CASE REPORT

Isolated contralateral adrenal metastasis from renal cell carcinoma: A rare presentation and review of literature

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Abstract

Renal cell carcinoma is an aggressive tumour with high metastatic potential. It is known for haematogenous metastasis to any part of the body. Ipsilateral adrenal gland is involved by direct spread or haematogenously in 2-10% of patients but contralateral adrenal gland metastasis is extremely rare and accounts for 0.19% of cases. A case of isolated contralateral adrenal metastasis in a patient with renal cell carcinoma is discussed.

Keywords: renal cell carcinoma; adrenal gland metastasis; isolated; contralateral

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Introduction

Renal cell carcinoma is an aggressive tumour known for metastasis in every part of body haematogenously. Metastatic involvement of the ipsilateral adrenal gland is seen in about 2-10% of cases and the contralateral adrenal gland can be involved in up to 2.5% of the cases. Isolated contralateral adrenal metastasis is extremely rare and is seen in 0.19% of cases only. A patient with isolated contralateral adrenal metastasis and renal cell carcinoma is reported here, which is uncommon but documented site of metastasis from renal cell carcinoma.

Case report

A 65-year-old gentleman without any comorbid illness was evaluated for acid peptic disease and was incidentally detected to have left renal mass and was referred to our institute for evaluation and management.

Clinical examination was unremarkable. CT abdomen and pelvis showed an enhancing solid mass of 62×61×65 mm of size arising in the middle portion of left kidney (Figure 1) and another mass which

was well enhancing and solid, of size 50×31mm in the right adrenal gland (Figure 2). There was no thrombus in inferior vena cava or renal veins and retroperitoneal lymph nodes were not enlarged. 24 hour urinary VMA and metanephrines were normal. Rest of the metastatic work up including contrast CT chest and bone scan was normal.

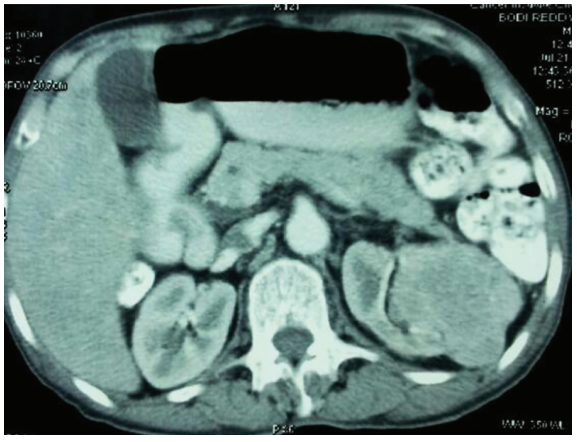

Figure 1: Left renal tumor replacing middle portion of kidney.

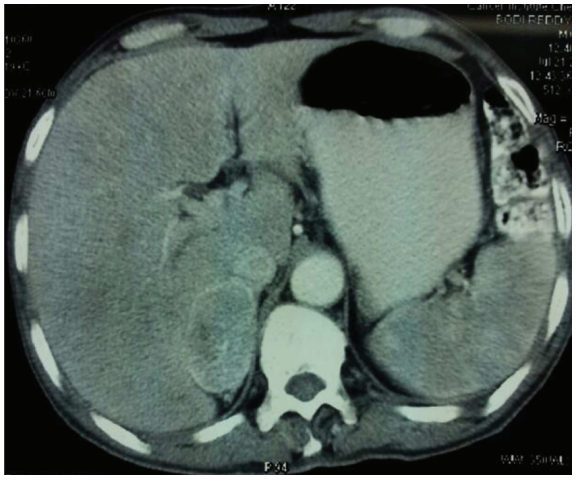

Figure 2: Right adrenal metastasis.

He underwent a CT guided FNAC from right adrenal mass. FNAC smear shows clusters of large atypical epithelial cells with abundant clear cytoplasm with round to oval nuclei showing pleomorphism and prominent nucleoli, features suggestive of metastatic clear cell carcinoma from kidney (Figures 3 and 4).

Patient was not fit enough to undergo any major surgical resection as he was detected to have coronary arterial disease with ejection fraction of 40% hence tyrosine kinase inhibitors were offered but he declined treatment.

