ASIAN JOURNAL OF PHARMACEUTICAL AND CLINICAL RESEARCH

INNOVARE ACADEMIC SCIENCES
Knowledge to Innovation

Vol 9, Issue 1, 2016

ISSN - 0974-2441

Case Report

FINGER METASTASES IN RENAL CELL CARCINOMA: A CASE REPORT

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Received: 31 August 2015, Revised and Accepted: 10 October 2015

ABSTRACT

A 46-year-old man with a history of anorexia, weight loss, and pain in the left side of the abdomen was visited the outpatient department. Per abdomen examination was soft, non-tender, and no organomegaly. Contrast-enhanced computed tomography-scan abdomen showed heterogeneous mass located in the upper and the middle pole of the left kidney. The probable clinical diagnosis was a left renal mass with metastasis to lung. The histopathology of the renal mass showed a clear cell carcinoma. Confirmed diagnosis was metastatic renal cell carcinoma. The patient was treated with chemotherapy with sunitinib malate. After the completion of the second cycle, subcutaneous nodules appeared on the patient's body with swelling of all the fingers and toes, and there was bleeding from the left little finger.

Keywords: Renal cell carcinoma, Sunitinib, Finger metastases.

INTRODUCTION

Renal cell carcinoma (RCC, also known as Grawitz tumor or adenocarcinoma) is a kidney cancer. RCC accounts for 85% of all kidney tumors [1]. RCC was reported more frequent in younger people in India. In the same study, one-third of the patients were <50 years of age and with relatively higher mean tumor size of 8.08 cm. Younger patients of <39 years of age showed relatively lower survival rates [2]. RCC may present with diverse range clinical manifestation. Unsuspected cases account more in RCC. After lung, RCC involves skeleton; the second most common site for metastases [3].

In the present case study, we report a case of acrometastasis.

CASE REPORT

A 46-year-old male presented to our outpatient department in July 2009 with complaints of pain in the left side of the abdomen since 3 months duration. The pain was located in the left flank region and was non-radiating dull aching. There was no history of any bowel and bladder disturbance or any hematuria. However, there was an associated history of anorexia and weight loss of 6 kg over the last 6 months. There was no history of medical or surgical illnesses. He consumed a pack of cigarettes every day since the past 10 years and was also a social ethanol consumer.

On examination

The patient is averagely built and nourished, conscious, co-operative, and well oriented. His vitals were normal. Per abdomen examination: Soft, non-tender, and no organomegaly. No renal angle fullness or tenderness. Rest of the systemic examination was normal investigations: Contrast-enhanced computed tomography (CT)-scan abdomen: Heterogeneous mass 12.2 cm × 7.7 cm located in the upper and the middle pole of the left kidney. 6 mm hypodense lesion of left kidney seeded region growing. The inferior vena cava was free.

Bone scan and X-ray skull: Normal X-ray chest: Rounded opacity in right mid-zone contrast enhanced CT-scan thorax: Parenchymatous mass lesion seen in the right lower lobe and a tiny parenchymal nodule was seen in left lower lobe.

Diagnosis

The probable clinical diagnosis was a left renal mass with metastasis to lung.

Treatment and follow-up: The patient underwent left radical nephrectomy and left lung metastasectomy along with splenectomy (for splenic hemorrhage) on 9th July 2009 and the tissue was sent for histopathology. The histopathology of the renal mass showed a clear cell carcinoma with focal sarcomatous area having Fuhrman Nuclear Grade 4. There was no lymphatic vessel invasion; however, invasion in perirenal fat was seen. The ureter, renal pelvis and the adrenal were unremarkable. Lung metastasectomy sample and splenic sample showed no tumor deposit. CT-guided biopsy of the right lung mass done on 24th July 2009 revealed metastasis on histopathology.

Hence, the confirmed diagnosis of metastatic RCC was made. The patient was treated with chemotherapy with sunitinib malate 50 mg orally daily for 4 weeks and stopped for 2 weeks for a total of 3 such cycles till 30th November 2009. After the completion of the second cycle,

