Case Report

Epistaxis presenting as sentinel feature of metastatic renal cell carcinoma: A case report and review of literature

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Abstract

About 30% of all newly diagnosed renal cell carcinoma (RCC) patients present with synchronous metastatic disease. Usual organs of involvement are lung (75%), soft tissues (36%), bone (20%), liver (18%), cutaneous sites (8%), and central nervous system (8%). Metastases to the paranasal sinuses (PNS) are relatively common and may be a part of synchronous multiorgan involvement or present in follow-up after radical nephrectomy (metachronous); but primary presentation as isolated paranasal mass before the diagnosis of RCC is extremely rare. Here, we report a case of 74-year-old female presented with epistaxis and nasal obstruction. On evaluation by magnetic resonance imaging (MRI), a heterogeneously enhancing mass was found involving left PNS. Biopsy from mass revealed clear cell RCC. Later on, contrast-enhanced computed tomography (CECT) of chest, abdomen, and pelvis showed enhancing mass from the upper pole of the left kidney with no evidence of metastasis elsewhere. The patient was started on pazopanib 800 mg once a day. At 6 months follow-up scan, there was a partial response at both primary as well as metastatic site.

Keywords: Epistaxis, metastatic renal cell carcinoma, paranasal sinus, tyrosine kinase inhibitor

Introduction

Metastatic renal cell carcinoma (RCC) is almost always fatal and survival at 1 year, 5 years, and 10 years are approximately <50%, 5–30%, and 0–5%, respectively.[1,2] Prognosis of RCC depends on multiple variables comprising clinical, anatomical, biochemical, and pathological factors. Symptomatic metastasis, metastatic burden, and site of metastasis have its own prognostic significance. Although metastasis of RCC to paranasal sinuses (PNS) are rare; it is one of the common malignant tumors to metastasize to PNS and is often reported years after radical or partial nephrectomy.[3] Unusual metastatic symptoms and the site of metastasis of RCC prompted us to report this case and to do a literature review. A primary care physician must be aware that epistaxis may be the first presentation of metastatic RCC.

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Case Details

A 74-year-old diabetic and hypertensive female presented to the otorhinolaryngology department with bleeding from the nose and left side nasal obstruction. Magnetic resonance imaging (MRI) head and neck showed T2 hyperintense soft tissue mass lesion of size 5.9 × 4.5 × 2.2 cm^3 occupying frontal and ethmoidal sinuses on the left side with anterior cranial fossa extension

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without obvious brain involvement [Figure 1]. Rhinoscopy showed proliferative mass occupying left nasal fossa [Figure 2]. Histopathological report after punch biopsy showed tumoral tissue composed of diffuse sheets, glands, and trabeculae of clear cells having vacuolated clear cytoplasm, rounded nuclei, and prominent nucleoli with infiltration of tumor cells into the surrounding fibromuscular tissue [Figure 3]. Tumor cells were positive for RCCAg [Figure 4] and vimentin. The features were consistent with metastatic clear cell RCC. Subsequently, contrast-enhanced computed tomography (CECT) of abdomen and pelvis showed heterogeneously enhancing mass lesion of size 3.9 × 6.2 × 6.3 cm^3 arising from upper and mid pole of left kidney with tumor thrombus limited to the renal vein [Figure 5]. In view of poor performance status and comorbidities; the patient was started on tyrosine kinase inhibitor (TKI), pazopanib 800 mg once a day, considering shared decision with the patient. Follow-up imaging at 6 months showed partial response according to RECIST 1.1 criteria.

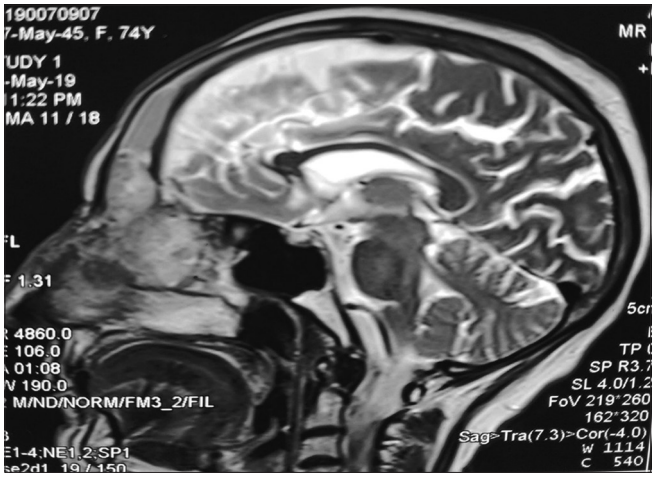

Figure 1: MRI head and neck showing T2 hyperintense lesion involving left frontal and ethmoid sinus with anterior cranial fossa extension

