



FOR WHOM THE BELL TOLLS- RENAL SECONDARY IN CEREBELLUM

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ABSTRACT

Introduction: Brain metastases occur in 9% of patients in renal cell carcinoma. Renal cell carcinoma presenting as ataxia as a result of Cerebellar metastasis is rarely seen. We present a case report of a patient presenting with cerebellar signs as result of brain metastasis from Renal cell carcinoma. **Case Summary:** A 55 years male with no comorbid illness, presented with ataxia, giddiness, and headache. The patient was examined by a physician and investigated. NCCT head revealed a cerebellar mass, suspicious of secondaries. Further Metastatic workup revealed a Left side heterogeneous renal mass of size 7 x 8 cm involving upper and midpole of the kidney. Left radical nephrectomy was done. Histopathology was suggestive of clear cell carcinoma. Later on, cerebellar metastasis was operated by a neurosurgeon. The patient could survive the surgery with 10th cranial nerve palsy. **Conclusion:** Metastatic renal cell carcinoma carries a worse outcome. However, solitary cerebellar metastasis may be cured by excision in a minority of patients.

KEYWORDS Brain metastases, Renal cell carcinoma, cerebellar metastases.

INTRODUCTION

Renal cell carcinoma accounts for 2-3 % of all malignant neoplasms of the body. It is the most lethal carcinoma of all the urological cancers.^[1] The classic triad of flank pain, hematuria, and palpable abdominal mass are rarely found. Resection of solitary or few metastases disease has been reported by several groups to be associated with long disease-free intervals and overall survival in some patients. Studies are lacking for excision of metastases, however, few favourable outcome reported may reflect selection bias, different tumor biology, and natural history or other confounding factors.^[2]

We report a patient of renal cell carcinoma presenting with cerebellar symptoms.

Case Summary

A 55 years male with no comorbid illness, presented with ataxia, giddiness, and headache. The patient was examined by a physician and investigated. NCCT head revealed a cerebellar mass, suspicious of secondaries. MRI and CECT head was done to further confirming the type of malignancy. Metastatic workup revealed a Left side heterogeneous renal mass of size 7 x 8 cm involving

upper and midpole of the kidney. Left radical nephrectomy was done. Histopathology was suggestive of clear cell carcinoma. Later on, cerebellar metastasis was operated by a neurosurgeon. The patient could survive the surgery with 10th cranial nerve palsy. Patient was started on Pazopanib postoperatively. On follow up patient remains recurrence free at six months with minimal symptoms of X nerve palsy after rehabilitation.

