Case Report

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Unusual Metachronous Renal Pelvis and Colon Metastases in a Patient with Endometrial Cancer: A Case Report

신우와 대장에 발생한 이시성 자궁내막암 전이: 증례 보고

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Endometrial cancer commonly metastasizes to the pelvic and para-aortic lymph nodes, vagina, peritoneum, and lungs. Unusual sites of metastasis include the bone, brain, abdominal wall, muscles, and intra-abdominal organs. To our knowledge, there have been no documented cases of synchronous or metachronous metastasis of endometrial cancer to the renal pelvis or colon. Metastatic tumors in the renal pelvis and colon indicate nonspecific radiological findings, making them difficult to distinguish from primary tumors. We describe a case of a 55-year-old female previously treated for endometrial cancer, who was subsequently found to have metastatic masses in the renal pelvis and colon. The two masses were initially misidentified as primary urothelial carcinoma and colon adenocarcinoma.

Index terms Endometrial Cancer; Metastasis; Metachronous Neoplasms

INTRODUCTION

Endometrial cancer is the fourth most common cancer among females and the most prevalent gynecological malignancy (1). According to the 2023 staging system, the histological tumor types of endometrial cancer are classified into endometrioid carcinoma, serous carcinoma, clear cell carcinoma, mixed carcinoma, undifferentiated carcinoma, carcinosarcoma, other unusual types, and gastrointestinal mucinous-type carcinoma (2). Endometrioid carcinoma accounts for most cases.

Local recurrence and distant metastasis are growing concerns for patients after treatment. Typical sites of endometrial carcinoma metastasis are the pelvic and para-aortic lymph nodes, vagina, peritoneum, and lungs. Atypical sites of metastasis include bones, brain, abdominal wall, muscles, and intra-abdominal organs. The most frequently involved intra-abdominal organ is the liver, followed by the adrenal

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glands and spleen (3). Endometrial cancer rarely metastasizes to the renal pelvis or colon, and to our knowledge, there are no reported cases of synchronous or metachronous metastasis of endometrial cancer to these sites.

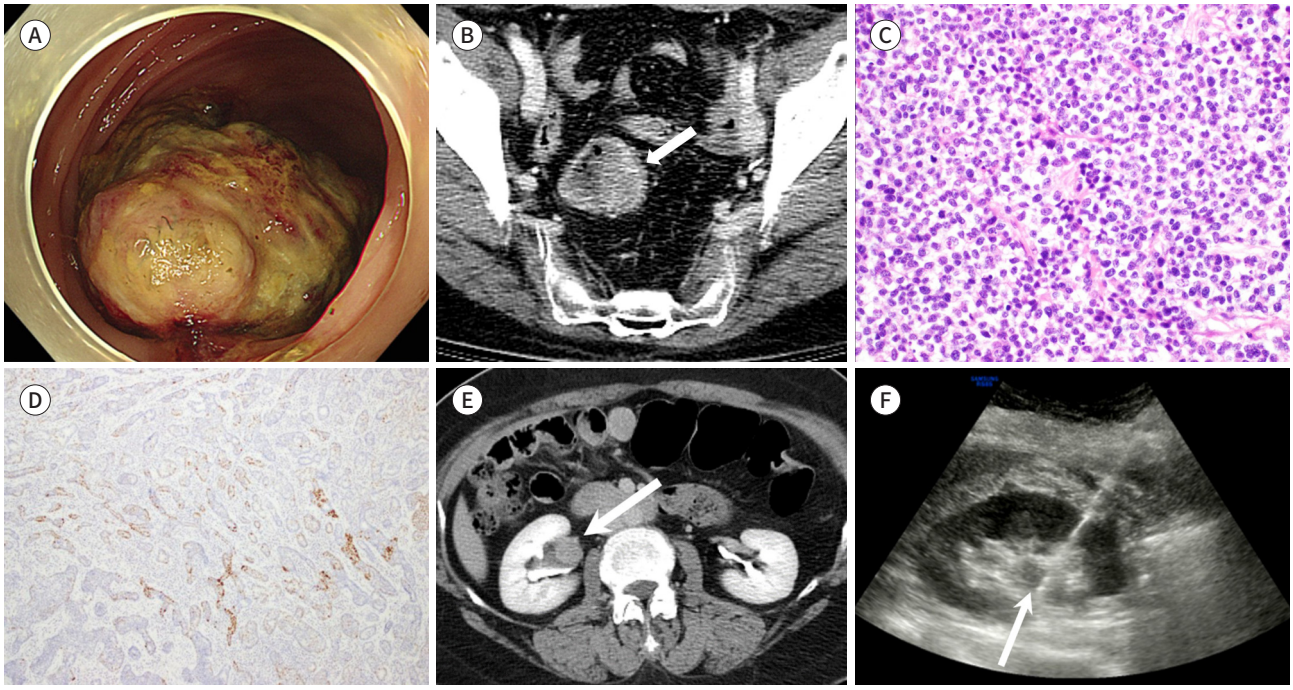
We describe the case of a 55-year-old female treated for endometrial cancer who was subsequently diagnosed with metastatic renal, pelvic, and colon masses. The mass initially mimicked primary urothelial carcinoma and colon adenocarcinoma.