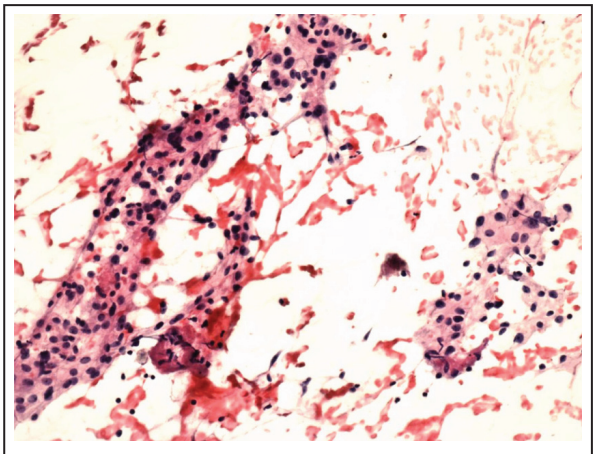

Figure 3: FNAC from right adrenal gland shows clusters of large atypical epithelial cells with abundant clear cytoplasm with round to oval nuclei showing pleomorphism and prominent nucleoli, features suggestive of metastatic clear cell carcinoma from kidney.

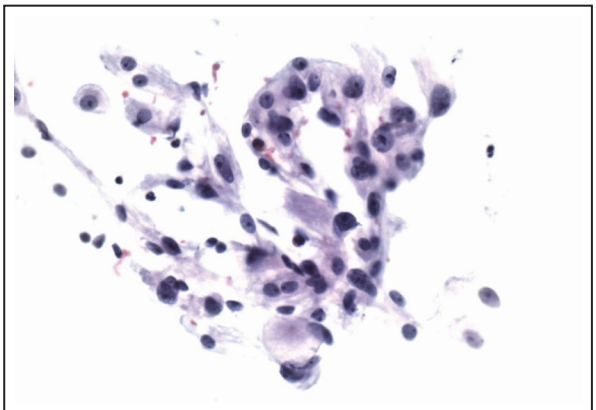

Figure 4: Clear cells from renal cell carcinoma (high magnification).

Discussion

Renal cell carcinoma has high tendency to metastasize to almost every part of body [1]. At least 25-30 % of patients are metastatic at presentation [1]. Lung, bone, lymph nodes and liver are the commonest sites of metastasis in descending order of frequency [2]. Adrenal gland involvement is documented in 2%-10% of clinical patients and in 6%-29% in autopsy series [3-5]. Adrenal gland involvement is ipsilateral or bilateral [3-5]. Contralateral isolated adrenal gland involvement is very rare with less than 60 cases reported so far and with an incidence of 2.5% in autopsy series [6]. In a series of 1828 patients by Saitoh et al., the incidence of solitary and synchronous contralateral adrenal metastases was 0.19% [7]. Lau et al., reported that the most common histological variant in isolated contralateral adrenal metastasis was nearly always of the clear cell type [6]. Zornoza et al., postulated

that abundant blood flow with sinusoidal structure within the adrenal gland could be the mechanism behind this unique metastasis [8]. Advanced T stage (>PT3), size more than 4cm, upper pole tumors and large tumour replacing the entire kidney are factors that determine ipsilateral adrenal gland involvement but this cannot be applied to contralateral adrenal involvement as it indicates metastatic potential of tumour and can be seen with smaller mid and lower pole tumors also [9, 10]. In the era of cytoreductive surgery it is reasonable to offer adrenalectomy for patients who have isolated adrenal gland metastasis with renal cell carcinoma. The decision to operate should be based on the performance status of the patient, number of metastasis and resectability [11]. Surgical resection of solitary adrenal metastasis has been shown to prolong survival [12-14]. 5 year survival after metastasectomy is 29% overall, the survival of those patients who present with synchronous metastasis is 22% [14].

In the present case, the patient presented with isolated synchronous contralateral adrenal metastasis which on computed tomography (CT) guided fine needle aspiration cytology (FNAC) from adrenal gland was shown to be renal cell carcinoma consistent with clear cell variant. The urinary VMA (vanillylmandelic acid) and metanephrines were normal. Patient was not a suitable candidate for surgery hence a cytoreductive nephrectomy with adrenal gland metastasectomy could not be performed. He was offered tyrosine kinase inhibitors but he refused any further treatment due to personal reasons and hence he was advised best supportive care at local place.

Conclusion

The survival after isolated adrenal metastasectomy is poor and variable & only few case reports are available and no standardized treatment modality is established. It seems to be reasonable to consider adrenalectomy along with nephrectomy which could be the only modality of treatment to improve survival. We hereby intend to present our case as a rare case of contralateral isolated adrenal metastasis from renal cell carcinoma as an uncommon but documented site of metastasis from renal cell carcinoma.

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Conflicts of interest

The authors declare no conflicts of interest.

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