

A case of synchronous double primary vulvar cancer and PET-negative renal cell carcinoma

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We report a case of synchronous double primary vulvar cancer and renal cell carcinoma. Kidney mass was incidentally detected during preoperative evaluation of vulvar cancer, and was finally confirmed as a renal cell carcinoma. Although the initial result of 18F-fluorodeoxyglucose positron emission tomography was negative for a renal malignancy, nephrectomy was performed under the radiological and urologic impression of renal cell carcinoma which was supported by computerized tomography findings. Histological analysis finally confirmed a renal cell carcinoma. This is the first case report of synchronous double primary vulvar cancer and renal cell carcinoma, which emphasizes multidisciplinary approach to unexpected lesions when the clinical experience of one specialist is limited.

Key Words : Vulvar cancer, Renal cell carcinoma, PET

INTRODUCTION

As the use of computerized tomography (CT) in preoperative investigation of patients with gynecologic malignancy has been widely used, the frequency of incidental detection of other abdominal or pelvic mass increased. However, since the incidence of vulvar cancer itself is very low,¹ synchronous double primary cancers involving vulva and other organ is extremely rare.

Even though the most cases of renal cell carcinoma (RCC) are discovered incidentally during CT-imaging procedures for other purposes,² there is no reported case of double primary vulvar and renal cancer in the English literature. Thus far only two cases of synchronous double primary tumors involving kidney and ovary have been reported.

This report describes a case of renal cell carcinoma with negative FDG-PET finding, which was initially detected in

vulvar cancer work up process. In this case 18F-fluorodeoxyglucose positron emission tomography (FDG-PET) is conducted as well, which showed negative result for renal malignancy. This case underlines that a prudent approach is required for the non-gynecologic condition in which clinical experience of gynecologic specialist is limited.

CASE REPORT

A 54-year-old woman visited the Department of Obstetrics and Gynecology complaining of a 4.5×2.5 cm² sized ulcerative skin lesion on her right labium major. She had been medicated with oral anti-hyperglycemic agent for 4 years due to diabetes mellitus. Excision biopsy revealed a squamous cell carcinoma of vulva. During preoperative evaluation, CT showed a 2.5×2.5×2.4 cm³ sized round homogeneous hypodense lesion on the right kidney (Fig. 1A). Renal cell carcinoma was included in the list of differential diagnosis. A FDG-PET scan showed increased glucose uptake at external genitalia with no abnormal hypermetabolic lesion in other body portion including the right kidney (Fig. 1B). Radical vulvectomy with bilateral inguinofemoral lymphadenectomy was performed to as

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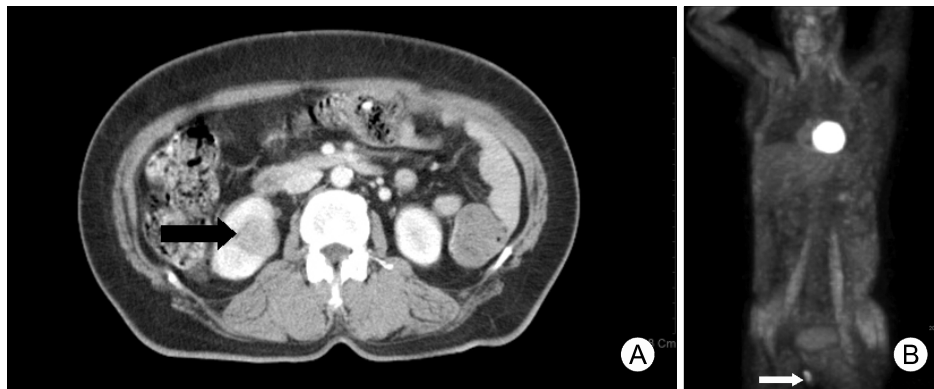


Fig. 1. (A) CT image shows a $2.5 \times 2.5 \times 2.4 \text{ cm}^3$ sized round homogeneous hypodense lesion on the right kidney (arrow). **(B)** PET scan shows that focal increased FDG uptake is noted at external genitalia with the maximal SUV of 4.4 (arrow). No abnormal hypermetabolic lesion in other body portion including the right kidney is displayed. SUV; standardized uptake value.