CASE REPORT

A 55-year-old female presented with nonspecific left lower quadrant abdominal discomfort for 6 months. She had a medical history of FIGO stage IIIc endometrioid adenocarcinoma of the endometrium (2009 FIGO staging system). Five years prior to this presentation, she had undergone laparoscopy-assisted vaginal hysterectomy, bilateral salpingo-oophorectomy, and laparoscopic pelvic and para-aortic lymphadenectomy with adjuvant carboplatin/paclitaxel chemotherapy.

Colonoscopy revealed a large irregular ulcerative mass in the sigmoid colon (Fig. 1A), and subsequent abdominal CT showed a 4.0 cm irregular enhancing mass in the lumen of the sigmoid colon, with several enlarged lymph nodes along the draining vessel (Fig. 1B). The se-

Fig. 1. Characteristics of the unusual metachronous renal pelvis and colon metastases in a 55-year-old female.
A. Sigmoidoscopy reveals a large fungating mass in the sigmoid colon.
B. Axial contrast-enhanced CT shows a non-circumferential irregular mass in the sigmoid colon (arrow) with pericolic infiltration.
C. Histopathology examination reveals atypical neoplastic cells with poor differentiation (hematoxylin & eosin stain, ×400).
D. The tumor cells stain positive for estrogen receptors, suggestive of metastatic endometrioid adenocarcinoma (×100).
E. Axial contrast-enhanced CT image in the excretory phase shows a round circumferential enhancing mass in the right renal pelvis (arrow), causing mild hydronephrosis in the right kidney.
F. In the ultrasonography-guided biopsy, the mass presents as a hypoechoic mass within the right renal pelvis (arrow).



rum cancer antigen 125 (CA-125) level at presentation was 4.4 U/mL (normal range: 0–35 U/mL), and the carbohydrate antigen 19-9 (CA 19-9) level was 10.6 U/mL (normal range: 0–39 U/mL). As the mass was observed as an ulcerative intraluminal mass on colonoscopy and CT and given the rarity of colonic metastasis of endometrial cancer, the first diagnostic impression was primary sigmoid colon adenocarcinoma with regional lymph node metastases.

Pathological examination of the colonoscopy biopsy specimen revealed a poorly differentiated carcinoma with estrogen receptor positivity, suggestive of metastatic endometrioid adenocarcinoma (Fig. 1C, D). The patient underwent laparoscopic anterior resection with lymph node dissection. The final pathological report revealed that the mass in the sigmoid colon was a metastatic endometrioid adenocarcinoma. None of the 27 dissected regional lymph nodes were metastatic.

The patient had been admitted to our hospital 8 months before the present investigation for postoperative follow-up and further evaluation of the abnormality via scheduled abdominal CT examination. At that time, the patient did not report any specific symptoms. Serum CA-125 was 8.2 U/mL, which was within the normal range. Abdominal CT revealed a 0.8 cm round, well-defined soft tissue mass in the right renal pelvis (Fig. 1E). The mass was homogeneously enlarged, causing mild hydronephrosis. The tumor was considered a urothelial carcinoma, the most common tumor found in the renal pelvis, owing to its intraluminal exophytic growth and the rarity of endometrial cancer metastasis to the renal pelvis, ureter, or kidney.

The patient underwent subsequent diagnostic retrograde intrarenal surgery with ureter washing. Pathological examination revealed atypical cell proliferation with necrosis, most likely suggestive of a poorly differentiated carcinoma. Cytology from the ureter washing revealed atypical cell clusters with neuroendocrine nuclear features suggestive of an epithelial malignancy. Owing to the ambiguity of the pathological diagnosis, an ultrasonography-guided biopsy was performed to obtain additional tissue. On ultrasonography, the tumor appeared as a hypoechoic, round, solid mass (Fig. 1F). Pathological examination of the core needle biopsy specimen confirmed metastatic endometrioid adenocarcinoma, and subsequent PET-CT showed high fluorodeoxyglucose uptake (maximum standardized uptake value [SUVmax], 9.97) in the mass. The patient underwent a laparoscopic radical right nephrectomy. In addition, diagnostic omentectomy and appendectomy were performed because of the high initial FIGO stage and the presence of new metastatic lesions in the right kidney. The final pathology report identified metastatic endometrioid carcinoma in the renal pelvis (Fig. 1C, D). No metastatic lesions were observed in the omentum or appendix. A retrospective analysis of abdominal CT and PET-CT scans did not reveal a sigmoid colon lesion, which was later diagnosed.

