

## Case Report

# Skin Metastasis of Renal Cell Carcinoma

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## Keywords

Cutaneous metastasis · Skin metastasis · Renal cell carcinoma metastasis

## Abstract

Renal cell carcinoma (RCC) accounts for around 3% of all cases of skin metastasis. In these patients, solitary metastasis from RCC shows a favorable prognosis. A 68-year-old woman was found to have a right renal tumor in 2009, and the pathological diagnosis was pathological T3 and grade 3 right clear cell RCC. Left-sided RCC developed and was resected in 2018. She subsequently noticed a cutaneous nodule on her abdomen. We performed surgical resection, and the pathological diagnosis was skin metastasis of RCC. We herein report a case of skin metastasis of RCC that developed 11 years after the initial diagnosis that was successfully treated by surgical resection.

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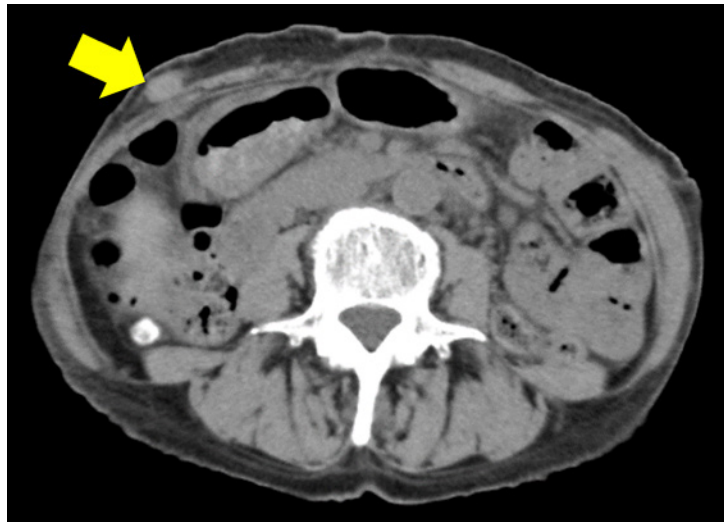
## Introduction

Renal cell carcinoma (RCC) accounts for around 3% of all cases of skin metastasis. In these patients, solitary metastasis from RCC shows a favorable prognosis. RCC is likely to result in vascular metastasis, leading to liver, lung, and bone metastasis [1].

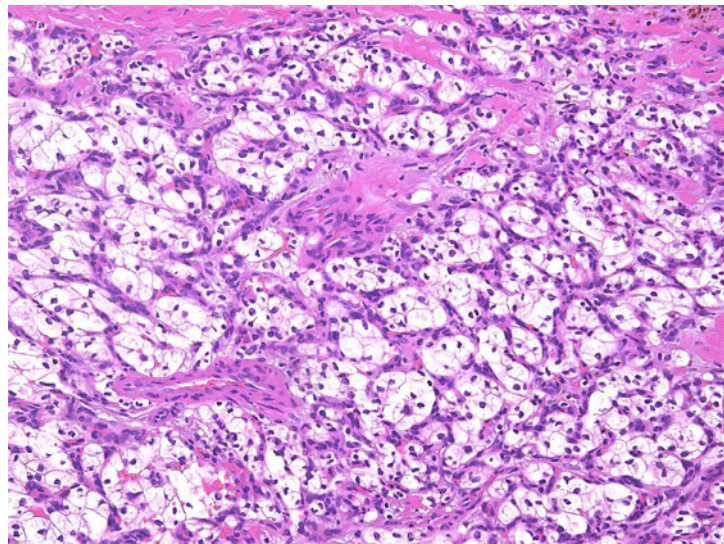
## Case Presentation

A 68-year-old woman was found to have a right renal tumor in 2009, and the pathological diagnosis was pathological T3 and grade 3 right clear cell RCC. Follow-up computed tomography (CT) detected a left renal mass in August 2018, and left nephrectomy was performed.

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**Fig. 1.** CT findings of the skin tumor.



**Fig. 2.** HE staining findings.

In June 2019, a 1.5-cm cutaneous nodule was detected on her right lower abdomen, and a biopsy revealed skin metastasis of RCC (Fig. 1). Based on this diagnosis, surgical resection of her skin metastasis was performed in October 2019. The tumor had not invaded the muscle. The final pathological diagnosis was also RCC metastasis (Fig. 2). She was free from recurrence at 5 months postoperatively.

### Discussion

RCC is the most common malignant tumor of the adult kidney, accounting for 3.8% of all new cancers [1]. Resection of localized RCC is recommended as the only treatment for a complete cure. However, up to 30% of patients undergoing curative surgery develop metastatic RCC [2,3]. In most cases, RCC is initially diagnosed without metastasis, but some cases eventually develop metastases. The most frequent metastatic sites are the liver, lung, and bone, while skin metastasis is rare, accounting for 3% in some case series [4]. The present

case showed a skin mass at scheduled follow-up CT. In addition, the size of the tumor gradually increased.

RCC skin metastasis reportedly accounts for around 3% of all skin metastatic tumors and has shown a relatively favorable outcome in solitary cases [5]. Skin metastases are classified into several patterns, including nodule pattern, inflammatory pattern, and stiffness pattern, and non-pain nodule pattern is major [6]. The present case showed a non-pain nodule pattern.

Eighty-five percent of metastatic RCC cases developed within 3 years, and the other 15% of cases were reported from 3.4 to 11.4 months from initial nephrectomy [7]. Late-relapse cases have been detected 10 years after initial nephrectomy, and a previous report showed that 16 of 18 late-relapse cases were low-grade cases of grade 1 or 2 [8]. Kishida et al. [9] reported 28 cases of RCC skin metastasis among Japanese patients. Among these patients, the median time to development of skin metastasis was 5.4 years, and 1 case with development 18 years after initial nephrectomy was reported. The present case was diagnosed as grade 2 by initial right nephrectomy in 2009 and grade 3 by left nephrectomy in 2018. The cutaneous mass developed in the same position as her initial right nephrectomy incision site, suggesting a late relapse of her right RCC.

RCC shows recurrence in many patients compared to other genitourinary cancers, and cases of late relapse are not rare, suggesting the need for long-term follow-up. Cases of solitary skin metastases in particular show a favorable outcome. Therefore, surgical resection is recommended.

## Statement of Ethics

Written informed consent was obtained from the patient for the publication of the case (including images).

## Conflict of Interest Statement

The authors declare no conflicts of interest in association with the present study.

## Funding Sources

There were no funding sources.

## Author Contributions

T.M. and T.K. drafted the manuscript. T.K., S.N., S.K., T.T., D.T., M.O., and H.U. performed the experiment. All authors have approved the final version of the manuscript.

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