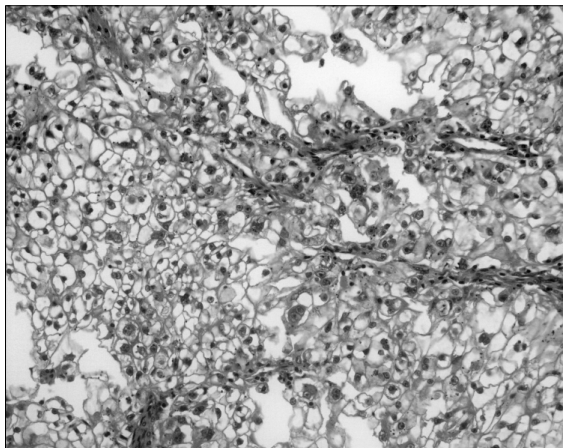


Fig. 2. Microscopic examination of the kidney mass shows renal cell carcinoma cells with clear cytoplasm which are separated by fibrous septa.

surgical treatment for the vulvar cancer. Under the suspicion of renal malignancy, right nephrectomy was also performed by urologist. On pathologic examination, the right kidney mass was diagnosed as an RCC (Fig. 2).

DISCUSSION

The use of high-technologic diagnostic modalities such as CT, MRI, and PET has become one of usual processes in evaluation of gynecologic malignancy in Korea. For that reason, incidental detection of other abdominal or pelvic

disorders has been increased as well. PET, as a functional imaging, has been employed for characterization of lesions detected by other anatomical imaging modalities; CT, MRI. However, it is cumbersome for physicians to determine a therapeutic plan in cases showing discordant results between PET and other imaging studies. Furthermore, when it comes to non-gynecologic diseases it is more difficult for gynecologists to make an appropriate decision. Here we report a case of incidentally detected kidney mass during preoperative evaluation of vulvar cancer, which was finally confirmed as a renal cell carcinoma.

It has been known that the initial diagnosis of renal mass is usually made with ultrasound, CT, or MRI.² Most cases (70%) are discovered incidentally during CT-imaging procedures for other purposes.² It was also reported that around 20% of these masses are benign tumors (eg, oncocytoma and fat-poor angiomyolipoma), 25% are indolent tumors with limited metastatic potential (eg, papillary and chromophobe carcinoma), and 54% represent the more potentially malignant conventional clear-cell carcinoma that uncommonly achieves its metastatic potential at a size of 4 cm or less.³ Although benign, indolent, and malignant renal cortical tumors can display growth over time, metastatic potential is intrinsic to the histological subtype. Around 90% of patients who present with, or later develop, metastatic renal cancer have the clear-cell

histological subtype.⁴

Renal biopsy is rarely done for a localized kidney tumor because of inaccuracy and ineffectiveness in clinical management. Surgical removal is the treatment of choice in this situation, and partial nephrectomy provides equivalent tumor control to radical nephrectomy.⁵ Partial nephrectomy is a legitimate option for tumors up to 7 cm in size, especially if they are exophytic.⁶

The role of FDG-PET in urological tumor is still under investigation with no final conclusion.⁷ Imaging of malignant renal tumors is regarded as more difficult than those of other tumors because of the renal elimination of F-18FDG.⁸ Therefore the negative FDG-PET does not exclude renal malignancy. In terms of FDG-PET sensitivity in diabetic subject, as in the current case, it has been reported that high blood glucose levels interfere with FDG uptake in malignant lesions.⁹ Although the glucose transporters are overexpressed in malignant cells, they can be saturated and the presence of excess unlabeled glucose has been shown in animal models to markedly reduce FDG uptake in tumors.¹⁰ Recently, some authors reported high sensitivity (94%) and specificity (100%) of the "Immuno-PET" using iodine-124-labelled antibody chimeric G250 (124I-cG250) overcoming the pitfall of the conventional PET in diagnosis of renal cell carcinoma.¹¹

As the radiographic modalities evolve and improve, it is not uncommon for gynecologists to encounter incidental lesions during pretreatment evaluation of gynecologic cancer patients. The case presented here has its interest in that it emphasizes multidisciplinary approach to unexpected lesions when the clinical experience of one specialist is limited.

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외음부암과 동반된 PET-음성 신세포암 1예

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부인과 악성 종양 환자의 수술 전 평가에 있어 CT, MRI, PET와 같은 최신 장비의 활용이 증가함에 따라 이 과정에서 비부인과적 질환을 우연히 발견하는 경우가 드물지 않다. 특히 신세포암의 경우 진단의 대부분이 이와 같은 우연한 발견에 의한 것으로 알려져 있다. 그러나 부인암 중 외음부암의 빈도가 매우 낮아 외음부암과 신세포암이 동반된 증례는 아직 보고된 바 없다. 본 증례는 외음부암 환자의 수술 전 평가를 위한 CT에서 발견된 신장 종괴에 대해 PET 검사 상 음성을 보였음에도 불구하고, CT 소견과 비뇨기과 협진을 통해 근치적 신장적출술을 시행하고 조직학적으로 신세포암을 확인한 경우이다.

중심단어 : 외음부암, 신세포암, 양전자단층촬영술