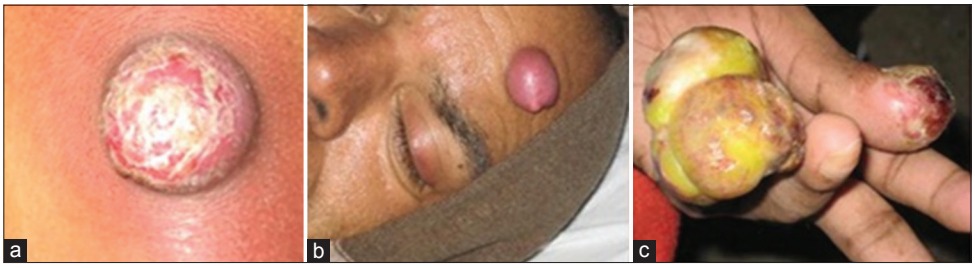

Fig. 1: (a, b, c) Subcutaneous nodules at various sites in the body

Table 1: RCC syndromes

Syndrome	Gene (chromosome)	Tumor type	Extra renal manifestation
Von Hippel-Lindau	*VHL* (3p25)	Multiple, bilateral ccRCC, renal cysts	Hemangioblastoma of retina and central nervous system, phaeochromocytoma, neuroendocrine tumors, pancreatic, renal, epididymal, and parametrial cysts
Hereditary papillary RCC	*c-MET* (7p31)	Multiple, bilateral papillary RCC Type 1	-
Hereditary leiomyomatosis and RCC	Fumarate hydratase (1q42)	Papillary RCC Type 2	Cutaneous and uterine leiomyomas
Birt-Hogg-Dubé	BHD folliculin (17p11)	Multiple chromophobe RCC, oncocytic adenoma, papillary RCC	Facial fibrofolliculoma, pulmonal cysts
Tuberous sclerosis	*TSC1* (9q34) *TSC2* (16p13)	Multiple, bilateral angiomyolipomas, lymphangioleiomyomatosis, rare ccRCC	Cutaneous angiofibroma, cardiac rhabdomyoma, small intestine polyps, pulmonale and renal cysts
Constitutional translocation chromosome 3 (familial ccRCC)	3p translocation	Multiple, bilateral ccRCC	-

Adapted from Proztel C, Maruschke M, Hakenberg O. Epidemiology, aetiology, and pathogenesis of RCC. Eur Urol Suppl 2012;11:52-9. ccRCC: Clear cell renal cell carcinoma

Table 2: Prognostic factors and their impact on survival in RCC [7]

Factors with an impact on survival		No impact
Performance status	Retroperitoneal lymph nodes	Sex
Time from diagnosis to treatment	Number of sites	Age
Prior radiotherapy	Albumin	Kidney side
Prior nephrectomy	Alkaline phosphate	Creatinine
Histologic features	Lactic dehydrogenase	Lung metastases
Grade	Calcium	Mediastinal metastases
Liver metastases	Hemoglobin	Brain metastases
Bone metastases	Neutrophils	Other metastases

Table 3: Approaches to management of advanced RCC

Surgery	Radiotherapy	Systemic approaches
Cytoreductive nephrectomy	Palliative to bone and other sites	Cytotoxic chemotherapy
Solitory or a limited metastasectomy	Spinal cord compression	Cytokines
	Brain metastases	Targeted therapies including VEGF/VVFGFR and mTOR inhibitors
		Bisphosphonates

VEGF: Vascular endothelial growth factor

multiple subcutaneous nodules appeared on the patient's body (Fig. 1) with swelling of all the fingers (Fig. 2) and toes, and there was bleeding from the left little finger. For bleeding, radiotherapy of 6 Gy was given at 2 cm depth. A contrast-enhance CT-scan of lung was repeated on December 11 2009 which revealed progression of the disease.

DISCUSSION

RCC accounts for <3% of the total cancers with the worldwide annual incidence of 200,000 with a mortality of 100,000 cases. Asian region has a higher ratio of incidence to mortality [4]. A significant number of cases (20-30%) have metastatic disease at the time of diagnosis [5]. RCC is predominantly seen in the males with male:female ratio of 2:1. The median age of presentation is around 60 years [6].

The genetic alterations seen in hereditary renal cell cancer are as in Table 1.

RCC can be treated surgically if detected early (i.e. disease limited to the kidneys) and has a good 4 years survival rate of 90-95%. However, once metastases develop the prognosis becomes poor with a decrease in 5 years survival rate to 0-20% [7]. Various prognostic factors have been 4 identified to help patient selection for appropriate treatment strategies. The prognostic factors 4 for survival in RCC are as given in Table 2:

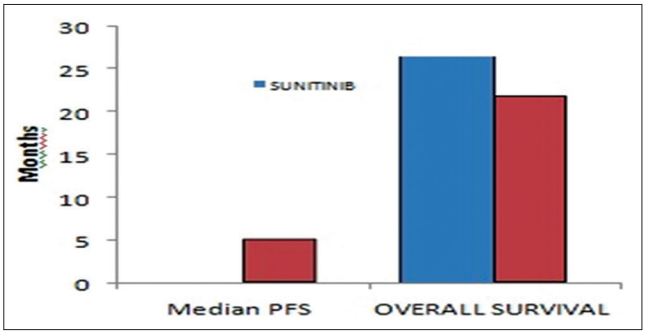

Fig. 2: Comparison of sunitinib with interferon α-2a

The approaches to treatment for management of advanced RCC are given in Table 3.

Our patient was treated with left radical nephrectomy and left lung metastasectomy along with splenectomy. Despite this, the disease progress and he had metastasis for which he subsequently had to be treated with chemotherapy with of sunitinib malate and radiotherapy [8]. Finger metastasis may be explained by high overexpression of vascular endothelial growth factor (VEGF) and CXCR4.

Sunitinib is an orally administered multiple tyrosine kinase inhibitor which binds to VEGF receptor, platelet-derived growth factors receptors a and 5 Bb, Flt-3 and kit receptors. Sunitinib is known to increase median progression-free survival by 11 months as compared to 5 months with interferon α-2a. The overall survival rate is also prolonged by sunitinib (Fig. 2).

CONCLUSION

RCC has a poor prognosis when detected in the advanced stage. A combined approach is required to treat advanced RCC.

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