

# Oral Soft Tissue Metastases

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Tumors that metastasize to the oral cavity, comprising only about 1% of all oral malignant neoplasms, rarely affect oral soft tissues. The aim of the present case series report is to retrospective study five patients with metastatic tumors to oral soft tissues, retrieved from an institution in southern Taiwan. The age, gender, sites and histological types of the primary tumor, sites of the oral soft tissue metastases, and time of occurrence of metastasis as well as follow-up data of these five cases were analyzed. A dental practitioner, particularly a family dentist, may encounter with patients who have metastatic oral tumors before the primary malignancy from other organs has been identified. Although rare, metastatic tumors should be included in the differential diagnosis of an intraroral malignant neoplasm, particularly if the patient has cancer at another site. (*J. Family Dent.* 3(4): 25-30, 2009)

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**Key words:** soft tissue metastasis, family dentist, oral

## Introduction

Primary malignant tumors of the oral cavity arise mostly in the soft tissues of the mouth. More than 90% of all oral cancers are squamous cell carcinomas. Metastatic tumors to the oral cavity are uncommon, accounting for

about 1% of all oral malignant neoplasms, and their primary origin can be anywhere<sup>1</sup>. They can either involve the jawbones, where most are found in the mandibular molar region, or more rarely affect the oral soft tissues<sup>1</sup>. Although there have been two case series of metastatic

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tumors to oral soft tissue, they have been described exclusively in the journals of oral and dental surgery<sup>2,3</sup>, but none in family dentistry, to our knowledge. In fact, a family dentist may be the first to encounter a malignancy arising from another organ by identifying an oral metastasis. This study presents an analysis of patient series with metastatic tumors to intraoral soft tissues (excluding lymph node and/or tonsil<sup>1</sup>), retrieved from Kaohsiung Medical University in Taiwan.

## Materials and methods

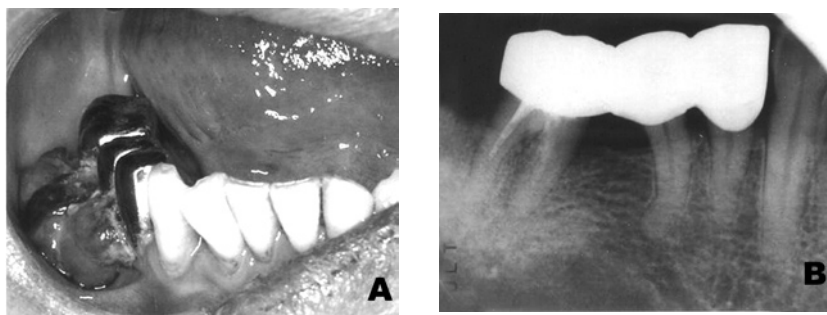
In the 15-year (1990-2004) period studied, only 5 cases could be identified in the databases of the Department of Oral Pathology, Kaohsiung Medical University, Taiwan. These 10 histopathologically confirmed cases were reviewed to determine the primary sites, metastatic region, clinical presentation and histopathological features (Table 1).

• **Table 1.** Summary of the 5 oral soft tissue metastatic cases from Kaohsiung Medical University, Taiwan

Case no.	Age <sup>1</sup> (years)	Sex	Site of primary tumor	Histological type	Site of oral metastasis	Time of occurrence of metastasis <sup>2</sup> (months)	Follow-up before death (months)
1	18	Male	Sacrum	Osteogenic sarcoma	Submental area	73	0.25
2	58	Male	Rectum	Adenocarcinoma	Upper anterior buccal gingiva	13	7
3	51	Male	Colon	Adenocarcinoma	Lower anterior lingual gingiva	2	26
4	68	Female	Liver	Hepatocellular carcinoma	Right lower bicuspid buccal gingiva	6	1
5	58	Male	Liver	Hepatocellular carcinoma	Interdental gingiva between right lower bicuspid & first molar	9	23

<sup>1</sup>at time of diagnosis

<sup>2</sup>after detection of primary tumor



• **Fig 1.** Case no. 5. A reddish, partially ulcerated, swelling between the interdental buccal gingiva of teeth 45 and 46 (A); no bony destructive lesion over the mandibular body between teeth 45 and 46 on periapical radiography (B).

## Results

### Gender and Age

Of these five patients from Kaohsiung Medical University, 4 were male and 1 female. The age of these patients ranged from 18 to 68 years with a mean of 50.6 years. The mean age for the four-men was 46.3 years whereas the age for the only woman was 68 years (Table 1).

