

## The Challenge of Differentiating a Primary Psychiatric Process from Brain Metastases Related to Renal Cell Carcinoma

Ola Baczynski\*, Alexander Brenner, Sarah Garcia-Ricketts, Gabriella Waserstein, Gerardo Rubio and Luke Petry

University of Illinois at Chicago, USA

\*Corresponding author: Alexandra (Ola) Baczynski, University of Illinois at Chicago, USA, Tel: 708-724-1408; E-mail: [baczyns2@uic.edu](mailto:baczyns2@uic.edu)

### Abstract

**Introduction:** Renal cell carcinoma (RCC) poses a challenge in diagnosis and treatment due to its ability to mimic a plethora of other pathologies. Approximately 25% of patients have metastatic disease at initial presentation; in patients with past psychiatric histories, brain metastases may go undetected.

**Case description:** A 52-year-old woman with a history of schizophrenia and metastatic RCC with right frontal brain metastasis s/p radiation therapy and low dose dexamethasone (neuropsychiatric effects at full dose per chart) presented after suspected ictal episode. Video EEG confirmed epileptic activity so lacosamide 100mg qHS was started. Psychiatry was consulted given concern that the patient's home psychotropic regimen was contributing to persistent daytime somnolence. Exam notable for blunted affect, paucity of thought, and response latency. Bedside MOCA was 11/30 with deficiencies in attention, abstraction, memory/recall, and visuospatial/executive functioning. Bzotropine was made as needed and quetiapine changed to 50mg IR qHS. Daytime somnolence improved but the mental status exam remained stable, which the daughter later stated was baseline.

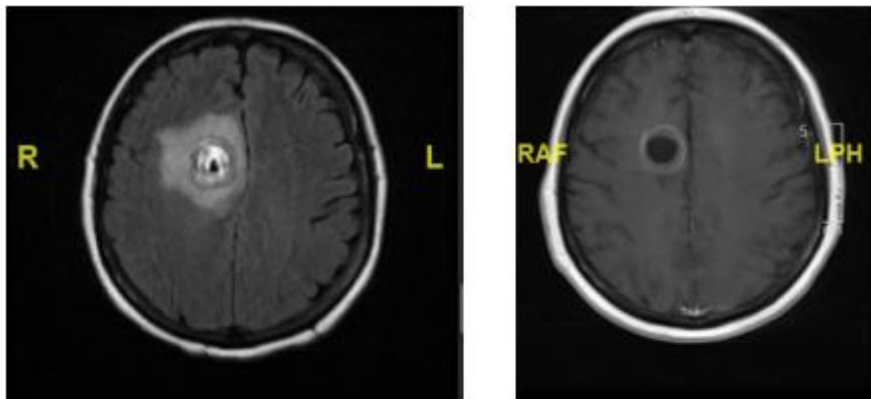
**Discussion:** In patients without past psychiatric history, behavioral changes in the setting of RCC are presumed metastatic or paraneoplastic in origin. However, in patients with a history of schizophrenia, discerning between primary and secondary psychiatric processes can be challenging. Frontal lobe pathology classically involves impaired executive functioning, memory and personality changes. Chronic hypofrontality associated with negative symptoms of schizophrenia could mask evidence of brain metastases, possibly resulting in delayed diagnosis. The management of RCC patients with brain metastases involves steroids, radiation and surgery, all of which may have significant neuropsychiatric effects.

## Introduction

Renal Cell Carcinoma (RCC) poses a challenge in diagnosis and treatment due to its ability to mimic a plethora of other pathologies. Approximately 25% of patients have metastatic disease at initial presentation; metastatic involvement may actually be the presenting complaint [1]. When patients with past psychiatric histories develop RCC, they are at risk of delayed or incorrect diagnosis as their symptoms of metastatic disease may be confounded by or misattributed to psychiatric illness.

## Case Presentation

A 52-year-old woman with a history of schizophrenia and metastatic RCC with right frontal brain metastasis s/p radiation therapy and low dose dexamethasone (patient experienced neuropsychiatric effects at full dose dexamethasone per chart). Patient initially presented to PCP due to a two-month history of persistent dry cough. Patient had no prior history of tobacco use. COVID testing was negative. No past respiratory history. PCP ordered CXR which showed multiple nodular densities in right lung base. Follow up CT of the chest identified multiple bilateral pulmonary nodules as well as hilar lymphadenopathy, concerning for metastatic disease. CT of the chest was able to partially image a left renal mass, raising concern for metastatic RCC later confirmed with on CT abdomen and pelvis. During an initial visit with oncology, per chart review it was documented that the patient “is on multiple psych meds. Per daughter she helps somewhat around the house and her baseline ADLs have not changed.” Six weeks after the diagnosis of RCC with pulmonary metastases was made, patient had an MR brain for staging workup. MR demonstrated 2.2 cm frontal lobe rim-enhancing mass with vasogenic edema as well as a small mass in the right occipital lobe. Per chart, “she is so far asymptomatic from her brain mets associated with vasogenic edema.” Patient followed with psychiatry at another hospital and did not have interdisciplinary mental health coordination of care (Figure 1).



