CASE REPORT

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A Rare Metastasis of Prostate Cancer

İlkin Hamid-Zada, Bekir Demirtaş, Özgür Kazan, Özgür Efiloğlu, Asıf Yıldırım

İstanbul Medeniyet University Faculty of Medicine, Department of Urology, İstanbul, Turkey

ABSTRACT

Prostate cancer is one of the most common cancers in men. Generally, prostate cancer metastases occur in lymph nodes and bones, but rare metastases, such as those in the kidneys, can be observed. There is no clear consensus regarding the diagnosis and treatment of renal metastases of prostate cancer. Our case report describes a 70-year-old male patient with a right renal mass detected on routine imaging due to elevated prostate-specific antigen levels 3 years after he was diagnosed with prostate cancer. For rare renal metastases, biopsy of the mass should be considered for diagnostic purposes.

Keywords: Prostate cancer, renal metastasis, prostate-specific antigen

INTRODUCTION

Nowadays, prostate cancer is one of the most common oncological diseases and is also the second most common cancer diagnosed in men [1]. We know that prostate cancer generally metastasizes to the lymph nodes and bones. Prostate cancer rarely metastasizes to some organs. The kidney, intracranial, ocular, and adrenal glands can be given as examples. Diagnosis and treatment for renal metastasis of prostate cancer remain controversial. We report a rare case of prostate adenocarcinoma metastasizing to the kidney.

CASE PRESENTATION

A 70-year-old male patient presented with right flank pain two months previously and lower urinary tract symptoms admitted to our hospital. He had adenocarcinoma group 5 [Gleason score 9 (4+5)] transrectal prostate biopsy results and a prostate-specific antigen (PSA) level of 100 ng/mL. After diagnosis of prostate cancer, androgen deprivation therapy and radiotherapy were started. There was no solid organ metastasis upon diagnosis. Biochemical recurrence occurs 2 years after the initial diagnosis. The patient was started on enzulatamide, and his PSA level began to decrease. The patient did not apply for hospitalization for 2 years after oncological treatment. During the screening tests, a 4 cm low echogenic lesion was detected on ultrasound at the ureteropelvic junction of the right kidney, and the PSA value was 135 ng/mL. For further investigation, magnetic resonance imaging (MRI) was taken. The MRI scan showed a contrast-enhanced mass in the right kidney (Figure 1), which indicated the possibility of transitional cell carcinoma. After MRI scan, the patient was prepared for surgery and evaluated the right ureter for ureterorenoscopy. First, the right distal and mid-ureter appearance was edematous and narrow. The operation time can be observed until the proximal ureter is examined and urine cytology. Urine cytology result was negative for urothelial cancer. Retrograde pyelography showed no apparent abnormality, such as malignancy or filling defect in the suspected area on MRI. After surgery, a tru-cut biopsy was performed from the mass. The pathological result indicated adenocarcinoma, which was considered to have originated from the prostate, according to the immunohistochemical stain (Figure 2). In immunohistochemistry, tumor tissue showed negative staining for cytokeratin 7, but NK3 homebox-1 and prostate-specific acid phosphatase-positive staining for PSA. The patient was referred to medical oncology.

DISCUSSION

Currently, prostate cancer is one of the most common causes of cancer deaths in men. Theoretically, prostate cancer cells can spread anywhere in the body. Prostate cancer metastases occur more commonly in the following areas: bones, lymph nodes, lungs, and liver. Rare locations of prostate cancer metastasis include adrenal glands, brain, breasts, eyes, salivary glands, spleen, pancreas, and kidneys.

Kidney metastases are more common in lung, colon, and breast cancers. Only few cases of prostate cancer have been

Address for Correspondence: İlkin Hamid-Zada MD, İstanbul Medeniyet University Faculty of Medicine, Department of Urology, İstanbul, Turkey
Phone: +90 538 846 66 87 **E-mail:** ilkin081994@gmail.com **ORCID ID:** 0009-0000-0550-250X
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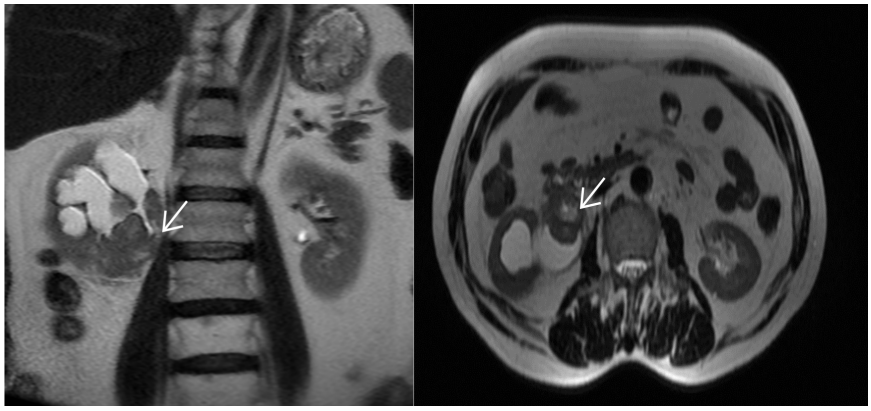