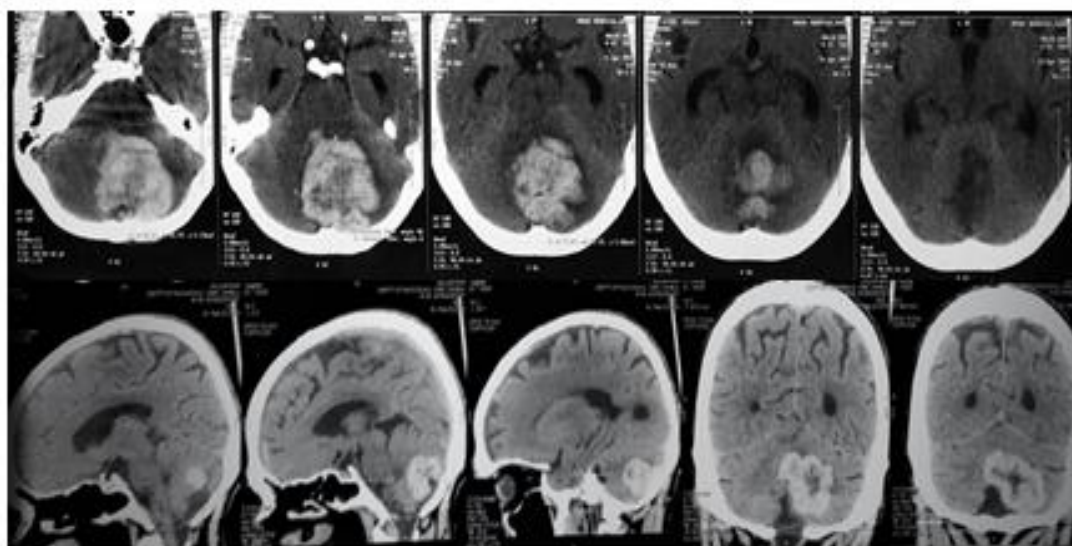


Figure 1. Well defined intraxial lesion in left cerebellar hemisphere with lobulated margins 3.7 x 3.6 cm with cranio-caudal extent of 3 cm. It is hyperdense (HU 60-80) at periphery with hypodense (20-30).

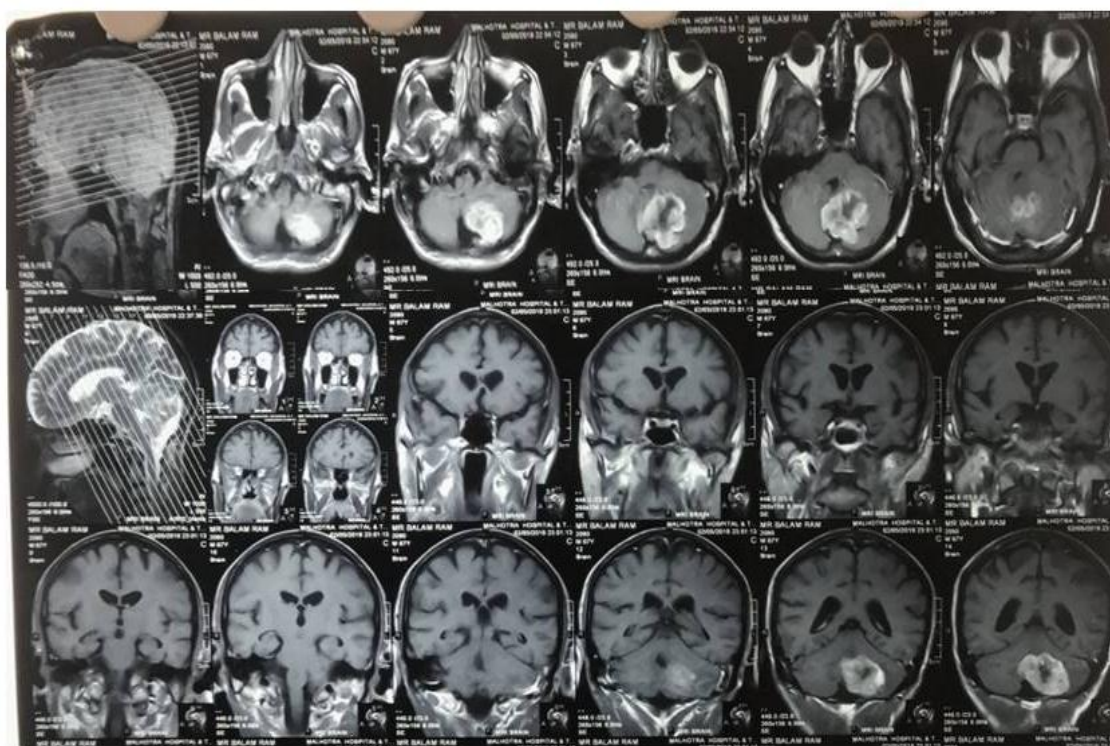


Figure 2. Cerebellar mass 3.7 x 3.6 cm pushing vermis to right side with erosion of occipital bone causing defect 8 x 5 mm.

