A case of isolated bilateral renal metastases from carcinoma of the lung

M. CEM UZAL, ZAFER KOÇAK, KAZIM UYGUN, ŞEMSİ ALTANER, SERDAR GÖZEN, ERCÜMENT ÜNLÜ

Trakya University Hospital, Departments of 1Radiation Oncology, 2Medical Oncology, 3Pathology, 4Urology and 5Radiology, Edirne-Turkey

ABSTRACT
Renal metastases in patients with history of cancer may mimic primary renal tumors. When the kidneys are the only known pathological sites in patients with locally controlled disease, the differentiation of renal metastases and primary renal cell carcinoma may be very difficult clinically and radiologically. A case of lung carcinoma developing isolated bilateral renal metastases that was recognized ante mortem is described. [Turk J Cancer 2004;34(2):81-84]

INTRODUCTION
Clinically recognised metastases to the kidney from lung carcinoma are rare despite the fact that renal metastases from lung primaries are frequent at post mortem examination (1). Most patients have metastatic tumor in the other locations besides the kidney. However, if the patient has no evidence of primary disease progression and/or of widespread metastases elsewhere in the body, the new renal mass is equally likely to be a renal cell carcinoma or a metastasis and the differentiation is impossible without histopathological confirmation (2).

We describe a case of lung carcinoma developing isolated bilateral renal metastases that was recognized ante mortem while his primary tumor was in remission.

CASE REPORT
A 51 year-old man, a life-long heavy smoker, presented with 1-month history of left flank pain. Three months earlier he had undergone right upper lobectomy for adenocarcinoma of the lung (T3N1M0) following preoperative radiotherapy. Physical examination revealed right and left flank tenderness on percussion without a palpable mass. Hematological laboratory tests were normal except for hematocrit level (30.1%). The urine was positive for protein and microscopic hematuria.
Isolated Renal Metastases from Carcinoma of the Lung

Direct urinary system graphy and intravenous urography showed no abnormality. Urine cytologic examination result was negative. The patient was then evaluated with abdominal CT scan, which showed bilateral renal masses (Figure 1A and B). Since there were no other findings on CT scan of the abdomen and the primary tumor was in remission, it was impossible to distinguish an incidental renal cell carcinoma from renal metastases on the basis of radiologic studies alone. Therefore, left renal biopsy under ultrasound guidance was performed and affirmed the diagnosis of renal infiltration by adeno carcinoma of the lung (Figure 2A and B).

With the diagnosis of metastatic lung carcinoma, he received six cycles of cisplatin plus vinorelbine. Follow-up CT scan showed no change in size of the lesions. But he is still alive without progression 7 months after the diagnosis of renal metastases.

Fig 1(A,B). (A): Abdominal CT scan reveals a large localized area of diminished attenuation in the anterior margin of lower pole of the left kidney, (B): A smaller similar defect is seen in the lateral aspect of mid-portion of the right kidney

Fig 2 (A,B). Histology of the primary lung tumor (A) and the secondary renal tumor (B). (A): The primary tumor is constituted by adenomatous islands surrounded by malignant epithelium in a fibrous stroma (H&E, x200), (B): The metastatic lesion is formed by adenomatous structure similar to the primary tumor but malignant cells seem to have more hyperchromatic nuclei than the primary ones (H&E, x200)
DISCUSSION

The kidney is a rare site of metastatic disease from primary tumors of the lung and is the fifth most common site of metastases in the body after lung, liver, bone and adrenals (3). Metastatic renal disease is seldom clinically identified because the symptoms of pain and hematuria occur in only 20% of patients (3,4).

Excluding lymphoma, the most common primary tumor that metastasizes to the kidney is lung carcinoma. Olsson (5) reported that 20 percent of patients dying of lung cancer had renal metastases, 40 percent of which were bilateral. However, 10 percent of lung cancers are synchronously associated with hypernephroma (6).

Metastases from a primary tumor treated previously may mimic renal tumors. This is especially the case when the kidneys are the only known metastatic site and the primary tumor is in remission as seen in the current case. Among patients with cancer metastatic to the kidney, isolated renal metastases occur in only 10% of cases (2). But in another study by Becker (1), in none of 13 patients with lung cancer metastatic to the kidney was the renal lesion the only evidence of metastases.

Pagani (7) found that among six patients with pre-existing nonlymphomatous tumors in which a new renal mass subsequently developed, five had renal cell carcinoma. This was at variance with Choyke et al.’s (2) findings, in which renal metastases outnumbered second renal primary tumors by approximately 4:1. This difference may be explained by patient selection. In the setting of advanced metastatic disease, a new renal mass is more likely to be metastatic in origin and pathologic proof for the renal lesion may not be necessary. However, when the primary tumor is in remission or is discovered synchronously, the new renal mass is equally likely to be a renal cell carcinoma or a metastasis. So, an important distinction must be made between renal metastases and a second primary renal cell carcinoma occurring in patients with a history of cancer. Therefore, especially in the absence of other metastatic lesions, the histopathologic diagnosis of the renal lesion by percutaneous needle biopsy becomes necessary to avoid needless surgery (3).

An abdominal CT scan is the most accurate method to screen for secondary renal tumors. But the appearance of renal metastasis on CT may be mimicked by renal cell carcinoma, transitional cell carcinoma, pyelonephritis, or phlegmon (8). Metastases are commonly small, multicentric, and bilateral, but less than 2% of renal cell carcinomas may also display this pattern (2).

Despite the fact that treatment of secondary tumors of the kidney is unsatisfactory, the presence of renal metastases should not always imply a poor prognosis. Randomised trials have shown that cisplatin-based chemotherapy produces modest benefits in short-term survival compared to supportive care alone in patients with metastatic pulmonary carcinoma. Patient with good performance status and a limited number of sites of distant metastases have superior response and survival when given chemotherapy as compared to other patients (9). The current patient is still alive with stable disease 7 months after the diagnosis of renal metastases.

Renal metastases in patients with history of cancer may mimic renal tumors. This should be taken into consideration in the differential diagnosis of isolated renal masses even in patients with locally controlled disease. In order to avoid needless surgery in such cases fine needle aspiration biopsy should be performed and chemotherapy may be the treatment of choice for these metastatic patients.
References