

Unusual Site of Metastasis in a Case of Renal Cell Carcinoma- A Case Report


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Summary

Renal cell carcinoma (RCC) is heterogeneous and comprises several histological cell types with different genetics, biology and behaviour. By the time it is discovered, patients with RCC often have advanced disease. The initial symptoms of RCC often include a classical triad of haematuria, flank pain and an abdominal mass. The other signs and symptoms include weight loss, fever, hypertension (resulting due to secretion of renin by the tumour) and malaise. RCC most commonly metastasises to lymph nodes, lungs, liver, adrenal glands, brain or bones. RCC metastasis to the oral cavity is only 1% of all malignant oral tumours and is seen in the tongue, palate, buccal mucosa, gingiva and lips. The advanced stage of the disease upon presentation poses a challenge to the clinicians. In our case, a 50-year-old male patient, a known case of RCC presented with a lesion over the upper lip. Histopathology and immunohistochemistry was suggestive of clear cell carcinoma, compatible with metastatic RCC.

Keywords: Renal cell carcinoma (RCC), Metastasis, Immunohistochemistry, Clear cell neoplasm

Introduction

Renal cell carcinoma (RCC) is the most common type of renal tumour noted in adults, especially in the age group of 50-70 years. Men have a higher incidence of RCC than women (approximately 1.6:1).^{1,2} In early RCC, the five-year survival rate is 65–90%.³ It is third on the list to metastasize to the oral cavity following lung and breast carcinoma.⁴ Rich vascular proliferation in RCC leads to hematogenous spread responsible for distant metastasis.

Generally, metastasis from RCC is seen in the lungs, bone, liver, adrenal glands, and brain. However, spread to the oral cavity represents widespread disease and is indicative of poor prognostic value. Sometimes, oral metastasis may be the first manifestation of a malignancy at a distant site. Immunotherapy and targeted therapy have been tried successfully for metastatic RCC.^{5,6} A case presentation of unusual oral metastasis from RCC is described here.

Case report

A 50-year-old male patient presented to the Surgical Oncology OPD with a lesion over the upper

lip. He gave a history of weight loss over the last three months. Three years back, he was diagnosed as a case of RCC with metastasis. He underwent right radical nephrectomy; thereafter he was on palliative chemotherapy.

On clinical examination, the lesion measured 4cm×3cm in its greatest dimension. (Figure 1) It had a pedunculated stalk and was exophytic, non-pulsatile with focal hemorrhagic crusting over it with associated poor oral hygiene. (Figure 2) On palpation, the lesion was firm, nontender and did not bleed on touch. Radiological examination revealed erosion of medial and posterolateral walls of right maxillary sinus with few nodular soft tissue opacities in both lung fields, heterogeneously enhancing soft tissue density lesion involving left suprarenal region and metastasis to clavicle and sternum.

Excisional biopsy was performed under local anaesthesia. Histological examination showed clear cell morphology. (Figure 4) Immunohistochemistry report showed strong positivity for Pax-8 and focal positivity for AE1, EMA and Vimentin whereas it was negative for CK, CEA, CD10 and p63.

Based on the above findings, a final diagnosis of single oral RCC metastatic was made. The patient was referred to Medical Oncology department for further treatment, where he was put on targeted therapy, Inj sunitinib 50 mg, two weeks on, one week off, until progression.

Discussion

RCC arises from the lining of proximal convoluted tubules. In RCC, usually a triad of flank pain, hematuria, and abdominal mass is seen. The common organs where RCC metastasises are lungs, lymph nodes, bone, liver, adrenals, contralateral kidney, and brain. Rarer regions of spread are tongue, palate, gingiva, nasal cavity, maxillary sinus, larynx, parotid and thyroid glands.^{1,2,8} Rarely, metastasis to lip and intraoral region may occur after a few months or years of nephrectomy. Twenty to thirty percents patients have reported distant metastasis after



Figure 1: Presented with 4x3 cm swelling over upper lip



Figure 2: Intra operative picture showing pedunculated lesion



Figure 3: Immediate post op picture showing suturing

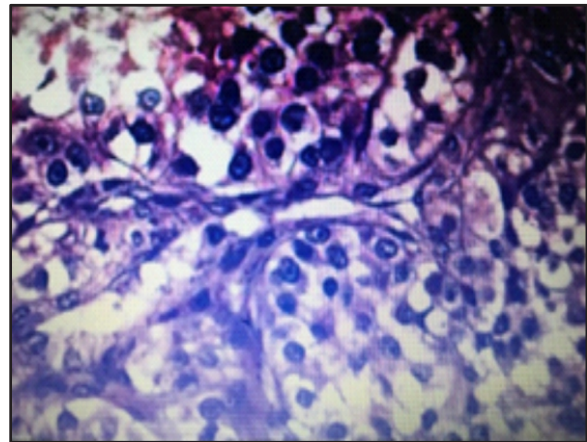


Figure 4: Hematoxylin and eosin stained specimen showing clear cell specimen showing clear cell

nephrectomy.^{8,9,10} Other than the usual routes of dissemination, RCC aggressively spreads through Batson's plexus and thoracic duct and is responsible for poor survival rates.^{2,8}