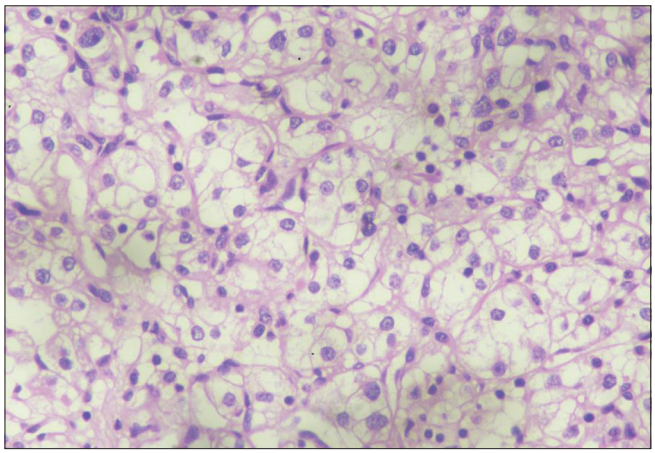

Figure 3: Diffuse spread of tumor cells in sheets, glands, and trabeculae having vacuolated clear cytoplasm and rounded nuclei and prominent nucleoli consistent with clear cell RCC (H & E ×40)

Discussion

RCC is the most common infraclavicular tumor to metastasize to the PNS and accounts for about 49% of cases.[4] Approximately, 110 cases of RCC metastasizing to PNS have been reported in the literature and most of the reported cases were 2–10 years after nephrectomy.[5] Out of them, in only 20 cases, metastasis to the PNS was the first presentation of the disease (without a diagnosis of RCC). The survival of these patients ranged from 3 months to 3 years.[5] The most common presentation of metastasis to PNS was epistaxis (55%, 11/20) followed by nasal obstruction, headache, and diplopia [Table 1]. Our index case had a similar presentation. These symptoms and radiological features of hypervascular mass in PNS raised suspicion of a primary sinonasal tumor such as angiofibroma, hemangiopericytoma, hemangioma, or sinonasal glomus tumors.[6] There are no specific radiological findings to differentiate the primary hypervascular lesion of PNS from RCC metastasizing to PNS. The only way to confirm the diagnosis is by biopsy and immunohistochemistry.[9-11] The multimodality approach of treatment like surgery of primary and secondary with and without radiotherapy has been described in the literature with variable prognosis. Treatment with tyrosine kinase inhibitors and checkmate inhibitors is showing a promising

Figure 2: Rinoscopy showing proliferative mass

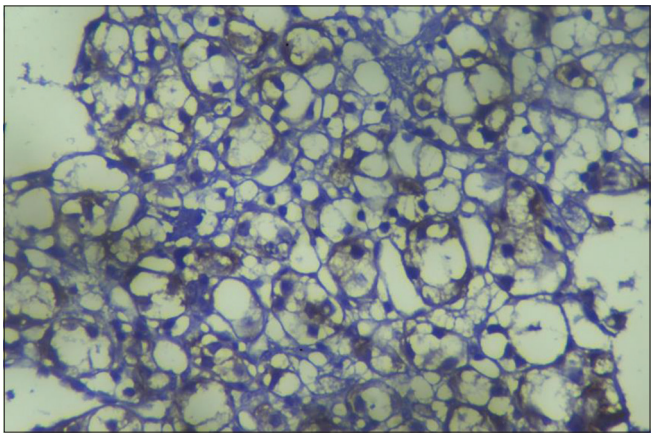

Figure 4: Tumor cells positive of RCCag (×40)

Table 1: Summary of literature review of metastasis from RCC to PNS as the first presentation

