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Vagina as a rare location of renal cell carcinoma metastasis

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Summary

Introduction: Metastatic renal cell carcinoma is often found in distant organs, including lung, bone, brain, and liver. Metastases to the vagina are extremely rare. *Case Report:* The authors present a case of renal cell carcinoma metastasis to the anterior vaginal wall four months after nephrectomy in a 56-year-old patient. The vaginal lesions were excised. After two years the patient had no signs of recurrence or the disease progression. *Conclusion:* Vaginal metastases should be considered in differential diagnosis of female renal cell carcinoma patients presenting with vaginal bleeding of mass.

Key words: Renal cell carcinoma; Vagina; Metastasis.

Introduction

Renal cell carcinoma (RCC) is the third most common urological cancer, accounting for approximately 3% of the malignancies in adults [1]. Up to 30% of patients have metastatic disease at the time of presentation, and 20-40% of patients having undergone nephrectomy for the treatment of RCC will subsequently progress to distant metastatic disease [1, 2]. The most common metastatic site is lung, followed by bone, brain, adrenal gland, and liver [1]. Vaginal metastasis of renal cell carcinoma are rare, with less than 90 cases reported in the literature [3, 4].

Case Report

A 56-year-old patient (gravida 5, para 2) with a history of right radical nephrectomy due to renal carcinoma was admitted to the present hospital for profuse vaginal bleeding. Two previous episodes of heavy vaginal bleeding were treated with tamponade in the regional hospital one and three months prior. The radical nephrectomy was performed four months prior to the admission, with pathologic examination revealing clear cell carcinoma, grade 2, nuclear grade 1, pT2 Nx Mx, with extensive necrosis and hemorrhage and no evidence of lymphovascular invasion.

On vaginal examination several well-demarcated bleeding exophytic lesions on the left anterior wall measuring up to eight mm in diameter were noted. There was no infiltration of the surrounding tissue nor the involvement of vulva and cervix. The bimanual examination of the uterus and adnexa and ultrasonographic pelvic imaging were unremarkable.

Chest radiograph showed no evidence of pulmonary metastases. Magnetic resonance imaging (MRI) of the pelvis and abdomen revealed hypervascular lesions on the anterior vaginal wall, discretely heterogeneous uterine cervix, and incapsulated collection in the right renal region which corresponded to the postoperative sequelae. The vaginal lesion biopsy as well as cervical biopsy followed. Pathologic examination of the vaginal sample demonstrated islands of cells with round and oval nuclei and abundant clear cytoplasm (Figures 1-3). The findings were consistent with the renal clear cell carcinoma metastasis to the vagina. There were no signs of malignancy in the cervical biopsy specimen.

The patient underwent local excision of the vaginal mass. Histopathological examination confirmed the diagnosis of metastatic clear cell carcinoma in the vaginal tissue with surgical margins free of tumor. Two years after the surgery there were no signs of local recurrence or progression of the disease on serial follow-up exams and radiological imaging.

Discussion

Primary adenocarcinoma of the vagina is extremely rare, accounting for 9% of all vaginal neoplasms. When discovered, vaginal adenocarcinoma is generally regarded as metastatic, until proven otherwise. In almost two-thirds of cases, the metastases originates from the cervix, endometrium, colon or ovary. Less frequently, the primary tumor location is pancreas, stomach or kidney.

According to the literature reviews of Bozaci *et al.* and Mendese *et al.* [4, 5], there are less than 90 cases of vaginal metastases from renal cell carcinoma reported. In the setting of RCC metastatic to vagina, the lesions are usually solitary and located in the lower third of the anterior vaginal wall. Patients typically present with vaginal bleeding, discharge or mass. Although vaginal metastases occurring years after nephrectomy have been described, in the majority of cases, the detection of vaginal tumor precedes the definite diagnosis of renal carcinoma. In the present patient the symptoms related to the metastatic disease, i.e. vaginal bleeding, were first noted one month after nephrectomy.

