



## An oral metastatic carcinoma guiding to discovery of a renal carcinoma: A case report

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### ARTICLE INFO

#### Article Type: Case Report

Received: 11 Feb 2016

Revised: 10 Mar 2016

Accepted: 5 Jun 2016

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### ABSTRACT

Metastatic lesions represent 1-8% of all malignant tumors of the mouth and jaws, which are regarded as rare sites of metastases from different primary tumors. Metastases in mouth soft tissue are also rare, and within these it is on the gums where they more frequently occur. Primary tumors which metastasize to the mouth are most commonly: lung, breast, and kidney. Clear cell carcinoma is the most frequent cancer of the kidney (60-80% of cases). This tumor has a great propensity to metastasis. We report a case of a 45-year-old man with renal cell carcinoma in which the gingival symptoms (metastatic tumor) preceded the discovery of the primary lesions.

**Key words:** Clear cell carcinoma, Metastasis, Metastatic tumor, Oral metastatic carcinoma, renal cell carcinoma.

### Introduction

Metastatic lesions represent 1-8% of all malignant tumors of the mouth and jaws, which are regarded as rare sites of metastases from different primary tumors [1-3]. The primary sites differ between genders, but overall the most common primaries in descending order of frequency are from lung, breast, kidney, genital organs and skin [1,4]. 70% of oral metastases are manifested after the primary tumor becomes evident, while the remainder 30% are the first clinical sign of primitive tumor spreading [5]. The mean age span of occurrence is the fifth and sixth decades, though it may occur at any age [6]. The lesions are more common in men than in women [3,4].

Metastatic tumors in the oral cavity can be located in the soft perioral tissues, approximately 15%. Maxil-

lary bones are the most common locations for metastases (85%), the mandible being more often affected (80-90%) than the maxilla (10-20%) [2]. Some metastatic bony lesions involved the oral soft tissue by extension [4]. Within these the molar and premolar regions are the areas more commonly affected by metastases. Location in soft tissue is mainly adherent gums [6]. The gingival and alveolar mucosa accounted for 54.8%, followed by tongue and then much less commonly the tonsil, palate, lip, buccal mucosa and floor of mouth [4]. As for the clinical, oral metastases may present themselves in an asymptomatic manner or manifest as: tumor, pain, ulcer, Paresthesia, hemorrhage, Periodontitis, trismus and pathological fracture; establishing symptomatology in a short period of time [2].

Exophytic metastatic tumors are usually asymptomatic rapidly growing nodular or polypoid masses. The surfaces may be smooth and covered with intact mucosa, which varies from pink to red, depending on the integrity of covering epithelium, the vascularity, the fibrosity and the amount of inflammation present. Large tumors frequently develop an ulcerated surface from chronic trauma. The resultant appearance will be red and white and will ulcerate and bleed easily. The peripheral lesions may invade adjacent bone and produce a radiographic appearance of a solitary, ragged and poorly margined radiolucency [4].

The occurrence of a metastatic lesion to the oral cavity is, generally, a sign of bad prognosis, evidence of spread neoplasm disease indicating fetal evolution within a few months interval following diagnosis of oral metastases. Lower than 10% of patients survive 4 years after diagnosis [5,7]. This case illustrates that oral metastases can be the initial presenting feature of the disease and that it has considerable potential for misdiagnosis.

### Case report

A forty-five year old man was referred to the oral medicine department of Mashad University in 2005 complaining of a mass which had been appeared from one month ago. He had also noticed that 4 months earlier a small mass was adjacent to the left lateral of the maxilla, which had been excised along with extraction of lateral tooth, but it had recurred from 4 weeks ago and had been enlarged rapidly. Under oral examination a large red-purple rubbery, sessile exophytic lesion with smooth surface was observed on the left buccal maxillary ridge which extended to the palate and had crusted in a part of the lesion which appeared from lower teeth trauma (Fig 1). Periapical radiography showed a saucer shape bone resorption (Fig 2). His medical history included nephrolithiasis 7 years ago. The differential diagnosis was a malignant mesenchymal tumor like as lymphoma or metastatic tumor based on the very fast growing lesion and its smooth surface; also the bone resorption supported this possibility.

We ordered the laboratory tests, and after one week, he came back and the lesion had a considerable development (Fig 3). His para-clinical results included:

1-hematological test: anemia

2-urine analysis: normal

3-kidneys sonography: compensatory hypertrophy of the right kidney and diameter reduction of left

cortex.

Biopsy was taken of intra-oral lesion, reporting clear cell carcinoma, probably metastatic carcinoma or salivary gland clear cell (Fig 4-6). Chest x-ray in order to determine of lymph nodes involvement or possibility of metastasis proved negative (Fig 7). Patient was admitted to the nephrologist in order to define of tumor and studies were completed and showed extensive destruction of the left renal by tumor (Fig 8). Renal cell carcinoma was the diagnosis of the nephrologist. Unfortunately he died 6 months later.



Fig 1. Clinical feature of the lesion in the first visit.



Fig 2. Saucer shape resorption of the crestal bone



Fig 3. Extensive development of the lesion one week later.