Authors	Age/sex	Presenting symptoms	Metastatic site (PNS)	Treatment	Survival after diagnosis
Index case	74/M	Epistaxis and Nasal obstruction	Frontal and Ethmoid	TKI	No recurrent episode up to 6 months
Lee *et al.*, 2016[7]	62/M	Epistaxis and anemia	Ethmoid	Endoscopic excision of metastasis and nephrectomy	Disease-free at 5 months
Berkiten *et al.*, 2016[8]	61/M	NA	Ethmoid	Radiotherapy to metastasis and nephrectomy	Disease-free at 1 year
Sountoulides *et al.*, 2011[3]	73/M	Epistaxis	Ethmoid	NA	NA
Hainăroşie R *et al.*, 2017[9]	60/m	Epistaxis and Frontal swelling	Ethmoid and maxillary	Excision of metastasis and nephrectomy	No recurrence at 3 months
Ralli M *et al.*, 2017[10]	72/M	Epistaxis	Ethmoid	Excision of metastasis only	Death after 4 months
Ikeuchi T *et al.*, 1998[11]	58/M	Frontal swelling	Frontal	Surgical extirpation and nephrectomy	NA
Maheshwari G *et al.*, 2003[12]	57/M	Headache and epistaxis	Ethmoid	Near-total excision of metastasis	No recurrence at 30 months
Fyrmpas G *et al.*, 2011[13]	79/F	Epistaxis	Ethmoid and Frontal sinus	TKI	No recurrence at 9 months
Morvan JB *et al.*, 2011[14]	53/M	Rhinorrhea	Sphenoid	Sphenoidectomy	NA
Bechara GR *et al.*, 2012[15]	65/M	Epistaxis and sinusitis	Maxillary	Nephrectomy followed by TKI and local radiotherapy	NA
Nayak DR *et al.*, 2006[16]	70/M	Diplopia	Sphenoid	Radiotherapy	Lost to follow-up
Kokenek-Unal TD *et al.*, 2016[17]	50/M	Nasal obstruction and snoring	Maxillary	NA	Recurrence at 1 year
Sgouras N *et al.*, 1995[18]	85/M	Epistaxis	Frontal and ethmoidal sinus	NA	NA
Homer JJ *et al.*, 1995[19]	59/M	Diplopia	Ethmoid	NA	No recurrence at 2 yrs
Matsumoto Y *et al.*, 1982[20]	73/M	Epistaxis	Maxillary and Ethmoid	NA	Death at 1 year because of generalized metastasis
Matsumoto Y *et al.*, 1982[20]	73/M	Epistaxis	Ethmoid	NA	No recurrence at 3 years
Gottlieb MD *et al.*, 1998[21]	58/M	Headache and proptosis	Ethmoid and maxillary	Local excision of the mass	No recurrence at 62 months
He YF *et al.*, 2014[22]	35/M	Mass in maxillary	maxillary	Excision and nephrectomy	Death after 2 years
Singh I *et al.*, 2004[23]	70/M	Diplopia	sphenoid	NA	Lost to follow-up after 3 months

NA:Not available, TKI:Tyrosine kinase inhibitor, RN:Radical nephrectomy

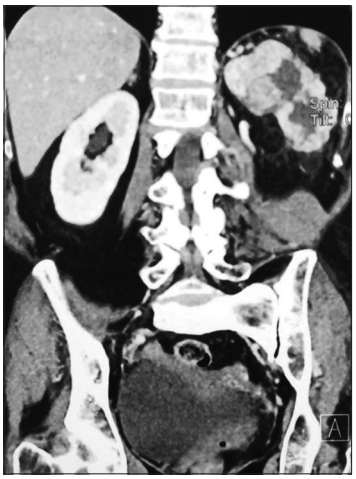

Figure 5: Coronal section CECT of the abdomen and pelvis showing heterogeneous enhancing mass at the mid and lower pole of the left kidney

result. Cytoreductive nephrectomy can be considered in good and intermediate-risk patients but the CARMENA trial showed that sunitinib only is not inferior to sunitinib and nephrectomy in the management of these patients.[24] Our patient opted for targeted molecular therapy over surgery and showed a partial response at 6 months and she is under regular follow-up.

Conclusions

Isolated metastasis of RCC to PNS is quite unusual and should be considered during the evaluation of sinonasal lesion. The multidisciplinary approach of treatment can considerably improve the quality of life and survival in selected patients.

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Conflicts of interest

There are no conflicts of interest.

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