This report was approved by the Institutional Review Board of our institution, which waived the requirement for informed consent (IRB No. 2024-06-020).

DISCUSSION

The most common site of metastasis for endometrial cancer is the intra-abdominal space. Metastasis to intra-abdominal organs is relatively rare, and metastasis to the renal pelvis or ureter and colon is exceedingly rare with only a few case reports documented. Sahl et al. (4)

reported a case of ureteral metastasis in a 68-year-old female patient with endometrial serous carcinoma who underwent surgery, chemotherapy, and vaginal brachytherapy. The authors suggested that metastasis to the upper urinary tract occurs via hematogenous spread. On the other hand, Jauregui et al. (5) reported a case of colon metastasis of endometrial cancer that mimicked primary colon cancer. Histology revealed a high-grade, poorly differentiated endometrioid adenocarcinoma, and the initial stage was FIGO stage IIIB. However, to our knowledge, no cases of simultaneous metastasis to the renal pelvis, ureter, or colon have been reported.

In a previous report, several risk factors for the recurrence of endometrial cancer were identified, including histological grade 3, myometrial invasion depth (>50%), age >60 years, lymphovascular invasion, and lower uterine involvement (6). In our case, histological grade 3 myometrial and lymphovascular invasions were confirmed, indicating a high risk of recurrence. Additionally, most metastases after endometrial cancer surgery occur within 3 years (7). Therefore, for patients at high risk of recurrence, even if a newly developed tumor occurs in an unusual location, the possibility of metastasis should be considered, particularly in the years following surgery.

In our case, serum CA-125 levels were not useful for differential diagnosis. This may be because the initial preoperative serum CA-125 level was not high and the sensitivity and specificity of serum CA-125 for diagnosing endometrial cancer were not high enough to exclude a diagnosis (8). Therefore, postoperative surveillance for recurrence should include not only serum tumor markers and clinical symptoms but also imaging studies.

The imaging findings of endometrial cancer metastases to the colon and renal pelvis are noteworthy, as the findings were not significantly different from those of primary colon and renal pelvic malignancies. We observed an irregular mass with an eccentric location within the colonic lumen, and a polypoid soft tissue mass within the renal pelvis. Both masses exhibited homogeneous enhancement. Another interesting feature of this case is that the metastatic tumors were intraluminal, which complicated the differential diagnosis of the tumor. Thus, given the much higher frequency of primary malignancies compared to metastases to the colon and renal pelvis, they were initially evaluated as primary cancers.

In summary, we described a rare case of metachronous metastasis of endometrial cancer to the renal pelvis and colon. The imaging findings resembled those of primary urothelial carcinoma and colon cancer, thus raising the possibility of misdiagnosis. Therefore, although this type of metastasis is rare, it is important to consider the possibility of unusual metastases, especially in patients at a high risk of recurrence.

Author Contributions

Conceptualization, L.C., K.B., K.M.; data curation, K.J., K.M.; formal analysis, L.C.; investigation, K.J.; resources, L.C.; supervision, L.C., K.B., K.M.; validation, L.C.; writing—original draft, K.J.; and writing—review & editing, L.C.

Conflicts of Interest

The authors have no potential conflicts of interest to disclose.

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신우와 대장에 발생한 이시성 자궁내막암 전이: 증례 보고

김주인 · 이철민* · 강보경 · 김미미

자궁내막암은 흔히 골반 및 대동맥 주위 림프절, 질, 복막, 그리고 폐로 전이된다. 드물게 비정형적으로 뼈, 뇌, 복벽, 근육, 그리고 복강 내 장기로 전이된 증례가 보고되었다. 하지만 자궁내막암이 신우나 결장으로 동시에 혹은 시간적 간격을 두고 전이된 사례는 보고된 바가 없다. 신우와 결장의 전이 종양은 영상학적 소견이 비특이적이고 원발종양과 구분이 어렵고 위 증례에서도 각각의 종양이 원발성 요로상피암과 결장선암으로 오인되었다. 저자들은 자궁내막암으로 치료를 받은 환자에서 신우와 결장에서 각각 전이성 종양이 발견된 55세 여성의 사례를 경험하여 내시경 및 영상, 병리학적 소견을 서술하고자 한다.

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