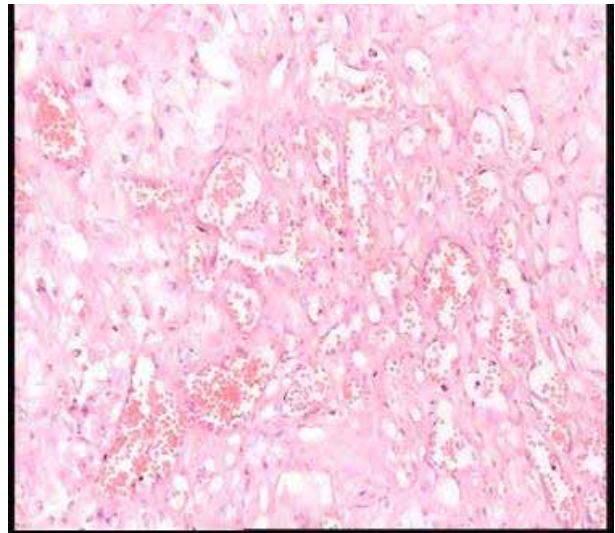


Fig 6. Proliferation of the blood vessels in the connective tissue of the tumor (H&E stain, magnification  $\times 100$ ).

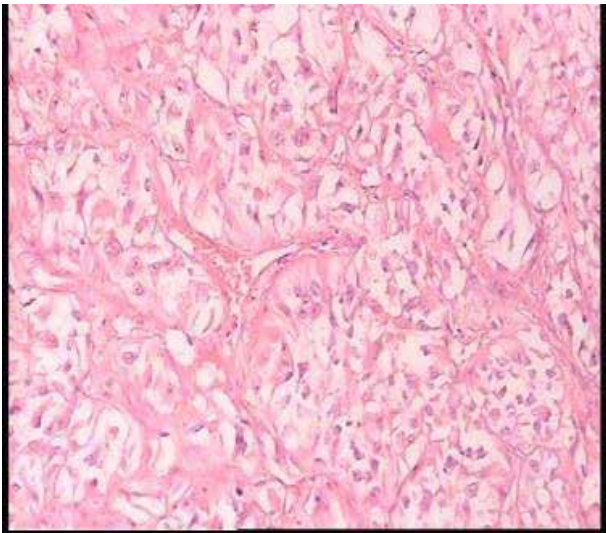


Fig 4. Polymorphism of malignant clear cells (H&E stain, magnification  $\times 100$ ).



Fig 7. Chest X ray of the patient without any lymph node involvement.

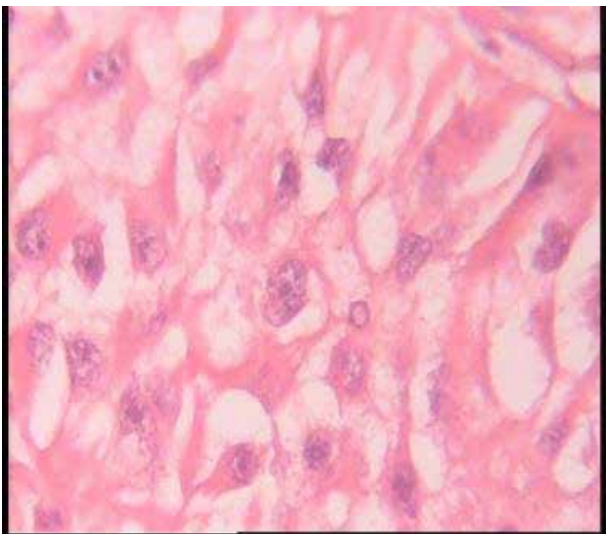


Fig 5. Neoplastic cells. Cellular polymorphism with clear cytoplasm and vesicular nuclei (H&E stain, magnification  $\times 400$ )

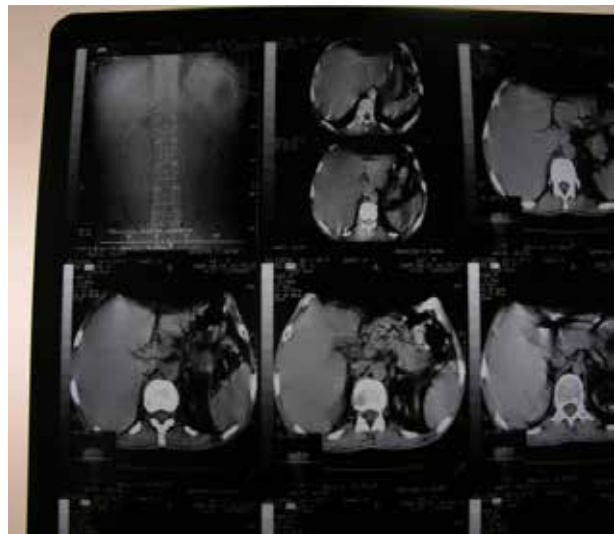


Fig 8-1. Extensive involvement of the left kidney.



