Case Report

Testicular Metastasis from Renal Cell Carcinoma: A Case Report and Review of the Literature

Keren Rouvinov^a Endre Z. Neulander^b Elena Kan^c Murad Asali^b
Samuel Ariad^a Wilmosh Mermershtain^a

^aDepartment of Oncology, Soroka University Medical Center, Faculty of Health Sciences, Ben Gurion University of the Negev, Beer Sheva, Israel; ^bDepartment of Urology, Soroka University Medical Center, Faculty of Health Sciences, Ben Gurion University of the Negev, Beer Sheva, Israel; ^cDepartment of Pathology, Soroka University Medical Center, Faculty of Health Sciences, Ben Gurion University of the Negev, Beer Sheva, Israel

Keywords

Renal cell carcinoma · Testicular metastasis · Orchiectomy · Sunitinib

Abstract

Testicular metastases from renal cell carcinoma (RCC) are extremely rare. To the best of our knowledge, only 33 cases have been described in the literature. Most of the reported cases are of unilateral testicular metastasis from RCC. We report a case of metachronous ipsilateral testicular metastasis from RCC in a 78-year-old man 6 years after nephrectomy. Scrotal ultrasonography showed a 4 × 5 cm mass in the right testis. Right inguinal orchiectomy was performed for diagnosis. Computed tomography revealed liver and lung metastases. First-line therapy with sunitinib was started in November 2016 for metastatic RCC.

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Introduction

Renal cell carcinoma (RCC) is the most common cancer of the kidney. Between 20 and 30% of patients are diagnosed with metastatic disease at diagnosis, and 20–40% of patients undergoing radical nephrectomy for localized disease will eventually develop metastases [1]. Secondary neoplasms of the testis are rare, representing 4.6% at autopsy and 1.6% in surgical specimens [2]. The most common secondary testicular tumors are metastases from the prostate, lung, kidney, gastrointestinal tract, and skin (melanoma) [3].

We present a case of a patient with ipsilateral right testicular metastasis from RCC 6 years after nephrectomy and review the previously reported cases.

Case Report

A 72-year-old man, with hypertension and dyslipidemia per history, presented at the urology clinic with right flank pain. Computed tomography (CT) of the abdomen revealed a tumor mass with a diameter of 7 cm in the right kidney, with no evidence of metastatic disease. He underwent right nephrectomy in February 2010. Pathologic study revealed RCC, clear cell type, 7 cm in diameter, nuclear grade 3. The tumor extended through the renal capsule but was confined within Gerota's fascia. All surgical margins were free from tumor.

In August 2016, due to scrotal pain, the patient underwent scrotal ultrasonography and was diagnosed with a 4 × 5 cm mass in the right testis (Fig. 1). He underwent right orchiectomy in October 2016. Pathologic study revealed metastatic RCC (Fig. 2). Immunostains: CD10, RCC, PAX8, CD8/18 and vimentin were positive. Margins were not involved. CT of the chest, abdomen, and pelvis revealed liver and lung metastases.

In November 2016, therapy was initiated with sunitinib 50 mg/day once daily in 6-week cycles consisting of 4 weeks of treatment followed by 2 weeks without treatment.

Discussion

RCC commonly spreads to lymph nodes, lungs, bone, liver, and brain, but rarely spread to the testes [4–7]. The first case of testicular metastasis from RCC was published by Bandler and Roen [8] in 1946. Most published cases are with unilateral testicular metastases [4]. Dieckman et al. [9] reported 13 cases of testicular metastases and speculated about left lateral dominance in unilateral testicular metastases. Moriyama et al. [4] published a rare case of simultaneous bilateral testicular metastasis and summarized 30 cases of unilateral metastasis to the testis from RCC. Of the 30 cases, 18 were of ipsilateral metastases and 9 were of contralateral metastases [4].

Camerini et al. [5] reported a case of testicular metastasis from RCC in a young patient that responded to interleukine-2 treatment. Datta et al. [10] reported 5 cases of RCC metastatic to the testis or its adnexa, including 3 that mimicked primary testicular neoplasms.

Testicular metastases from RCC are usually ipsilateral left or contralateral [4]. We have presented a case of a patient with ipsilateral right testicular metastasis from RCC 6 years

after nephrectomy. After right orchiectomy for a painful testicular mass, the patient started systemic treatment with sunitinib.

A large phase III trial with 750 untreated patients with metastatic clear cell RCC were randomized 1:1 to receive sunitinib or INF- α and showed longer median progression-free survival in the sunitinib arm versus the INF- α arm (11 months vs. 5 months) and a superior objective response rate in the sunitinib arm (31 vs. 6%) [11].

In our case the patient developed an ipsilateral right testicular metastasis from RCC 6 years after primary nephrectomy. The influence of testicular metastases from RCC on prognosis is unknown because of the rarity of cases. Scrotal examination should be considered as part of routine clinical examination in RCC patients.

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Statement of Ethics

The authors have no ethical conflicts to disclose.

Disclosure Statement

The authors state that they have no conflicts of interest.

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Fig. 1. Ultrasound images showing a right testicular mass.

Fig. 2. Microscopic section of right testicular metastasis from renal cell carcinoma. **a** ×100, **b** ×200.