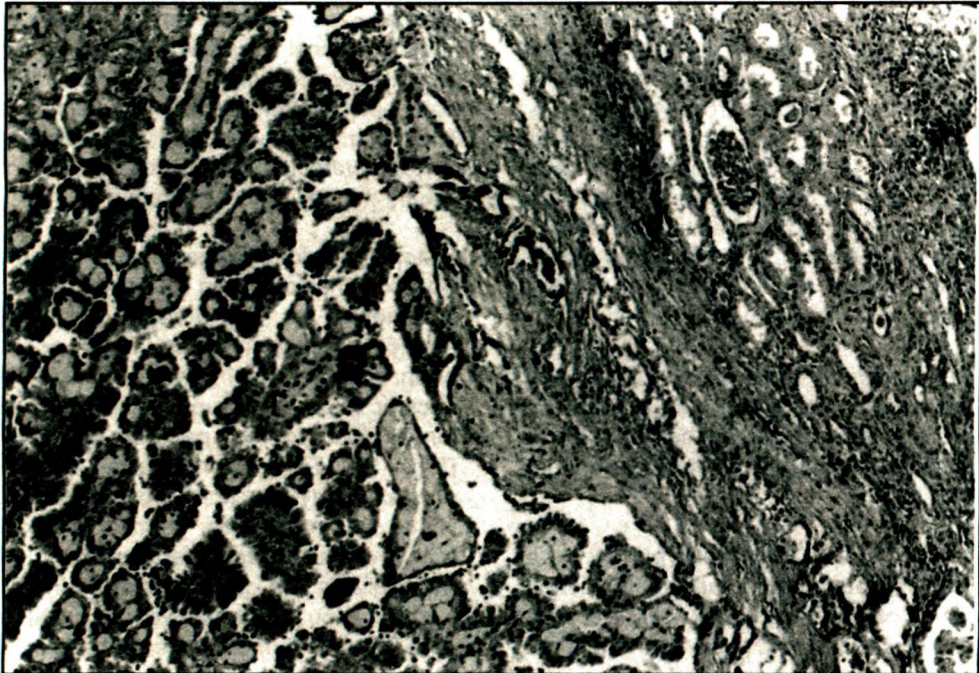


Fig. 2: Papillary cystic renal cell carcinoma adjacent to renal cortex. (H.E. X 40)

DISCUSSION

Although multiple primary malignant neoplasms can occur in all age groups, they are more common in the elderly. As the life expectancy of individuals increases and with the improved methods of diagnosis, the incidence is expected to rise. It is not yet known whether a patient with a history of cancer is more susceptible to malignant tumors in other organs or this is just a coincidental phenomenon. However, it is well-known that urinary tract is one of the most common sites in patients with multiple tumors. Assembled data from large surveys suggest that multiple primary tumors occur in 3.1% of cancer patients and 13.9% of these have genitourinary carcinoma. (4) Multiple malignant tumors involving 2 GU tract organs are rare and those involving three are even rarer. There are only a few cases of triple urological malignancies with dissimilar histologies reported in the literature. (5-7)

Multiple tumors of the GU tract may occur coincidentally but there seems to be an elevated risk for bladder cancer to occur in association with prostatic cancer. This can be attributed to the high incidence of prostatic carcinoma in the elderly which is believed to be 18% in the sixth decade and 30% in the seventh decade, the frequency climbing steeply with age. Therefore, it is not uncommon to encounter a coexisting adenocarcinoma of the prostate in the histopathological examination of the specimens from patients who undergo radical cystoprostatectomy for bladder tumors and incidence rates as high as 28% have been reported (8). In one study 5.4% of the patients with bladder cancer had malignant tumors outside the urothelium and of these 22.1% were in the prostate and 4.3% were renal carcinomas (9). We had previously shown that patients with urethelial tumors of the upper urinary tract had a 4-fold increased chance to develop a second gastrointestinal malignancy (10).

Several etiologic factors are believed to be associated with an increased risk of developing multiple primary malignant neoplasms. Although our patient did not give a history of cigarette smoking, it is probably the most important risk factor that has the potential to induce cancers at multiple sites in the urinary tract. Our patient had two malignancies

(bladder and kidney) and a high grade prostatic intraepithelial neoplasia which is known to be closely related to invasive carcinoma. The incidental finding of a renal tumor and PIN in our patient suggests that in patients with an urologic cancer, the surgeon should be well aware of the possibility of another urologic (or non-urologic) malignancy. We believe that any patient with invasive bladder cancer and a non-functioning kidney should undergo a nephroureterectomy together with radical cystectomy, not only for concomittant upper urinary tract tumor but also for an undetected renal cell carcinoma. Another point is that the high incidence of coexisting latent prostatic tumor justifies cystoprostatectomy as an appropriate choice of therapy in non-metastatic invasive bladder tumors.

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