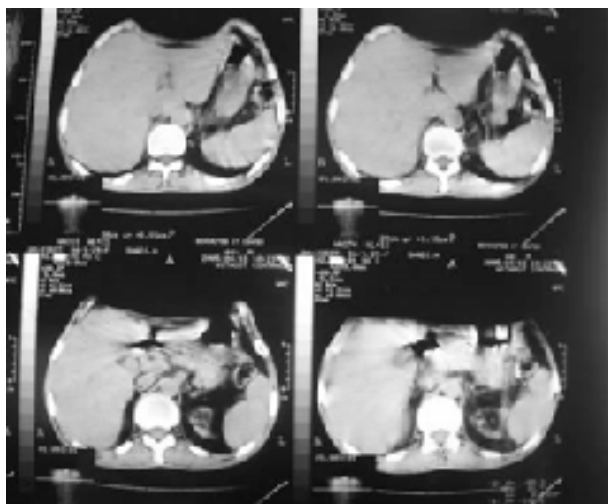


Fig 8-2. Extensive involvement of the left kidney.

## Discussion

This report describes the case of renal cell carcinoma (RCC) in which the gingival symptoms preceded the discovery of the primary lesions. RCC is initially a slow-growing tumor arising from the epithelium of the renal tubules. Ultimately, it becomes more necrotic and invasive, involving the vasculature of the surrounding tissues and disseminating widely [8]. Malignant renal tumors are the fourth most common tumor to metastasize and between 4% and 50% of cases have metastasis at the time of presentation [9]. Boles and Cerny [10] reviewed cases of RCC and showed that 15.2% had head and neck metastasis as the presenting symptom. Between 50% and 61% of the tumors metastasizing to the nasal cavity and paranasal sinuses were found to be of urogenital tract origin, 80% of these tumors were RCC. Most of these patients had epistaxis as the presenting complaint [9]. Metastatic RCC to the head and neck was seen in the following locations: nasal cavity, lower lip, hard palate, tongue, and maxillary sinus. Presenting signs were loose upper molars, dysphagia, nasal obstruction, lower lip lesion, recurrent epistaxis, and foul nasal drainage. Histological studies confirmed metastasis of RCC in all four patients [11].

Dentists must recognize oral soft tissue metastases because they can be the first sign of an undiscovered malignancy, and they can be easily mistaken with several different benign lesions. The most common lesions that have similar clinical appearance to metastatic tumors are: inflammatory hyperplasia, squamous cell carcinoma, Kaposi's sarcoma, minor salivary tumors, primary mesenchymal malignancies, proliferative chronic infections and amelanotic melanoma [4]. Inflammatory hyperplasia can usually be identified by finding a chronic irritant associated with the lesion. However,

the gingival is the most common site for soft tissue metastatic lesions and for inflammatory hyperplasia, so the metastatic lesions must always be included in the list. If the underlying bone shows bone resorption, malignancy must be seriously considered [4].

The suspicion of oral metastatic tumor is enhanced by symptoms of a primary tumor elsewhere or a history of previous treatment of such a tumor. However, the metastatic oral lesion may be the first manifestation of a primary tumor in as high as 33% of cases [12]. The interval between development of the primary tumor and the metastasis has been reported about 5-36 months. There is confusion in differential diagnosis of metastatic lesions in the patients who do not have any history of their primary tumors [13].

These metastatic lesions can be difficult to diagnose clinically, and frozen sections are unreliable because of the many tumors that may appear as a clear cell lesions. The differential diagnosis of clear cell tumors should include: acinic cell carcinoma, calcifying epithelial odontogenic tumor, mucoepidermoid carcinoma, sarcoma and many others [14]. Peris [15] has proposed four criteria for definition of metastatic gingival tumor:

- 1- Primary tumor must be known.
- 2- No evidence of direct tumoral extension between primary and secondary tumor.
- 3- No involvement of underlying bone.
- 4- Histopathological pattern similar to primary tumor.

The prognosis depends on clinical staging, size, histology of the lesion, degree of local infiltration, lymph node and circulatory involvement and the presence of distant metastases [5]. A number of patient-related factors remain important prognostically, including performance status, C-reactive protein and thrombocytosis, but also immunological factors (e.g. expression of B7-H1 by renal cell carcinomas is associated with progression). Additional prognostic information may be derived from a range of molecular markers [16]. Although surgical resection of the primary tumor remains the mainstay of therapy, RCC is characterized by a high frequency of metastases at diagnosis or relapse following nephrectomy. Patients with distant metastases have a poor prognosis, with a 5-year survival rate of less than 10% [17]. RCC is notoriously resistant to chemotherapy and radiotherapy [17-18]. Talley et al [19] emphasized that metastatic RCC has an extremely

poor prognosis, with more than 80% of patient's dead of disease at one year.

### Conclusion

For a lesion in the oral cavity in a patient with neoplasm disease a metastatic lesion should be suspected. However in 30% of cases oral metastases is the first indicating of distant malignant tumor [6,15], which should be strongly considered to establish diagnosis. If a metastatic lesion is suspected, whole body examination, especially the more common sites for the primary tumor like kidney, should be considered.

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*Please cite this paper as:*

Shirazian Sh, Bahrami N; An oral metastatic carcinoma guiding to discovery of a renal carcinoma: A case report. *J Craniomax Res* 2016; 3(3): 230-234