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Abdominal Subcutaneous Metastasis from Sarcomatoid Renal Cell Carcinoma

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Subcutaneous metastases originating from genitourinary tract cancers are rare, especially for renal cell carcinomas. The most common sites for such metastases are the lung, liver, brain and bone. Subcutaneous metastases are considered ominous. We report a 78-year-old man who presented with a huge solitary mass over the suprapubic region of the abdominal wall. He had been diagnosed as a renal cell carcinoma with multiple pulmonary metastases. Treatment for the mass consisted of wide excision and continuing systemic interferon therapy. The patient died three months after the surgery, following a rapid local recurrence and general deterioration.

Key words: subcutaneous, metastasis, sarcomatoid, renal cell carcinoma

INTRODUCTION

Renal cell carcinomas (RCCs) are known for a propensity for widespread metastases and a wide range of survival rates[1-2]. They can spread into adjacent structures by direct extension and can invade local or distant sites by lymphatic, hematogenous or lymphohematogenous pathways[3]. The most common sites for metastases are the lungs, lymph nodes, bone and brain. Subcutaneous metastases are uncommon but typically herald coexistent disseminated disease, and have a poor prognosis for the patient[2]. Here we report a subcutaneous metastatic RCC in the abdominal wall in a 78-year-old man, who had received radical nephrectomy plus systemic interferon therapy.

CASE REPORT

A 78-year-old man was admitted to our institution in November 2006 with a huge subcutaneous mass over the suprapubic region. He was a known victim of a conventional RCC, with multiple pulmonary metastases and bony metastases upon diagnosis (cT2N0M1, stage IV, ECOG: 1), but no subcutaneous metastases was demonstrated. He had received radical nephrectomy via anterior subcostal incision approach and systemic interferon-alfa-2a 8 months before admission. The new abdominal mass grew rapidly and became easily palpable within two months. Physical examination revealed a smooth, fixed, non-tender mass over the midline suprapubic region, with tense overlying skin. Computed tomography scans showed a well-demarcated, lobulated mass lesion (6.25 × 5.7 cm) over the suprapubic region between the skin and the peritoneum (Fig. 1).

Laboratory studies showed the patient to have normocytic anemia as well as elevated blood urea nitrogen and creatinine levels. A chest X-ray revealed multiple nodular patchy opacities over both lung fields, which were unchanged when compared with films taken half an year ago. Wide excision of the subcutaneous abdominal mass was performed. We did not plan a preoperative needle biopsy. The surgical specimen consisted of a tumor mass measuring 8.0 × 5.5 × 5.5 cm weighing 110 g (Fig. 2). Histopathology showed a sarcomatoid RCC with focal tumor necrosis and hemorrhage. Immunohistochemical stain revealed positive for CK-18, negative for CK-7, positive for vimentin and EMA. The nature of the tumor as an RCC metastasis was confirmed.

Local recurrence was found one month after the wide excision. The patient's general condition also deteriorated quickly, and even other salvage systemic therapy could not be initiated. He received another operation but the attempt to excise the local recurrent masses failed. These local recurrences were found to be invading the abdomen rapidly, and caused frequent spontaneous bleeding episodes . Radiotherapy and wound packing with gauze including epi-

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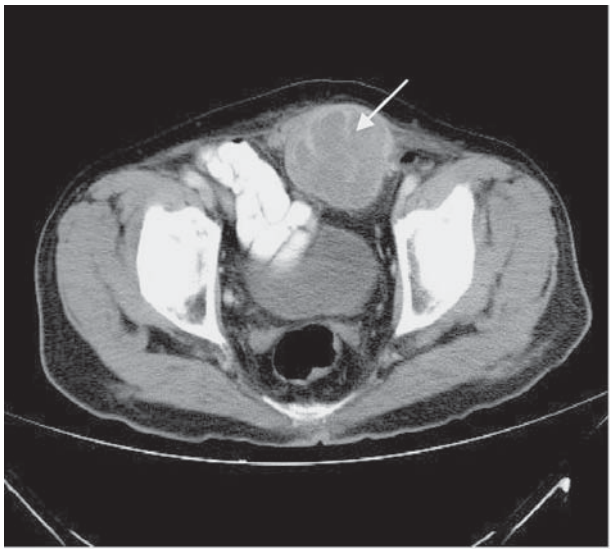

Fig. 1 Computed tomography with contrast enhancement showed heterogeneous, lobulated mass with central low attenuation beneath the abdominal wall. (white arrow)

