

## Penile metastasis from renal cell carcinoma

*Böbrek kanserinden penise metastaz*

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### Abstract

Skip-metastasis is well-known pattern in renal cell carcinoma (RCC). Unusual metastasis from RCC is rare. Surgery comes up when there is operable metastatic tissue. Herein, we present a case of penile metastasis from RCC. A 66-year-old man admitted outpatient clinic with symptoms of penile mass with painful intermittent erections. Clinical evaluations showed kidney mass with multiple paraaortic lymph nodes. Radical nephrectomy and excisional biopsy from penile mass were performed. Pathology reported clear cell RCC and its metastases into penis. Patient was referred to medical oncology department. Rare metastasis from RCC could be related with poor survival and clinicians should be aware for these.

**Key Words:** Clear Cell Renal Carcinoma, metastasis, penis.

### Özet

Böbrek kanserinin (BK) atlayarak metastaz yapma olasılığı, iyi bilinen formlarındandır. BK'den alışılmadık metastazlar nadirdir. Eğer çıkarılabilecek bir dokuda ise cerrahi gündeme gelir. Bu olgu sunumunda BK ve penis metastazını sunduk. Altmış altı yaşında erkek hasta poliklimiğize peniste şişlik ve spontan ağrılı ereksiyon yakınmaları ile başvurdu. Muayene ve tetkikleri sonrasında, böbrek tümörü ve bunun birçok paraaortik lenf nodu mevcuttu. Radikal nefrektomi ve penisteki kitleden eksizyonel biyopsi yapıldı. Patoloji berrak hücreli BK ve penise metastazını rapor etti. Hasta medikal onkoloji kliniğine kemoterapi için yönlendirildi. BK'nin çok nadir metastazları kısa yaşam süresi ile ilişkilidir ve klinisyenler BK'nin metastazları hakkında bilinçli olmalıdırlar.

**Anahtar Kelimeler:** Berrak hücreli böbrek kanseri, metastaz, penis.

Geliş tarihi (Submitted): 14.10.2014  
Kabul tarihi (Accepted): 02.03.2015

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### Introduction

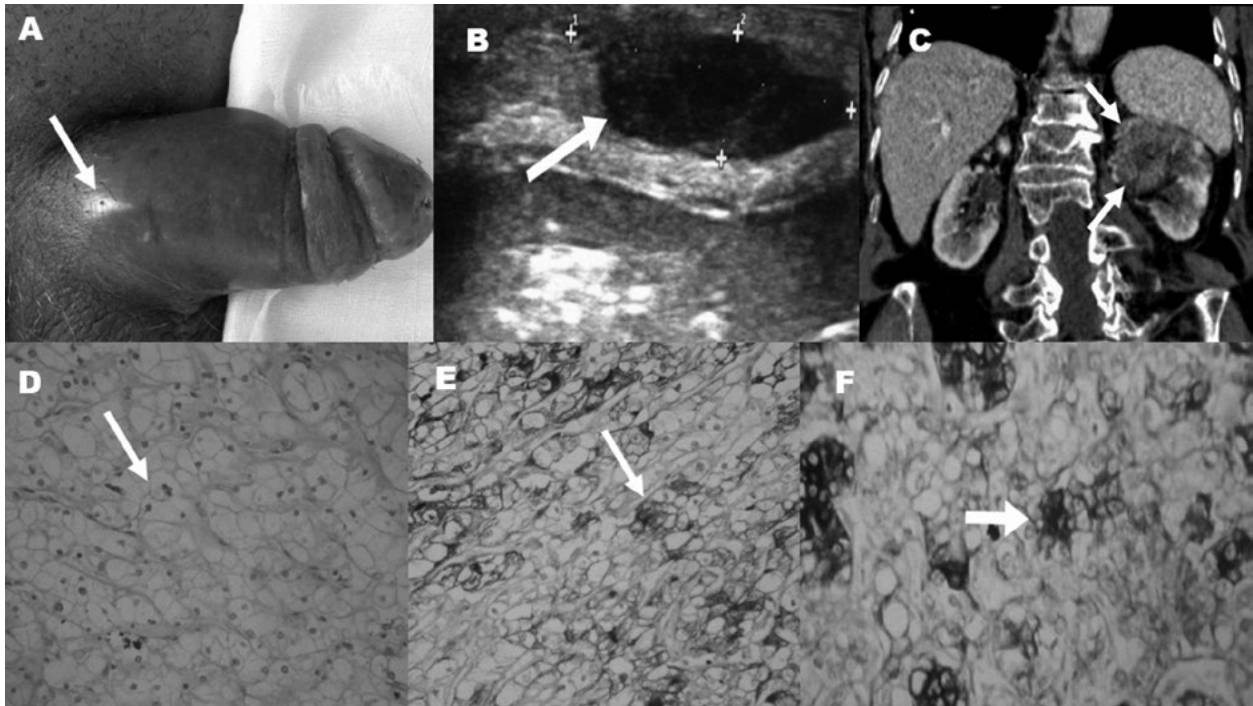
Renal cell carcinoma (RCC) constitutes 2-3% of all cancers, and it is also one of the most important cancer in urological practise (1). The incidence of RCC has been still increasing in the Europe by early diagnosis and advanced imaging technologies (2). However, RCC can have metastases at the time of diagnosis. Furthermore, some unusual tissues may be targeted by metastases.