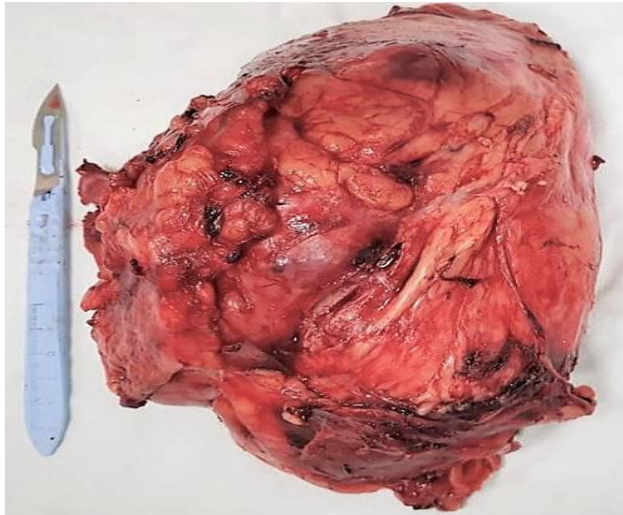


Figure 4. Specimen of left kidney (Radical Nephrectomy)
Golden yellow tumor (due to lipid content) with hemorrhages and necrosis

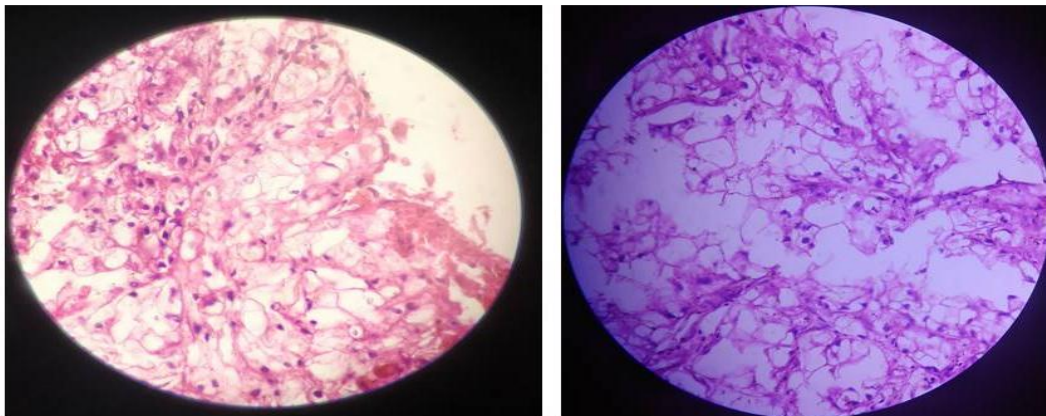


Figure 5. Histopathology a-b, Slides form renal mass Microscopic- Water-clear or optically-clear cells (due to glycogen content) arranged in nests in "chicken wire" vasculatures

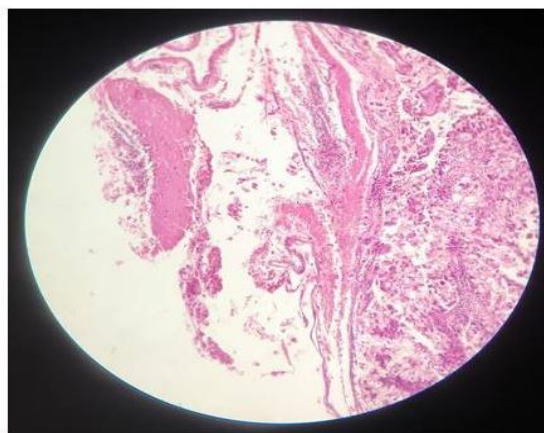


Figure 6. Slide from cerebellar tumor- Cohesive clusters of clear tumor cells separated by fibrovascular septa, normal cerebellar cortex at the periphery on the left (H&E stain, 100x)

DISCUSSION

Renal cell carcinoma (RCC) incorporates different cancers biologically, histologically, and clinically distinct entities. Nearly one-third of recently diagnosed RCC presents with metastases; another one third develop metastases on follow up.^[2]

Renal cell carcinoma with brain metastases has a median survival of 11 months. Metastatic RCC is resistant to chemotherapy and radiation. Only effective modalities are surgery and immunotherapy. Patients of renal cell carcinoma should be offered multimodal treatment of surgery, immunotherapy, and radiation. Sorafenib was found to be effective in patients with brain metastases in a few patients. In an analysis (European advanced renal cell carcinoma sorafenib) of 1031 patients of brain metastases with RCC demonstrated a median PFS 7.4 months and a control rate of 60.7%.^[3, 4]