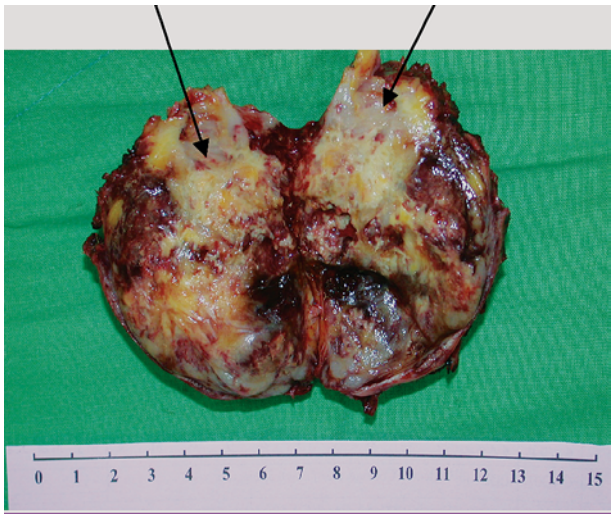

Fig. 2 Bi-valved gross specimen of the abdominal wall metastasis. Diffused areas of necrosis were shown. (black arrows)

nephrine was performed to stop bleeding. But it was always failed. The patient died three months after our intervention.

DISCUSSION

RCCs account for 2% to 3% of malignant tumors and occur usually in the fifth to seventh decades of life[2]. WHO has published a classification of the varieties of RCC. Five major histological patterns are as follows: clear cell, papillary, chromophobic, oncocytic, and collecting duct types. Etiological factors include ionizing radiation, hormonal factors, urban dwelling, the use of tobacco and tobacco products (including chewing tobacco), and the presence of von Hippel—Lindau disease, in which polycystic kidneys are prominent features[1]. Different clinical symptoms have been observed in the presentation of RCCs. These days, many more small tumors are found incidentally in Taiwan thanks to adult health screening that includes abdominal sonography. Computerized tomography scans, intravenous pyelography, magnetic resonance imaging and renal arteriography assist in differentiating the nature of renal masses[1]. Besides, cytology of urine specimen sediments may be a useful and simple tool to exclude malignant tumors, but final reports of cytological studies among affected patients may not show positive urothelial cancer cells.

RCCs are a heterogeneous group of tumors, and one-third of patients already had distant metastases at the time of diagnosis[7]. Metastases to the lungs, lymph nodes and bones are the most frequent[2-6], but are rare in subcutaneous tissues. The incidence of cutaneous metastases from the kidney has been reported as 3.4% . The Most common sites for cutaneous metastases from renal cell carcinoma are the face and scalp, followed by the chest and abdomen[9]. There are four possible mechanisms of metastatic dissemination to the skin: direct invasion from an underlying neoplasm; implantation from an operative scar; spreading through the lymphatics; or hematogenously[8]. The abdominal skin appears to be the most common site for all genitourinary cutaneous matastasis, following dissemination by cutaneous lymphatics or vessels. Such subcutaneous metastases typically imply a very poor prognosis and short survival[8]. This is true in our previous experience, as well as in this case: the patient died three months after surgery to excise the subcutaneous metastasis.

We blamed the patient's short survival on both advanced stage and an unfavorable histological pattern. Sarcomatoid RCC is an uncommon variant of renal malignancy, which typically presents at an advanced stage, and, with rare exceptions, is associated with rapid progression and fatal outcome[5]. Mian et al.[5], collected 108 cases of sarcomatoid RCCs from 1987 to 1998; they demonstrated that sarcomatoid RCCs were localized to the kidney in 25

patients (23%), whereas metastases were present in 83 (77%). The median overall survival of all patients was nine months. Sarcomatoid RCC is locally aggressive and potentially metastatic, and is associated with poor prognosis. Surgical resection alone does not seem to affect the clinical course significantly, because these tumors are usually metastatic or locally advanced at the time of diagnosis[4]. RCCs respond poorly to chemotherapy and radiotherapy. Cangiano et al.[4] reviewed 31 cases of patients diagnosed with sarcomatoid RCC. They noted that patients who were treated with aggressive surgical resection and interleukin-2-based immunotherapy showed significantly better survival than those who received other therapy.

For this patient, even though a complete excision was performed in combination with systemic interferon therapy, recurrence and death came very shortly after the treatment. Any benefit of surgery for this patient was therefore doubtful. However, it was also impossible to neglect such a huge mass, so treatment was challenging.

Subcutaneous metastases from RCCs are uncommon manifestations of renal cell carcinoma. The prognosis of such widespread or advanced-stage RCCs is very poor, and cure is rarely possible, so it is our duty to make every effort to improve the quality of life for such patients.

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