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Case Report / Olgu Sunumu

Rare Distant Metastases of Endometrial Cancer: Simultaneous Right Kidney and Left Adrenal Gland Involvement

Endometrial Kanserin Nadir Görülen Uzak Metastazları: Eş Zamanlı Sağ Böbrek ve Sol Adrenal Bez Tutulumu

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ABSTRACT

Endometrial cancer is the most common gynecological malignancy in women. Most patients are diagnosed in the early period because of irregular vaginal bleeding. The standard surgical procedures are total hysterectomy and bilateral salpingo-oophorectomy. Although it generally has a good prognosis, some patients may develop aggressive lymph node and distant organ metastases. In this case report, the right kidney and left adrenal gland metastases that occurred simultaneously during the follow-up of a patient who underwent total hysterectomy, bilateral salpingo-oophorectomy, and pelvic lymphadenectomy for endometrial cancer will be described. There is no case reported in the literature regarding simultaneous kidney and adrenal metastasis of endometrial cancer.

Keywords: Kidney, endometrial cancer, metastatic, adrenal gland

ÖZ

Endometriyal kanser kadınlarda en sık görülen jinekolojik malignitedir. Hastaların çoğu düzensiz vajinal kanama nedeniyle erken dönemde tanı almaktadır. Standart cerrahi prosedür total histerektomi ve bilateral salpingo-ooforektomidir. Genellikle iyi prognoza sahip olmasına rağmen bazı hastalarda agresif seyrederek lenf nodu ve uzak organ metastazları görülebilir. Bu olgu sunumunda da endometriyal kanser nedeniyle total histerektomi, bilateral salpingo-ooforektomi ve pelvik lenfadenektomi uygulanan hastanın takiplerinde eş zamanlı ortaya çıkan sağ böbrek ve sol adrenal gland metastazı incelenecektir. Literatürde endometriyal kanserin eş zamanlı böbrek ve adrenal metastazı ile ilgili bugüne kadar bildirilmiş bir olgu bulunmamaktadır.

Anahtar Kelimeler: Böbrek, endometrial kanser, metastaz, sürrenal

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INTRODUCTION

Endometrial cancer is a common gynecological malignancy that is typically associated with a favorable prognosis when detected at an early stage. However, metastatic spread can occur, involving regional lymph nodes, peritoneum, and distant organs.[1] Renal and adrenal involvement as metastatic sites is exceptionally rare and poses diagnostic challenges, necessitating comprehensive evaluation to determine the most appropriate therapeutic interventions. This case report documents the atypical presentation of metastatic endometrial cancer in the adrenal and renal glands and underscores the importance of thorough post-treatment surveillance.

CASE REPORT

A 46-year-old woman with a history of endometrial cancer presented to our center following total abdominal hysterectomy and bilateral salpingo-oophorectomy performed one year ago. The patient was diagnosed with type 2 clear cell endometrial cancer with pelvic lymph node and ovarian metastasis. The tumor infiltrated more than ½ of the myometrium, had a polypoid and

infiltrative pattern, lymphovascular invasion was present, and perineural invasion was not observed. The tumor also infiltrated the endocervix. Adjuvant chemotherapy and radiotherapy were administered as per the standard guidelines. During the routine follow-up, a contrast-enhanced magnetic resonance imaging (MRI) scan incidentally revealed a 24 14 mm solid mass in the left adrenal gland and a 1 cm solid mass at the lower pole of the right kidney. These findings raised the suspicion of metastatic involvement in the adrenal and renal glands. Further assessment using positron emission tomography/computed tomography (PET/CT) demonstrated intense FDG uptake in both masses, supporting the likelihood of metastatic spread. Considering the radiological findings and potential metastatic nature of the masses, the patient underwent an open transabdominal approach with a chevron incision. Simultaneous right partial nephrectomy and left suprarenalectomy were performed to completely excise the suspicious lesions. Post-surgery, the patient was closely monitored for surgical recovery and potential complications. Histopathological examination of the resected specimens confirmed the presence of metastatic masses originating from the endometrial cancer. The adrenal and renal tissues displayed infiltration by tumor cells with characteristic morphological features consistent with endometrial carcinoma. Immunohistochemical staining further supported the diagnosis, revealing positive markers for estrogen and progesterone receptors and cytokeratin. In view of the confirmed diagnosis of metastatic endometrial cancer, adjuvant chemotherapy tailored to the patient's specific tumor profile and disease stage was promptly initiated. Close follow-up was scheduled to monitor treatment response, assess disease progression, and address potential complications. The patient's chemotherapy treatment has been completed, and her treatment-free follow-up continues. No recurrence was detected on the last PET/CT (Figure 1). Informed consent was obtained from the patient.

DISCUSSION

Endometrial cancer is a common malignancy of the female reproductive system that primarily affects postmenopausal women. The majority of endometrial cancer cases are typically detected in the early stages according to the FIGO criteria, and the most prevalent histological subtype is endometrioid endometrial carcinoma.[2] Patients in this category are generally considered to have a low risk profile, enjoying a 5-year survival rate of approximately 95%. However, when regional or distant metastases occur, survival rates markedly decline to 69% and 13%, respectively. For patients with endometrioid cancer in FIGO stages 2-3 or those with non-endometrioid cancer, the risk of disease recurrence is notably elevated.[3] Although most cases are diagnosed at an early stage and have a favorable prognosis, distant metastasis remains a significant challenge in the management and treatment of this disease. One of the most notable aspects of distant metastasis in endometrial cancer is its relatively low frequency compared with other gynecologic malignancies, such as ovarian or cervical cancer.[4] However, this should not undermine its clinical importance because the prognosis dramatically worsens when metastasis occurs. The most common sites of distant metastasis in endometrial cancer are the lungs, liver, bone, and distant lymph nodes. Understanding the mechanisms underlying this metastatic spread is crucial for developing targeted therapies and improving outcomes.