In a study involving 278 patients at MSKCC, complete resection was associated with more prolonged overall survival compared to incomplete survival. Multivariate analysis of the study showed age younger than 60 years, solitary metastasis, disease-free survival of more than one year are factors associated with better outcomes after the excision of metastasis.^[5]

In another study, pulmonary metastasis, smaller tumor size, metachronous lesions are predictors of better outcome after metastasectomy.^[6]

The majority of RCC patients with brain metastatic are symptomatic and had a prior metastatic disease that progressed to the brain. Those with a solitary RCC, brain metastasis are less likely to develop CNS recurrence after local therapy and are ideal candidates for enrolment onto clinical trials.^[7]

Despite advances in treatment options, patient outcomes in metastatic RCC continue to be poor with rapid brain and non-brain failure rates. Nivolumab, given within six months of SRT, suggests a lower risk of subsequent systemic failure and death.^[8]

Patients with poor performance status, comorbid medical conditions, and progressive disease and brain metastases are unlikely to benefit from excision of metastases.

The role of cytoreductive nephrectomy as a prelude to systemic therapy with currently available novel targeted agents is unclear and is being prospectively studied in ongoing clinical trials. A retrospective analysis appears to suggest a benefit for cytoreductive nephrectomy in patients treated with first-line sunitinib. Some retrospective studies showed benefits of excision of isolated metastasis (survival upto 35-50%), although these studies are poorly conducted, retrospective, selection bias, several confounding factors.^[8]

Resection of metastatic lesions along with cytoreductive nephrectomy is necessary sometimes to relief symptoms of secondaries.^[2]

Our patient presented with symptoms of ataxia, occasional headache. On evaluation and investigation, i.e., CT and MRI single cerebellar lesion was found. Because of symptoms, the patient was planned for surgery. On further evaluation of chest and abdomen, left renal mass was found. Left radical nephrectomy followed by excision of the cerebellar mass was done. The patient was apparently well after surgery well relieved of neurological symptoms however, with partial 10th nerve palsy. Patient was started on Pazopanib postoperatively. On follow up patient remain recurrence free at six months with minimal symptoms of X nerve palsy after rehabilitation.

CONCLUSION

Metastatic renal cell carcinoma carries a worse outcome. However, solitary cerebellar metastasis may be cured by excision in a minority of patients.

Conflict of Interest None

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REFERENCES

1. R Siegel, D Naishadham, A Jemal: Cancer statistics, 2013. *CA Cancer J Clin*, 2013; 63: 11-30.
2. Partin AW, Dmochowski RR, Kavoussi LR, Peters AC. *Campbell urology 11th edition*: Philadelphia Elsevier.
3. Flanigan RC, Campbell SC, Clark JI, Picken MM. Metastatic renal cell carcinoma. *Curr Treat Options Oncol*, 2003; 4: 385-90.
4. Beck J, Procopio G, Bajetta E, Keilholz U, Negrier S, Szczylik C, et al. Final results of the European Advanced Renal Cell Carcinoma Sorafenib (EU-ARCCS) expanded-access study: A large open-label study in diverse community settings. *Ann Oncol*, 2011; 22: 1812-23.
5. JP Kavolius, DP Mastorakos, C Pavlovich, et al.: Resection of metastatic renal cell carcinoma. *J Clin Oncol*, 1998; 16: 2261-2266.
6. SC Murthy, K Kim, TW Rice, et al.: Can we predict long-term survival after pulmonary metastasectomy for renal cell carcinoma? *Ann Thorac Surg*, 2005; 79: 996-1003. 15734422
7. Suarez-Sarmiento A Jr, Nguyen KA, Syed JS, et al. Brain Metastasis From Renal-Cell Carcinoma: An Institutional Study. *Clin Genitourin Cancer*, 2019; 17(6): e1163-e1170.
8. H. Mohammadi, A.B. Tolpin, J. Peacock, A.B. Etame, T.J. Robinson. Outcomes in Brain Metastatic Renal Cell Carcinoma Treated with Stereotactic Radiation Therapy and Nivolumab. *International journal of radiation oncology*, september 01, 2019; 105(1): supplement, e82.