Figure 1. Coronal and axial MRI demonstrating right renal mass
MRI: Magnetic resonance imaging

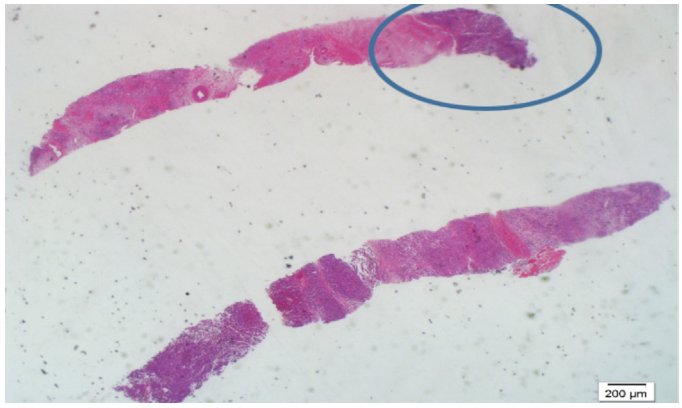

Figure 2. Histological section showing renal metastasis of prostatic adenocarcinoma

reported. The kidneys are the most vascular organs among the regions where prostate cancer metastasizes; the cause of this metastasis is thought to be the result of arterial embolization [2]. Sometimes, we can see tumor-to-tumor metastasis and called collison tumor [3]. A rare metastases such as renal oncocytoma metastasis or renal cell carcinoma of prostate cancer have been seen in the literature. It is important to note that renal cell carcinoma is the most common recipient tumor and it metastasizes from tumor to tumor [4]. Renal metastasis of prostate cancer was first reported by Kutcher et al. [5] in 1986. Additionally, Denti et al. [6] detected a mass lesion in the left kidney on imaging and performed biopsy of the lesion. Histopathological examination and immunostaining of the mass revealed prostate adenocarcinoma [6]. Ibinaiye et al. [7] described a second case diagnosed as antemortem by percutaneous fine needle aspiration in the literature. Sakata et al. [8] reported the incident detection of a kidney mass on computed tomography in a male patient. He received treatment for prostate cancer 2 years ago. Left nephrectomy was performed. The pathological finding of this case was renal metastasis of prostate adenocarcinoma [8]. In our case, it was revealed during routine follow-up. Fine needle biopsy helped in the diagnosis of atypical prostate cancer metastases. In the literature, survival rates are less than 2 years in patients with prostate cancer and kidney metastases [9]. Although our patient was diagnosed with prostate cancer metastasis, he has been alive for 6 months.

More careful screening should be performed in patients with high-risk prostate cancer and high serum PSA levels. Rare atypical site metastases occur in a small proportion of these patients. When a renal lesion is detected in patients diagnosed with prostate cancer, a metastatic lesion should be considered. Although prostate cancer metastasis to the kidney is rare, biopsy should be considered in such cases. Although the clarity of this situation is not known, routine metastatic screening is very important. In literature, there is no definitive treatment; more reports and studies with a higher level of evidence should be conducted to help us make decisions in this patient group.

Ethics

Informed Consent: The patient written informed consent was obtained.

Authorship Contributions

Surgical and Medical Practices: İ.H-Z., B.D., Ö.K., Ö.E., A.Y., Concept: İ.H-Z., B.D., Ö.K., Ö.E., A.Y., Design: İ.H-Z., B.D., Ö.K., Ö.E., A.Y., Data Collection or Processing: İ.H-Z., Analysis or Interpretation: İ.H-Z., B.D., Literature Search: İ.H-Z., B.D., Ö.K., Ö.E., A.Y., Writing: İ.H-Z.

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