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RENAL CELL CARCINOMA METASTASING TO UNUSUAL SITES WITH RARE PRESENTATIONS: TWO CASE REPORTS

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ABSTRACT

Renal cell carcinoma (RCC) has high metastatic potential but metastasis to head and neck region and multiple cutaneous metastases are extremely rare. Metastases to oral cavity are uncommon and account for about 1% of oral malignant tumors. Diagnosis of cutaneous metastasis is difficult especially in absence of history of primary tumor. We report two cases of RCC which metastasized to very unusual sites i.e. soft palate and skin. The first case presented 17 years after nephrectomy had been performed for RCC whereas the patient with cutaneous metastasis had no history of primary tumor. The diagnosis was suspected on fine needle aspiration smears and confirmed by histopathology. Metastasis of renal cell carcinoma can be observed months to years after nephrectomy. In patients with a known history of RCC, it is therefore necessary to regard head and neck lesions with a high index of suspicion for malignancy.

Keywords: *Metastasis, Soft Palate, Cutaneous, Nephrectomy*

INTRODUCTION

Renal cell carcinoma (RCC) is the most frequent urological malignancy in adults with a male preponderance. It accounts for approximately 3% of adult malignancies and 90%–95% of neoplasms arise from the kidney. RCC has high metastatic potential, which requires early diagnosis and management. Metastases have been reported to develop 17 years or more after the primary lesion is removed (Gottlieb and Roland, 1998). Most frequent sites include lung, liver, lymph nodes, opposite kidney, bone and brain, cutaneous metastasis and metastasis to head and neck being extremely rare (Som *et al.*, 1987). Oral metastases are even less common and account for about 1% of oral malignant tumors. Metastasis of RCC to soft palate is a rare occurrence and can be mistaken for neoplastic conditions of oral cavity. Intraoral sites of RCC deposits can involve tongue, palate, buccal mucosa, gingiva, lips etc. Cutaneous metastasis develops in 5-10% of high stage carcinomas most frequently in association with breast, lung, colon, ovarian and malignant melanomas. Although cutaneous metastases rarely develop in cancers of urogenital system, they can occur in RCCs. There are many case reports citing cutaneous metastasis of renal cell carcinoma but ours is a rare case with multiple cutaneous metastases simulating neurofibromatosis in a patient with no prior history of any primary tumor (Torrelles *et al.*, 2007; Polo *et al.*, 2009). Metastatic pathway of RCC is highly unpredictable and is known for its notorious lymphatic drainage and tendency for hematogenous spread at the same time (Marioni *et al.*, 2007).

CASES

Case Report 1:

A 62 year old male presented in dental OPD with a soft enlarging swelling in right posterior soft palate of one month duration. The mass was red, fungating & ulcerated which measured approximately 3 x 2.5 cm. and bled on touch. Ultrasonography of neck revealed multiple enlarged cervical lymph nodes, largest measuring 2 x 1 cm at the angle of mandible. On careful examination, patient gave the history of nephrectomy for RCC, about a month back. Patient did not have any other significant complaint. FNAC was performed using all aseptic conditions. Smears examined revealed high cellularity with presence of clusters of large cells with relatively low N: C ratio. The cells had moderate to abundant well defined, pale areas vacuolated cytoplasm with round to oval nucleus having mild anisonucleosis and nucleolisation at places (Figure 2). Some of these cells showed pink eosinophilic granular material in the cytoplasm (Figure 3). Numerous degenerated cells, bacterial colonies and inflammatory cells were also noted in a hemorrhagic background. Taking in consideration the cytological findings and past history, a

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cytological diagnosis of metastatic deposits from RCC was made which was subsequently confirmed on histopathology (Figure 4). Patient was kept on conservative management with chemotherapy & radiotherapy and is on follow-up.

Case Report 2

A 58 year old male presented in Surgery OPD with multiple cutaneous swellings throughout the body since one year (Figure 1). He also gave history of increase in the size of the swellings since then. Clinically, neurofibromatosis was suspected. On ultrasonography, a heteroechoic lesion of size 7.7 x 7.3 cm was seen in the midline in abdominal cavity anterior to aorta and displacing Inferior vena cava and showing flow on colour Doppler. Neurogenic tumor was suspected. Fine needle aspiration of the swellings were performed and revealed clusters and singly scattered cells with relatively low n:c ratio. Cells had moderate to pale, ill defined vacuolated cytoplasm at places and round to oval nucleus with mild to moderate anisonucleosis. Nuclear chromatin was fine to coarsely granular showing nucleolisation at places. Cytological features were suggestive of deposits from neoplasm with clear cell change possibilities included metastasis from kidney, pancreas and adrenal. Histopathological and immunohistochemical examination confirmed metastasis from renal cell carcinoma.



Figure 1: Multiple cutaneous swellings in a patient with no history of a tumor of primary origin

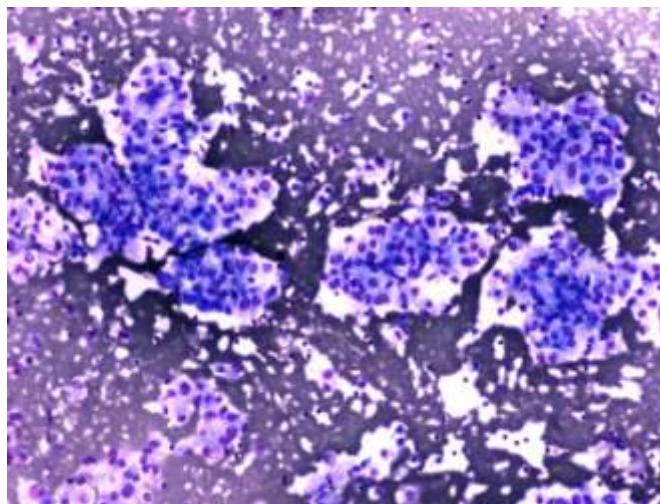


Figure 2: Fine needle aspiration smear showing highly cellular smear with cells lying in clusters and sheets with relatively low n:c ratio and moderate to abundant pale cytoplasm [Cytology smear, Giemsa stain;200x]

