

# Renal cell carcinoma metastases as initial presentation in tongue: A rare occurrence

Priyanka Putcha, Philip Scolaro, Seshadri Thirumala

## CASE REPORT

A 65-year-old male presented to his ENT physician for evaluation of tongue lesion on the left side. It has been present for about six weeks and he first noticed this after he had COVID in early December. The lesion started out small and has gotten little bigger over a period of three to four weeks. No pain or discomfort was associated with it and the patient denied any history of trauma to the area. He does not smoke and drinks alcohol occasionally. On detailed ENT examination, a sub-mucosal mass was observed on the left side of the tongue measuring 15 mm in maximal diameter pushing the lateral border of the tongue to protrude outward (Figure 1A). A 1 mm area of ulceration on the left tongue was present possibly secondary to tooth rubbing on it. Remainder of the ENT was essentially normal. No other constitutional symptoms were reported. A clinical diagnosis of benign tumor was made and the mass was excised completely with an overlying ellipse of mucosa attached to it. The excised specimen was sent for pathologic evaluation.

Histologic evaluation showed a malignant, predominantly clear cell tumor with prominent vasculature. The tumor cells were large with abundant clear cytoplasm and conspicuous nucleoli (Figure 1B). Mitoses were frequent. The tumor cells were diffusely and strongly positive for PAX8 (Figure 1C), CD10, and CK while negative with antibodies tested against including S100 and SOX10. An ERG stain highlighted the vasculature within the tumor. Based on positivity for PAX8, CD10, and CK, a diagnosis of metastatic clear cell

renal cell carcinoma was made. Subsequent computed tomography (CT) examination confirmed presence of a 9 cm by 5 cm mass in the upper pole of right kidney with invasion into the renal vein (Figure 1D). Chest CT revealed extensive pulmonary metastatic disease with involvement of hilar nodes. He was considered a non-surgical candidate for nephrectomy, due to extensive metastatic disease in the spine, lung, and liver and has since been started on immunotherapy.

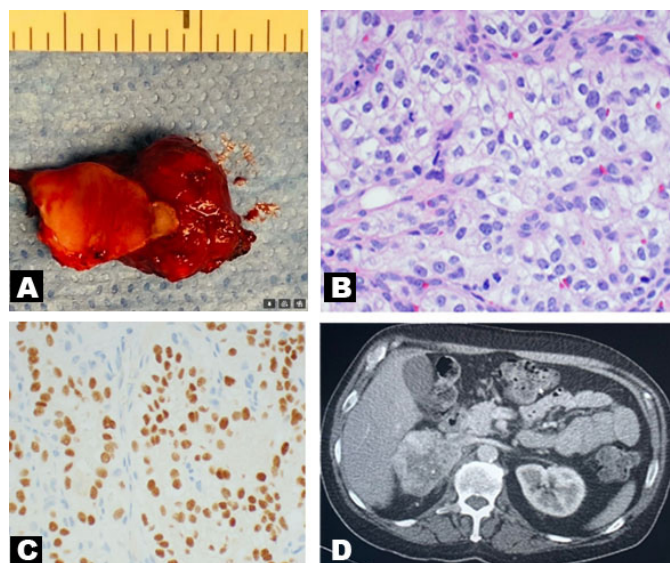


Figure 1: (A) Excised specimen of tongue with circumscribed tan brown mass attached to the mucosa. (B) H&E section showing tumor with prominent nucleoli (400×). (C) IHC section showing PAX8 positive tumor cells (400×). (D) CT image showing right kidney tumor invading into the renal vein.

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## DISCUSSION

Carcinomas of the kidney account for approximately 3% of all malignancies and ninth most common neoplasm in the United States [1]. The American Cancer Society estimates about 76,080 new cases of kidney cancer and 13,780 deaths from this disease in the year 2021. Renal cancers occur more commonly in males by a ratio of 3 to 2. Most renal tumors arise in the renal tubular epithelium

and approximately 70% of these tumors are of clear cell type. Clear cell carcinomas of the kidney are characterized by loss of genetic material in chromosome 3p and 14q [2].

Distant metastases from primary renal cell carcinoma are very common particularly to the brain, lungs, liver, and pancreas; however, metastases to unusual sites like tongue are relatively rare. Renal cell carcinomas are third most common source of metastases to head and neck region after lung and brain [3]. Of the head and neck sites, paranasal sinuses are common sites and tongue as a skeletal muscle is extremely rare to receive metastases.

Azam et al. in 2008 [4] in a meta-analysis covering over a period of 97 years from 1911 to 2008 found 28 cases of renal carcinoma metastases to tongue. Of these 28 cases, only 3 (10%) were reported as initial presentation in the tongue. In a more recent meta-analysis in 2017, Raiss et al. [5] reported 18 cases of tongue metastases, of which 6 (33%) were reported as initial presentation in tongue. In their study, 13 patients were male, 4 female patients and 1 reported as unknown and the age ranged from 35 to 71 years. Of the 3 patients with tongue as initial presentation, one had local excision of the lesion followed by nephrectomy and alpha interferon therapy, the second received cryosurgical therapy of the tongue lesion, and the third patient had surgical excision followed by Sorafinib therapy. Our patient had extensive metastatic disease in bones, lungs after the initial diagnosis in tongue with a large non-resectable renal mass and is currently on Opdivo and Keytruda immunotherapy on an outpatient basis.

## CONCLUSION

The importance and accurate diagnosis of renal cell carcinoma is critical as therapy for these tumors is different from primary tumors of the tongue. Many tumors of the head and neck, tongue, and minor salivary glands in particular have clear cell morphology. Differentiating these tumors from clear cell renal cell carcinoma metastases can be challenging. Clinical history and thorough evaluation with appropriate application of immunohistochemical stains should be made to distinguish these tumors and arrive at a correct diagnosis.

**Keywords:** Metastases, PAX8, Renal cell carcinoma

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## Author Contributions

Priyanka Putcha – Conception of the work, Interpretation of data, Drafting the work, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Philip Scolaro – Acquisition of data, Drafting the work, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Seshadri Thirumala – Conception of the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

## Guarantor of Submission

The corresponding author is the guarantor of submission.

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## Consent Statement

Written informed consent was obtained from the patient for publication of this article.

## Conflict of Interest

Authors declare no conflict of interest.

**Data Availability**

All relevant data are within the paper and its Supporting Information files.

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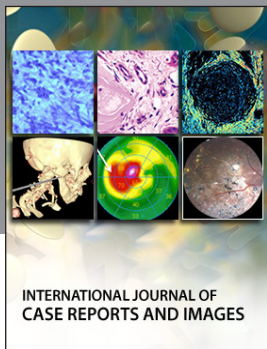
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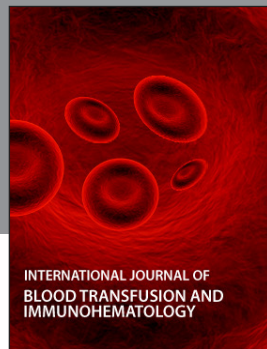
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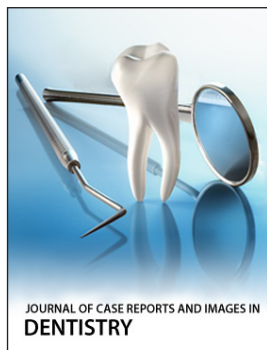
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