When vaginal metastases are present, the renal carcinoma is usually found on the left kidney. This left-side predilection is in accordance with the theory of retrograde venous tumor spread to vagina. The existence of retrograde contrast flow from left renal vein to left ovarian vein, ovarian, and uterovaginal plexus has been demonstrated angiographically [6]. Pre-

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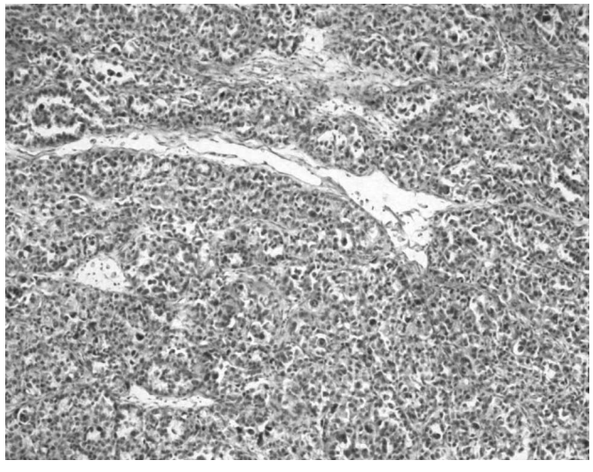

Figure 1. — Vaginal sample demonstrating islands of cells with round and oval nuclei and abundant clear cytoplasm (Hematoxylin-eosin staining ×5).

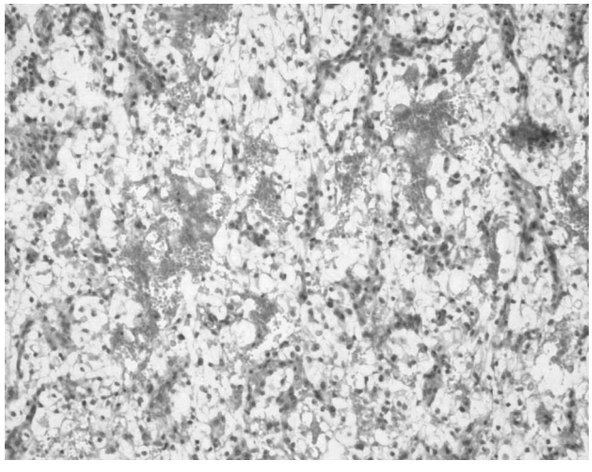

Figure 2. — Vaginal sample demonstrated islands of cells with round and oval nuclei and abundant clear cytoplasm (Hematoxylin-eosin staining ×10).

sumed presence of anastomoses between uterovaginal plexus and obturator vein, which receives branches from the external genital veins, further explains the involvement of the distal third of the vaginal wall [7]. When renal tumor is present on the right side, as was the case with the present patient, metastasis to vagina may also be attributed to retrograde venous tumor extension via inferior vena cava and right ovarian vein.

Surgery is the cornerstone of RCC treatment. Accordingly, literature data state that the surgical removal of solitary RCC metastases, if resectable, improves survival figures [1]. The overall prognosis of patients with vaginal metastasis of RCC is poor, with a median survival of 19 months [4]. The present patient has not shown any signs of recurrence of the disease on serial follow-up examinations two years after surgery.

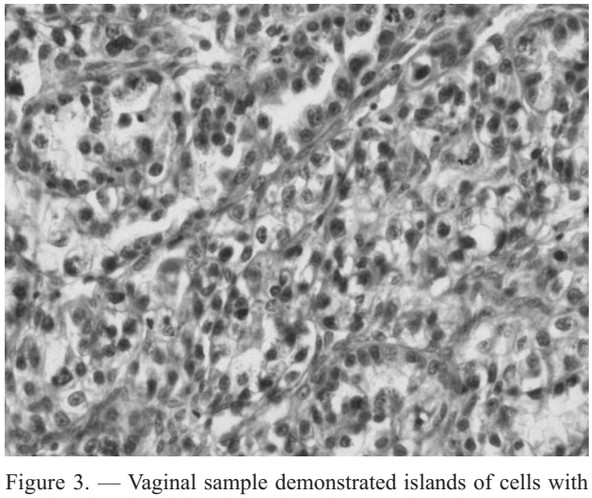

Figure 3. — Vaginal sample demonstrated islands of cells with round and oval nuclei and abundant clear cytoplasm (Hematoxylin-eosin staining ×20).

Conclusion

Although renal cell carcinoma metastasis to vagina is rare, a high degree of suspicion of a metastatic tumor should be maintained and a thorough gynecological examination should be performed in all female patients with renal cell carcinoma presenting with vaginal bleeding or mass.

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