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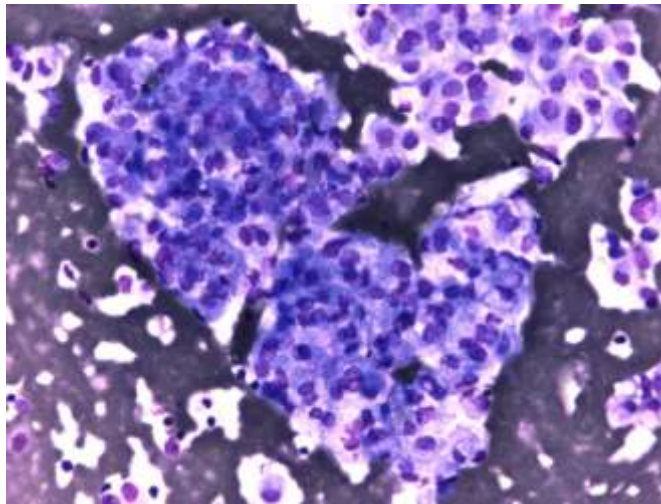


Figure 3: Fine needle aspiration smear showing cells with low n:c ratio and moderate amount of cytoplasm with presence of granular eosinophilic material in cytoplasm of some of the cells [Cytology smear, Giemsa stain;400x]

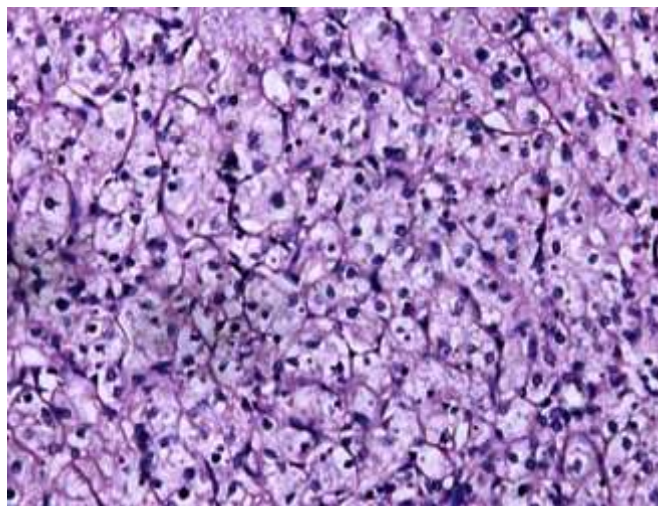


Figure 4: Histopathological section showing cells with low n:c ratio, clear cytoplasm and hyperchromatic nuclei in renal cell carcinoma metastatic to the soft palate.[Haematoxylin & eosin stain; 200x]

DISCUSSION

RCC is the third most common neoplasm to metastasize in head and neck region. Metastasis of RCC to oral cavity is an extremely rare finding with a poor prognosis. It is found in 8-16% of all cases renal metastasis (Gottlieb and Roland, 1998; Som *et al.*, 1987). Rich vascular structure of RCC facilitates hematogenous extension and development of distant metastasis. Almost 25% of patients with RCC have distant metastasis during the time of diagnosis. The latent period of metastasis ranges from 20 – 25 years. The clinical behaviour of metastatic RCC is unpredictable. Metastasis of RCC in soft palate is a rare occurrence and can be mistaken for benign tumors such as hemangioma or inflammatory swellings, other primary malignant tumors of soft palate and other metastatic tumors. The differential diagnosis include clear cell rich mucoepidermoid carcinoma or odontogenic carcinoma, metastasis from melanomas, prostate, colon, thyroid and liver carcinomas etc (Hart *et al.*, 2005; Lang *et al.*, 2003). Incidence of cutaneous metastasis is 3.4% in RCC. Most cases of cutaneous metastasis reported till now were males (Porter *et al.*, 2006; Kouroupakis *et al.*, 1995). Our findings are also in support of earlier studies

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suggesting higher incidence of cutaneous metastasis in males. Most cutaneous metastasis present as solitary, red to purple skin lesions. The rich vascular component causes confusion with hemangiomas, pyogenic granulomas and Kaposi's sarcoma whereas morphologically it can be confused with cutaneous cysts, horns, lymphomas or abscesses (Jilani *et al.*, 2010; Koga *et al.*, 2000). Our case presented as multiple cutaneous swellings which created suspicion of neurofibromatous swellings both morphologically and radiologically. Histopathological differential diagnosis include clear cell adenocarcinomas, skin appendage tumors including benign and malignant sebaceous tumors, eccrineacrosiomas, soft tissue sarcomas and malignant melanomas with clear cell component (Jilani *et al.*, 2010; Koga *et al.*, 2000; Brownstein and Hewig (1972); Ahmad *et al.*, 2008; Williams and Heaney (1994). Since skin metastases imitate other dermatological diseases and the diagnosis is often missed on histopathological examination, RCC should always be kept into consideration during differential diagnosis of tumors with clear cell morphology. The development of head and neck metastasis and cutaneous metastasis in RCC are associated with poor prognosis. Treatment options are limited. Management of these patients should be individualised depending upon the general health of the patient. Most of the times, the treatment is palliative in nature with a choice of surgical excision, chemotherapy and radiotherapy. Hence, awareness of metastasis of RCC in the oral cavity is essentially required & careful examination should be done for an early diagnosis and rapid management (Lang *et al.*, 2003).

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