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Metastatic Renal Cell Carcinoma Presenting as Hemiparesis and Seizure

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Abstract: ***This case report describes an uncommon presentation of metastatic clear cell renal cell carcinoma in a 52-year-old man who initially presented with focal seizures and left-sided weakness caused by a cerebral metastatic lesion. Imaging studies revealed bilateral renal masses, inferior vena cava tumour thrombus, pulmonary metastases, and a brain lesion with significant mass effect. Histopathological examination confirmed clear cell renal cell carcinoma, ISUP grade 2. The patient was managed through a multidisciplinary approach involving whole-brain radiotherapy, corticosteroid support, and targeted therapy with pazopanib. Clinical improvement was observed with recovery of motor function and reduction in the size of the renal masses on follow-up imaging. This case highlights the importance of thorough evaluation in patients presenting with neurological symptoms and demonstrates the potential benefit of combining radiotherapy and tyrosine kinase inhibitor therapy in selected patients with metastatic renal cell carcinoma involving the brain.***

Keywords: Renal cell carcinoma, Brain metastasis, Hemiparesis, Radiation, Pazopanib

1. Introduction

Renal cell carcinoma is the most common genitourinary carcinoma. Recently due to advancement of imaging techniques, incidence of incidental detection of renal tumour is increasing but due to late local sign and symptoms and propensity of lymphatic and blood spread of renal tumour approximately one third of newly diagnosed RCC presents with synchronous metastatic disease. This malignancy is known to metastasize several years after the primary tumor has been treated (1). The rate of metastasis prior to treatment of the primary is about 24–28% but may increase to as much as 51% post nephrectomy (1)

2. Clinical presentation

A 52-year-old man presented with a history of focal seizure with left hemiparesis, with no history of hematuria or loin pain. Physical examination revealed UMN type facial nerve palsy with grade1 power in left upper limb and grade 2 in left lower limb. Initial evaluation showed an altered signal intensity lesion in right parasagittal area measuring 21 x 14.6mm in frontal lobe with mass effect in in the form of subfalcine herniation, effacement of lateral ventricle and midline shift in MRI Brain. (Fig 1a, 1b)

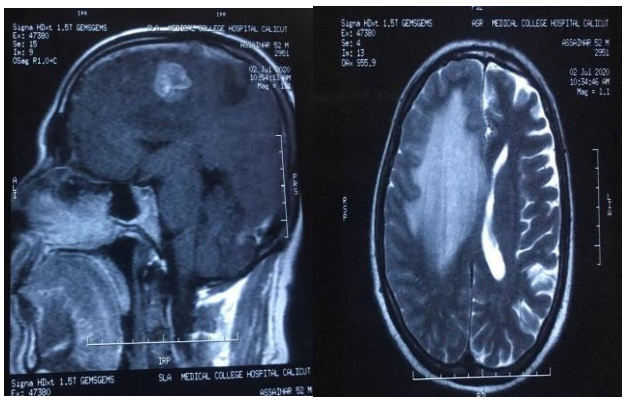

Figure 1 (a, b): MRI showing lesion in right parasagittal area with mass effect

Further workup in the form of Contrast Computed Tomography Abdomen and Chest showed a heterogeneously enhancing soft tissue density 6.2 x 5.6cm in the lower pole of right kidney and 3.1 x 3.7cm in the mid- pole of left kidney with infrahepatic inferior venecaval tumour thrombus (Fig 2a, 2b) with well- defined rounded soft tissue density lesions involving lung parenchyma, largest 1.8 x 1.9cm in superior segment of right lower lobe (Fig 2c)

