Scholars Journal of Medical Case Reports **ISSN 2347-6559 (Online)**
Sch J Med Case Rep 2016; 4(2):91-93 **ISSN 2347-9507 (Print)**

(An International Publisher for Academic and Scientific Resources) DOI: 10.36347/sjmcr.2016.v04i02.011

An extremely rare primary presentation and outcome of renal cell carcinoma: A case report

Hanuwant Singh[1], Moumita Maiti[2], Bibhas Ch. Mukhopadhyay [1], Tapan Kumar Mandal[1], Krishnendu Maiti[1], Tapas Kumar Majhi1

[1]Department of Urology, NRS medical college Kolkata (WB) 700014, India
[2]Department of Pathology, NRS medical college Kolkata (WB) 700014, India

***Corresponding author**
Dr. Hanuwant Singh
Email: drhanuwant@gmail.com

Abstract: Metastasis of Renal cell carcinoma (RCC) is uncommon to the skin and is a sign of poor prognosis because mostly there are other synchronous sites of systemic metastasis. Skin metastases as the primary presentation of renal cell carcinoma are extremely rare. We present a case of renal cell carcinoma that was primarily manifested by skin metastasis in the chest region with no other organ involvement and no past history of RCC. Patient was managed surgically alone with good prognosis. No recurrence or metastasis was seen in last two years of follow up period. This is the first such case report in the English literature. Metastatic skin lesion in RCC may be surgically curative and not always associated with poor prognosis.
Keywords: Renal cell carcinoma (RCC), Solitary, Skin Metastasis

INTRODUCTION

Renal cell carcinoma (RCC) is the commonest and most lethal urologic cancer in adults. One third of the patients diagnosed as RCC present with synchronous metastatic disease [1]. Skin metastases as the primary presentation of renal cell carcinoma are extremely rare. Here we present a case of RCC that was primarily manifested by skin metastasis in the chest region rather than any systemic or local symptoms. There was no other organ involvement and recurrence in last two years of follow up.

CASE REPORT

A 53-year-old male patient presented to our general surgery department with rapidly growing 3×2×2 cm in size swelling on his right anterior chest wall skin. The clinical diagnosis was hemangioma because it exhibited capillary distinctions and completely excised. Histopathology showed clear cell proliferation suggestive of metastatic renal cell carcinoma and margins were free from tumor [Figure 1]. Patient referred to us for further management.

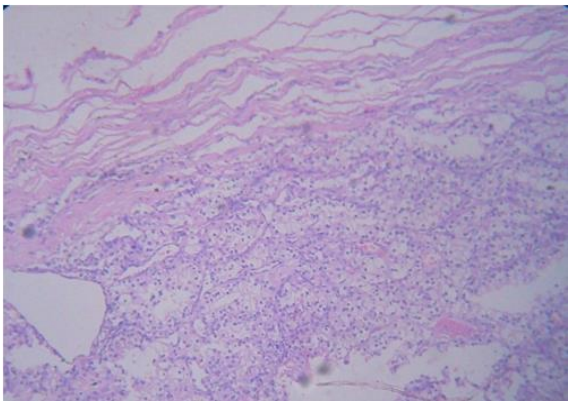

Fig-1: Skin tissue involved by clear cell carcinoma (x200)

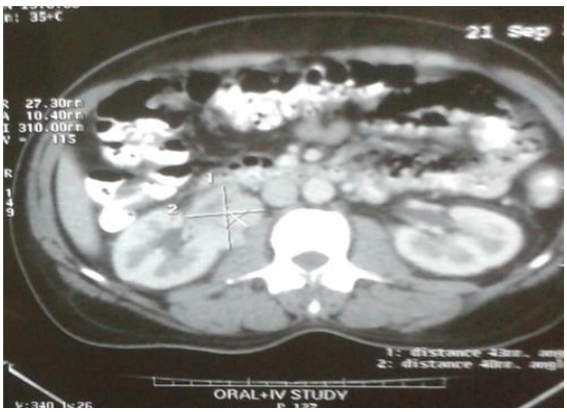

Fig- 2: Abdominal CECT showing enhancing mass in right kidney

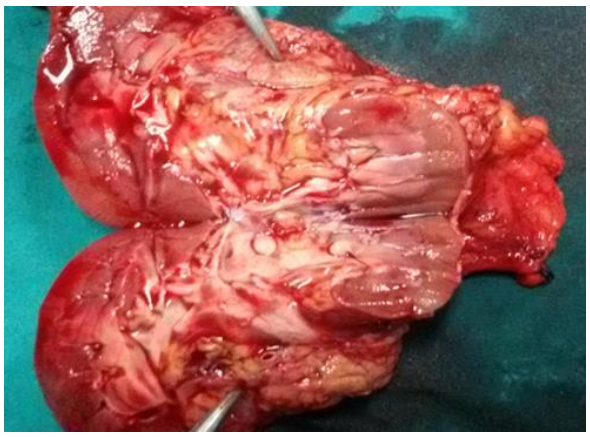

Fig-3: Right radical nephrectomy specimen

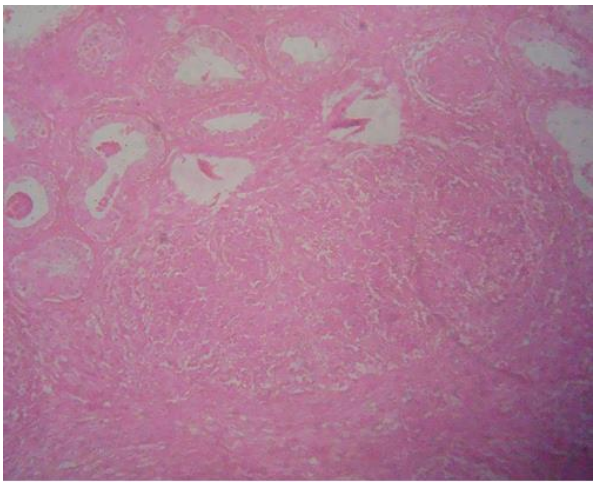

Fig-4: Clear cell carcinoma of kidney(x200)