Herein, we presented an extremely rare case of penile metastasis from RCC. After radical nephrectomy and in-

cisional biopsy from penis, clear cell subtype of RCC was diagnosed.

### Case report

A 66-year-old man admitted urology outpatient clinic with chief symptoms of painful nodules on the dorsum of the penis with spontaneous intermittent erections. Detailed history was evaluated, and physical examinations were performed. He was smoking for 43 years and retired from an office work. He had an experience of haematuria for once, about 2 weeks ago but he did not care. Addition-



**Figure 1.** Clinical, radiological, and pathological findings of penile metastasis of renal cell carcinoma. **a.** Arrow shows the visible penile nodule. **b.** There is a metastatic nodule in corpora cavernosum of penis with 5x22mm in diameter. Arrow shows the metastatic nodule. **c.** There is a solid mass measured 7.4x7cm in left kidney with multiple paraaortic lymph nodes (Arrow on the above shows mass and arrow on the below shows part of multiple paraaortic lymph nodes.). **d.** In light microscope, epithelial cells with transparent cytoplasm, ovoid nuclear growth could be seen in haematoxylin stain (HEX40) (Arrow). **e.** Immunohistochemistry examinations were positive with anti CD-10 antibody (CD-10X40) (Arrow). **f.** Cytokeratin 18 monoclonal antibody was positive in tumour (CK-18X40) (Arrow).

ally, he noticed multiple growing and increasing palpable nodules on dorsum of penis (Figure 1a). There was no additional pathology in physical examination including digital rectal examination for prostate. In laboratory, serum alkaline phosphatase was high but haemoglobin level was low. Additionally, there was microscopic haematuria in urine analyses. His prostate specific antigen was normal. In ultrasonography (US) (Toshiba, Nemio 35 (SSA-550A), Japan) examinations, there were solid masses in corpora cavernosa of penis (Figure 1b). In upper urinary tract investigation, there was a mass which was originated from middle part of left kidney. Therefore, computed tomography (CT) (SOMATOM Emotion, Siemens, Erlangen, Germany) examination was performed and there was a mass with 7.4 cm in diameter of his left kidney with multiple paraaortic lymph nodes (Figure 1c). There was no pathology in lung, liver, and other organs in CT. Additionally, there was no bone metastases in bone scintigraphy.

In the light of these findings above, written and signed

consent form was obtained from patient. Then, open radical nephrectomy with incisional biopsy from penile nodules was performed. In histopathology of kidney mass and penile metastases were similar, and there were typically epithelial growth with transparent cytoplasm in tumour cells, in light microscope (Figure 1d). Immunohistochemistry examinations with anti CD-10 antibody (Figure 1e) and Cytokeratin 18 monoclonal antibody (Figure 1f) showed clear cell subtype of RCC and its metastases. In view of these, pathology reported clear cell with subtype of RCC in kidney and its metastases into penis.

The patient was consulted with medical oncology department of our institute. Targeted therapy was planned but patient's general condition rapidly deteriorated, because of cardiologic reasons as arrhythmia. He was followed-up in intensive care unit for a week, and he died, after a short time period.

#### Discussion

We presented an extremely rare case as penile me-

tastasis from RCC. However, there have been handful of cases in published literature, our case was unique that metastasis of RCC was diagnosed after penile metastatic nodules were occurred clinically (3). Smoking is one of the well-known reason in aetiology of RCC as in our case, and CT is widely used for observing features of tumour (2).

Ali Khan et al. reported the possible haematogenous ways of metastases from RCC to penis (4). Additionally, Daniels and Schaeffer revealed clinic manifestations of penile metastasis of RCC (5). Clinical symptoms of our case were similar with their findings regarding intermittent spontaneous erections. Moreover, penile nodules were the chief symptoms. Our case was different from published cases in the literature, as the penile metastases and RCC were diagnosed at the same time. The unusual metastases from RCC might be related with poor prognosis as in our case (5). Nevertheless, when RCC was diagnosed even with metastases, if the patient's general condition would be appropriate for resection of tumour, the tumour burden should be removed by surgery (2). On the other hand, if the metastatic tissue could be resected, a surgical procedure would have been performed. Surgeons should be very careful for not to injury penile nerves, during operation. Thus, they can avoid erectile dysfunction.

Metastases from RCC are usually resistant to conventional chemotherapy and radiotherapy. Cytokine therapies consisting of interleukin-2 and interferon have been standard therapies for metastatic RCC (2). Recently, targeted agents have been used as other options for metastatic RCC (2). Thus, after operation we referred our patient to oncology department. However, severe metastases were occurred, in addition, patient's general condition get worse because of arrhythmia, and he died.

In the case of metastases from RCC, if the kidney has been suitable for radical nephrectomy even open, laparoscopic and/or robotic assisted laparoscopic fashion, radical nephrectomy should be performed. Penile metastasis can occur extremely rare during the course of RCC. Rapid ligation of lumbar and gonadal vessels may prevent penile metastasis of RCC, after ligation of renal vessels. Surgery plus targeted therapy can also be one of the treatment options for metastatic RCC (6).

In conclusion, RCC may be detected with extremely rare and unusual metastases. Clinicians should be aware of these metastases from RCC and radiological evaluations can be helpful for accurate diagnosis.

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