**Figure 1:** A) MR brain imaging results at the time of staging showing a 2.2 \* 1.6 cm rim-enhancing lesion in the frontal lobe with vasogenic edema. Patient deemed to have asymptomatic brain mets at this time. (Dec 2020). B) MR brain imaging results at the time of most recent admission. (Sep 2021).

Patient presented to UIH due to an episode of loss of consciousness during a CT scan. Video EEG confirmed epileptic activity and neurology diagnosed seizure disorder. Patient was started on lacosamide 100 mg qHS.

Psychiatry was consulted given concern that patient's home psychotropic regimen was contributing to persistent daytime somnolence (haldol-decanoate 100 mg q month, quetiapine 150 mg XL qhs, trazodone 50 mg qhs, and benzotropine 1mg BID). Exam notable for blunted affect, paucity of thought, and response latency. Bedside MOCA was 11/30 with deficiencies in attention, abstraction, memory/recall, and visuospatial/executive functioning. Benzotropine was made as needed and quetiapine changed to 50 mg IR qHS. Daytime somnolence improved but mental status exam remained stable, which daughter later stated was baseline.

## **Discussion**

In patients without past psychiatric history, behavioral changes in the setting of RCC are presumed metastatic or paraneoplastic in origin. However, in patients with a history of schizophrenia, discerning between primary and secondary psychiatric processes can be challenging. The primary function of the frontal lobe includes working memory, executive functioning, desire, behavior, and emotional control [2,3]. Lesions or tumors within the frontal lobe classically cause changes in behavior and speech. A study by Keschner et al. [4] reported that 78% of 530 patients with brain tumors had psychiatric symptoms. Chronic hypofrontality associated with negative symptoms of schizophrenia could mask evidence of brain metastases, possibly resulting in delayed diagnosis. Because the patient's baseline functioning was not regularly reevaluated, her psychiatric disorder may have resulted in a delay in diagnosis. In a patient with multiple brain metastases, it is likely that some sort of change in functioning would be noticed by caregivers. However, schizophrenia classically results in disorganized speech and behavior, so differentiating between a patient's baseline functioning and the manifestation of brain metastases can prove challenging [5]. The management of RCC involves a combination of steroids, radiation, and surgery [6]. Each of these modalities has the potential to cause neuropsychiatric side effects. Steroid induced psychosis is a well-documented phenomenon which can worsen psychiatric symptoms. Our patient trialed high dose steroids, but they were discontinued because her symptoms of schizophrenia worsened. Not only can primary psychiatric illnesses obscure manifestations of brain pathologies, but the treatment options we have for brain metastases are often limited in this population as well. Thus, early detection is vital for improving mortality rates.

## **Conclusion**

In patients with a past psychiatric history, consistent evaluation of cognitive functioning is imperative in order to recognize subtle differences which may indicate underlying pathologies. Although psychiatric pathologies may present with disorganized behaviors or speech, longitudinal reassessment of a patient's baseline allows physicians to have an objective, quantitative measure of cognitive functioning in this vulnerable patient population where brain pathologies are more likely to be missed.

## References

1. [Wahner-Roedler DL, Sebo TJ. Renal cell carcinoma: diagnosis based on metastatic manifestations. Mayo Clin Proc. 1997;72\(10\):935-41.](#)
2. [Boele FW, Rooney AG, Grant R, Klein M. Psychiatric symptoms in glioma patients: from diagnosis to management. Neuropsychiatr Dis Treat. 2015;11:1413-20.](#)
3. [Chevreau C, Ravaud A, Escudier B, Amela E, Delva R, Rolland F, et al. A phase II trial of sunitinib in patients with renal cell cancer and untreated brain metastases. Clin Genitourin Cancer. 2014;12\(1\):50-4.](#)
4. [Hoffmann M. The human frontal lobes and frontal network systems: an evolutionary, clinical, and treatment perspective. ISRN Neurol. 2013;2013:892459.](#)
5. [Rahman T, Lauriello J. Schizophrenia: An Overview. Focus \(Am Psychiatr Publ\). 2016;14\(3\):300-307.](#)
6. [Keschner M, Bender MB, Strauss I. Mental symptoms associated with brain tumor: a study of 530 verified cases. JAMA. 1938;110\(10\):714-8.](#)

## Citation of this Article

Ola B, Alexander B, Sarah GR, Gabriella W, Gerardo R, Luke P. The Challenge of Differentiating a Primary Psychiatric Process from Brain Metastases Related to Renal Cell Carcinoma. *Mega J Case Rep.* 2022; 1: 2001-2004.

## Copyright

© 2022 Ola B. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cite.