There was no history of fever, pain abdomen, weight loss, hematuria lower urinary tract symptoms, any chronic medical illness and surgery. On examination general condition and nutrition of patient was good, no pallor, vitals were within normal limits. The anterior chest wall showed five cm size scar mark of swelling excision. Abdomen was soft, no mass palpable and external genitalia were normal.

On investigations hemogram, renal and liver function test, corrected serum calcium and urine analysis were normal. Ultrasonography of abdomen and pelvis showed right renal mass of 8 x 7 cm in size arising from the upper pole with the rest of the viscera normal.

CECT chest and whole abdomen showed 9×8x7 cm enhancing mass involving upper and midpole of kidney with no extension outside renal capsule and to major renal vasculature [Figure 2]. No lymph node (LN) enlarged. No mass or suspicious lesion seen in lung, liver or any other organ. Patient was managed by radical nephrectomy. Intraoperatively tumor size was 9x7x7 Cm, Confined to renal capsule. No LN enlargement, No renal vascular extension, and adrenal gland was not involved [Figure 3].

Histopathology report of radical nephrectomy was clear cell renal carcinoma, fuhrman's grade 2 and all margins were free from tumor [Figure 4] with pathological stage pT2aN0 M1.

Opinion taken from medical oncologist for further management and they advised targeted therapy but patient refused .During last two years of follow up the patient is asymptomatic and recent follow up CECT scan of chest and whole abdomen showed no evidence of recurrence or distant metastasis.

DISCUSSION:

RCC is the most lethal urology cancers with a high tendency to metastasis [1, 3]. Metastasis occurs in approximately one third of patients at the time of diagnosis. As many as 40% of the other two thirds eventually will develop distant metastasis [2]. The most common site of distant metastasis is the lung than liver, bone, lymph node, adrenal gland and the opposite kidney [3]. However, metastasis to skin is much less common, accounting for 1% of all metastases of renal cell carcinoma. The majority of these cases have been reported in patients with recurrent disease or with other metastases [5]. In our case, the renal cell carcinoma that was primarily manifested by cutaneous metastasis in the chest region rather than local or systemic symptoms. There was no other site of metastasis at the time of presentation and no past history of RCC.

Metastasis of RCC to skin is more common in males than in females [6]. Supporting the previously reported incidence our presented case is male, too. The commonest site for cutaneous metastasis from RCC is the scalp and face but in our case it was anterior wall of chest [7]. Mostly, development of skin metastases takes places within six months to five years of the initial diagnosis and after performing the nephrectomy [4]. In this presented case, skin metastasis was the primary presentation. They are usually single, rapidly growing tumors with a vascular appearance [4]. Cutaneous metastasis of RCC means that the disease is widespread and has poor prognosis. Most patients with cutaneous metastasis had at least one other site of systemic metastasis. Brady et al reported an average interval of 12.7 months from the appearance of skin lesions to death [3]. In this presented case there was no other site of metastasis at the time of presentation as well as at two years of follow up. Treatment of RCC with single metastatic lesion consists of a combination of surgical interventions (radical nephrectomy with surgical excision of metastatic lesion) and angiogenesis/multikinase inhibitor [4]. Our case was managed by surgery alone.

The rich vascular structure of RCCs facilitates hematogenous extension and the development of distant metastases [1]. The most important hematogenous extension route in RCC is the vena cava system, which leads to the lung [1, 3]. Arteriovenous and systemic shunts are thought to facilitate the tumor cells' path to the cutaneous region.[4] RCC cutaneous metastasis is known to have a vascular appearance. It is important to consider RCC metastasis in the differential diagnosis of new onset tumors with a vascular appearance in the cutaneous region [8].

Our clinical differential diagnoses included metastasis, angiosarcoma, Kaposi sarcoma, pyogenic granuloma, and amelanotic melanoma [9, 10].

Skin metastasis of RCC is a sign of poor prognosis and mostly there are other synchronous sites of systemic metastasis, so complete clinical and para clinical examinations of all patients admitted with present or past history of RCC who suffered from skin metastasis is advisable to find any other possible site of metastasis. It should be noted that prompt diagnosis and treatment may affect the eventual outcome.

CONCLUSIONS

Clinicians should conduct a careful examination of the skin lesion and consider RCC metastasis in the differential diagnosis of new onset tumors with a vascular appearance. Very rarely patients of RCC may present with a skin lesion before detection of the renal tumor. Complete excision of solitary skin metastasis with radical nephrectomy may be curative. It should be noted that prompt diagnosis and treatment may affect the eventual outcome.

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