The molecular landscape of endometrial cancer has provided valuable insights into its metastatic potential. The two main histological subtypes, type 1 and type 2, differ not only in their clinical presentation but also in their genetic alterations. Type 1 tumors, which are typically estrogen-driven and characterized by mutations in PTEN and KRAS, tend to have a more favorable prognosis and a lower propensity for distant metastasis. In contrast, type 2 tumors, often characterized by TP53 mutations, are more aggressive and prone to distant spread.[5] The genetic heterogeneity within endometrial cancer underscores the need for tailored treatment approaches.

One critical area of research in understanding distant metastasis is the role of the tumor microenvironment. Tumor-stromal interactions, immune evasion, and angiogenesis play pivotal roles in facilitating metastasis. Investigating the cross-talk between tumor cells and their microenvironment may reveal novel therapeutic targets and strategies to prevent or treat distant metastasis.[6] Immunotherapies, in particular, hold promise in this

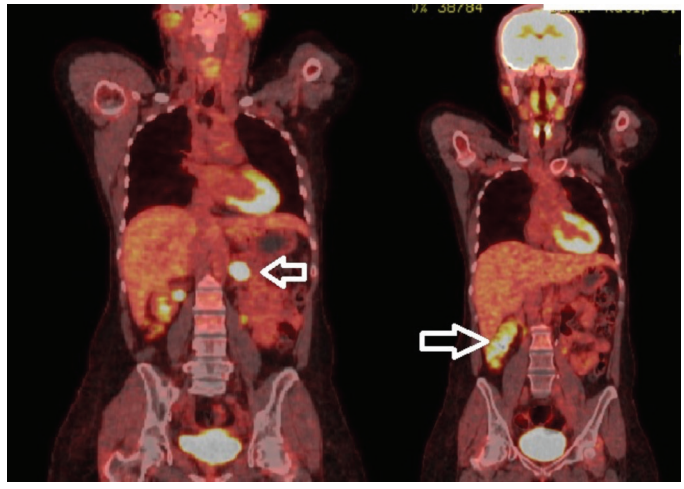

Figure 1. Positron emission tomography/computed tomography

context, given their success in treating various cancers by enhancing the body's immune response against tumor cells.

The clinical management of patients with distant metastatic endometrial cancer remains challenging. Treatment options are often palliative, aiming to relieve symptoms and prolong survival. Systemic chemotherapy, hormonal therapy, and targeted therapies are commonly employed, but their efficacy varies depending on the molecular subtype and extent of metastasis. Personalized treatment approaches, guided by genetic profiling of the tumor, represent a step toward improving outcomes for these patients.[7]

Early detection of metastasis is another critical aspect of endometrial cancermanagement. Routine surveillance, including imaging studies and biomarker monitoring, should be considered in patients at high risk of metastasis, such as those with type 2 tumors. Advances in imaging techniques, such as PET and MRI, have improved our ability to detect metastatic lesions at an earlier stage, potentially allowing for more effective interventions.

In a study published in 2020, 69.027 patients diagnosed with endometrial cancer between January 2010 and December 2015 were examined in terms of distant metastases and survival. Accordingly, the organ with the most distant metastasis was the lung (1.5%). followed by liver (0.8%), bone (0.6%), and brain (0.2%) metastases. In multi-site metastasis, the survival time of the patients was very short, with both 3-year overall survival and 0% specific survival. In addition, overall survival and cancer-specific survival decreased with an increase in the metastasis site.[4]

Adrenal metastasis of endometrial cancer was first reported in the literature in 1975 by Nakano and Schoene.[8] There are 11 case reports on adrenal metastasis of endometrial cancer in the English literature.[9]

In the study by Kurra et al.[10] in 2013, the regions where endometrial cancer metastasized were examined. According to this study, the most common intra-abdominal organ with metastasis was the liver (7%). It has been stated that the adrenal gland is also a rare site of metastasis.

In a case report written by Gupta et al.[11] in 2003, kidney metastasis of endometrial cancer was reported. In another case report dated 2019, simultaneous paraaortic lymph node and kidney metastases of endometrial cancer were reported.[12]

Synchronous kidney and adrenal metastases of endometrial cancer were not observed in any of the case reports reported in the literature.

Metastatic involvement of adrenal and renal glands in endometrial cancer is an exceedingly rare clinical entity. The pathogenesis of such distant metastases remains elusive, and further research is warranted to elucidate the underlying mechanisms driving this unique pattern of spread. Early detection of metastatic disease through vigilant surveillance and timely initiation of appropriate therapeutic interventions are crucial for optimizing patient outcomes in these challenging cases.

CONCLUSION

This case report describes an unusual presentation of metastatic endometrial cancer with synchronous involvement of the adrenal and renal glands. A multidisciplinary approach involving gynecologic oncologists, urologists, and medical oncologists is essential to comprehensively manage and tailor treatment strategies in these complex scenarios. Further studies are needed to explore the factors contributing to this rare pattern of metastasis, ultimately guiding the development of targeted therapies and improving patient prognosis.

Ethics

Informed Consent: Informed consent was obtained from the patient.

Peer-review: Internally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: E.M.Y., Concept: M.D., K.D., S.N.G., Y.A., Design: M.D., E.M.Y., Y.A., Data Collection or Processing: M.D., K.D., Analysis or Interpretation: E.M.Y., S.N.G., Literature Search: M.D., K.D., Writing: M.D.

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