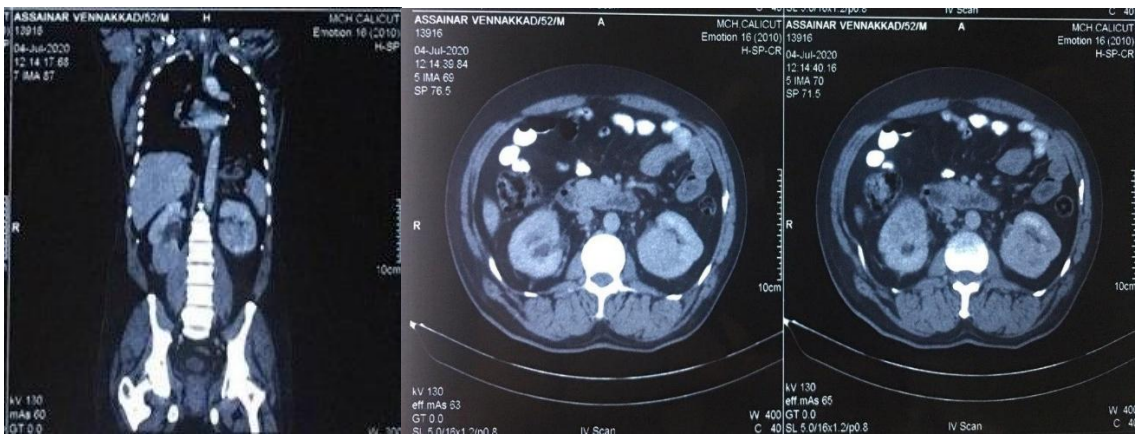

Figure 2 (a, b): Heterogenously enhancing lesions in both kidneys

Figure 2 (c): Rounded soft tissue density lesion in lung parenchyma

Hence proceeded with renal biopsy and confirmed the primary to be clear cell carcinoma ISUP grade 2 (Fig 3)

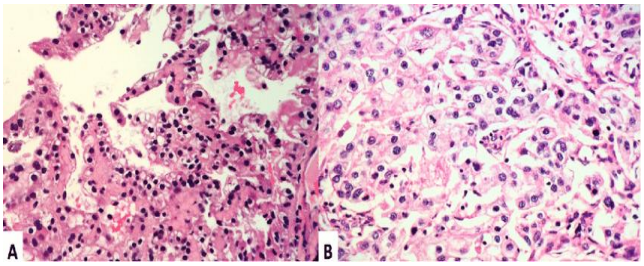

Figure 3: Clear cell carcinoma ISUP Grade 2

As per the recommendation by the multidisciplinary tumour board, the patient was treated with radiation therapy (whole brain RT, 2000cGy, 5 fractions) for brain lesion followed by pazopanib therapy at an oral dose of 400 mg daily. Dexamethasone and Mannitol were also given as per the advise of neurosurgeon, dose of which was progressively tapered and the stopped. Patient became symptomatically better. Motor power improved to grade 4. Followup CECT Abdomen showed a decrease in the size of renal mass.

3. Discussion

The prognosis of brain metastases in RCC has traditionally been dismal. Cytokines used in RCC have limited central nervous system (CNS) efficacy as it does not cross the blood-brain barrier. Tyrosine kinase inhibitor showed better response in metastatic RCC. The efficacy of sorafenib, sunitinib, and temsirolimus in CNS is not known because the previous phase 3 trial with these drugs have excluded patients with CNS disease. Management of brain metastasis in the renal tumour is still controversial even though there are case reports about the benefit of TKI in this scenario. A case reported in Greece on March 2007 showed the activity of sunitinib in brain metastases from RCC, in which the patient had a partial response of the cerebral lesion following treatment with sunitinib. Sunitinib was safe and led to a considerable shrinkage of the brain metastases without any serious adverse reactions or CNS toxicities. (2) The role of cytoreductive nephrectomy is disputed in these patients due to limited survival. Multidisciplinary assessment is crucial for optimizing the benefit for individual patients based on the size and location of the brain metastasis, the presence or absence of symptoms related to CNS lesions, performance status, life expectancy, and extracranial disease status. More data on the use of systemic treatment alone in patients with mRCC brain metastasis are needed (3)

4. Conclusion

This is a rare case of renal cell carcinoma presenting with symptomatic cerebral metastases. Metastases from RCC are commonly seen at diagnosis and the primary tumour is easily characterised on abdominal cross-sectional imaging. Even though RCC with brain metastases is considered to have a poor prognosis, they can have an excellent response with a combination of radiation and TKI.

References

[1] Geramizadeh, B., A. Mostaghni, Z. Ranjbar, F. Moradian, M. Heidari, M. B. Khosravi, et al. 2015. An unusual case of metastatic renal cell carcinoma presenting as melena and duodenal ulcer, 16 years after nephrectomy; a case report and review of the literature. Iran J. Med. Sci. 40:175–180.

[2] Koutras AK, Krikelis D, Alexandrou N, Starakis I, Kalofonos HP. Brain metastasis in renal cell cancer responding to sunitinib. Anticancer Res. 2007 Nov-Dec;27(6C):4255-7. PMID: 18214028.

[3] Hasanov, E., Yeboa, D.N., Tucker and Jonasch, E. (2022), An interdisciplinary consensus on the management of brain metastases in patients with renal cell carcinoma. CA A Cancer J Clin, 72: 454-489. https://doi.org/10.3322/caac.21729