To differentiate clear cell tumours on the basis of histological characteristics, light microscopy alone is not useful as it shows similarities with clear cell malignancies of salivary glands, clear cell variant of odontogenic tumours and other metastatic clear cell carcinomas⁷ Thus, immunohistochemistry (IHC) acquires an important role in differentiating other clear cell variants as it uses special stains. RCC expresses focal cytokeratin positivity whereas salivary gland carcinoma exhibits diffuse positivity. RCC is also positive for vimentin.⁷ In our case, IHC showed positivity for pax 8 and vimentin.

Oral metastasis from RCC are seen in the advanced inoperable stages wherein palliative chemotherapy may be the only treatment option available. Azam et al¹¹ surgically debrided an RCC metastasis to the tongue and followed it up with radiotherapy for the remaining foci. Kyan and Kato¹² resected a lingual mass, then administered interferon- α and interleukin-II therapy. Yet, mortality may occur

within one year of diagnosing oral cavity metastasis; therefore, therapeutic decisions should be taken to maximize comfort and minimize morbidity considering the poor long term prognosis of the disease.

Prolonged survival has been noted in clinical trials with immunotherapeutic agents such as vascular endothelial growth factor inhibitors - bevacizumab, sunitinib, sorafenib.^{2,10,11,12} New onset lesions in patients with previous history of RCC or nephrectomy should be regarded with due suspicion for distant metastasis.

Conclusion

In rare instances RCC may metastasise to the head and neck, in which case the prognostic value decreases. However, even recognition of RCC metastasis is a challenge in itself, requiring not only histopathology, but also IHC correlation, as also an increased risk of bleeding during biopsy. After establishing the diagnosis, newer therapeutic agents such as immunotherapy and tyrosine kinase inhibitors as well as clinical trial participation should be discussed with the patients in spite of poor prognosis.

References

1. Flanigan RC, Campbell SC, Clark JI et al: Metastatic renal cell carcinoma. *Curr Treat Options Oncol* 2003;4:385-390
2. Kotak A, Merrick G : Presentation of metastatic renal cell carcinoma as a lip lesion. *J Surg Case Rep*. 2014;2014: pii: rju083
3. "Kidney cancer". nhs.uk. 2017-10-23. Archived from the original on 3 October 2017. Retrieved 19 March 2018
4. Vasilyeva D, Peters SM, Philipone EM et al: renal cell carcinoma metastatic to the maxillary gingiva: A case report and review of literature. *J Oral Maxillofac Pathol* 2018;22:102-107
5. Singer EA, Gupta, Gopal N, Marchalik, Daniel et al: "Evolving therapeutic targets in renal cell carcinoma". *Current Opinion in Oncology* 2013 25: 273-280
6. Syn NL, Teng MWL, Mok, TSK et al : "De-novo and acquired resistance to immune checkpoint targeting" *Lancet Oncology* 2017 18 : e731-e741
7. Kishore M, Chauhan DS, Dogra S: Unusual presentation of renal cell carcinoma: a rare case report. *J Lab Physicians* 2018;10:241-244
8. Arrabal-Polo MA, Arias-Santiago SA, Aneiros-Fernandez J et al: Cutaneous metastases in renal cell carcinoma: A case report. *Cases J* 2009;2:7948
9. Pritchuk KM, Schiff BA, Newkirk KA et al: Metastatic renal cell carcinoma to the head and neck. *Laryngoscope* 2002;112:1598-602
10. Porter NA, Anderson HL, Al-Dujaily S: Renal cell carcinoma presenting as a solitary cutaneous facial metastasis: Case report and review of the literature. *Int Semin Surg Oncol* 2006;3:27
11. Azam F, Abubakerr M, Gollins S: Tongue metastasis as an initial presentation of renal cell carcinoma: A case report and literature review. *J Med Case Rep* 2008; 2:249
12. Kyan A, Kato SN: Renal cell carcinoma metastatic to the base of tongue: A case report. *Hinyokika Kyo* 2004;50:791-793
13. Fukuda M, Miyata M, Okabe K et al: A case series of 9 tumors metastatic to the oral and maxillofacial region. *J Oral Maxillofac Surg* 2002;60:942-944