### Primary Sites

The primary tumor was already known before the oral metastatic lesion was identified for the entire patient series. Representative clinical and radiographic findings (Case no. 5, Table 1) have been shown in figures 1 A & B. The time of occurrence of metastasis after detection of the primary tumors ranged from 2 to 72 months (Table 1). Moreover, the follow-up time before death ranged between 0.25 and 22 months. The case of osteosarcoma had the longest time between detection of the primary and identification of metastasis, but the shortest follow-up period prior to death. Two oral metastatic cases originated from the liver (40%), followed by the colon, rectum and sacrum (1 case each: 20%). With the exception of the case of osteogenic sarcoma, which had double metastases to lung and oral soft tissue; the other four cases only metastases to the oral soft tissue (Table 1). The histological diagnoses of the present patients series were four cases of carcinoma (2 hepatocellular carcinomas; 2 adenocarcinomas: one each from colon and rectum) and one case of osteosarcoma from sacrum (Table 1).

### Oral Soft Tissue Sites

For our patient series, gingiva was the predominant metastatic site (4 cases, 80%) (Figs. 1A & B), followed by the submental area (1 case, 20%) (Table 1).

### Signs and Symptoms

With the exception of the metastatic osteosarcoma,

which developed as a non-ulcerated submental swelling, all the other four metastatic lesions manifested as ulcerated, easily-bleeding gingival swellings.

## Discussion

Due to recent advances in the diagnosis and treatment of malignant tumors, the mean survival time of patients has increased. The early detection of metastasis is essential, particular with oral metastases where prognosis is usually grave, as indicated in this study in which most patients in our institution died within two years of occurrence of oral soft tissue metastasis. This is comparable to other studies in which most patients died within one year of detection of oral metastasis, whereas the 4-year survival rate is estimated to be 10%<sup>4,5</sup>. The mean time from the occurrence of the gingival metastasis to death has been reported to be no more than a few weeks or months<sup>2</sup>. Consequently, the dental practitioner's role should be emphasized as he/she may be the first to encounter metastatic disease from a known primary by correctly identifying an oral soft tissue tumor.

Most metastatic oral tumors are reported in patients in their 50s, 60s and 70s<sup>2,3,6</sup>. The mean age of the patient series in the present study was 50.6 years and 63.6 years respectively, in accord with previous studies<sup>2,3,6</sup>. Furthermore, it is also compatible with two other series of Dutch (6 cases of oral soft tissue metastasis) and Korean (18 cases of oral soft tissue metastasis) patients<sup>7,8</sup>.

There is still controversy over whether men or women are affected more frequently. According to Hirshberg et al.<sup>2</sup> metastases to the oral mucosa had a male-to-female ratio of 1.6:1. In the present study, males had a higher rate of metastatic tumors in our patient series.

Sometimes the discovery of an oral metastasis leads to the detection of an occult primary malignancy elsewhere in the body. In the current study, however, the primary tumor was already known before the oral

metastatic lesion appeared for all the patients in the two series. Keeping oral metastasis in mind is necessary when following up patients with primary cancers in other organs for metastatic disease. It has also been reported that for up to one third of the patients the oral metastasis is the first clinical sign of an unrecognized primary tumor<sup>2</sup>. In a recent study of a Korean population, 26.8% of the patients with metastatic oral lesions were the first indication of an undiscovered malignancy at a distant site<sup>8</sup>.

Liver was the most common primary site in our patient series, reflecting the fact that liver was the most frequent primary site of malignancy in Taiwan. In other series, such as that of Hirshberg et al<sup>2</sup>, lung was the most common primary causing metastases in the soft tissues of the mouth. On the other hand, gingiva was the most commonly affected site in the present patient series, similar to two other studies from Dutch and Korean populations<sup>7,8</sup>.

From their clinical appearance, gingival metastatic lesions tend to ulcerate, bleed and cause pain, so these lesions often resemble and are confused with benign reactive lesions, such as pyogenic granuloma, hemangioma, giant cell granuloma and peripheral fibroma, leading to erroneous diagnoses.<sup>9,10</sup> However, gingival metastatic lesions differ from reactive lesions because they show rapid and progressive growth, definitive diagnosis depends on biopsy and awareness of the medical practitioner who first encounters the oral lesion. The role of inflammation in increasing the affinity of metastatic cells in gingiva has been regarded as part of the pathogenesis of oral metastases<sup>2</sup>.

The treatment of metastatic tumors depends on the extent of dissemination of the tumor and the location; metastasis in the oral soft tissues should be approached surgically, whatever the spread of the tumor may be. Surgical resection has been recommended when an oral metastasis is the only one present; however, if the tumor is

widely disseminated, palliative radiotherapy or chemotherapy is recommended<sup>7</sup>. For the patient series in this review, with the exception of the case of osteosarcoma in which chemotherapy was adopted for palliative treatment, all of the patients were approached surgically.

## Conclusion

Five cases of oral soft tissue metastases from Kaohsiung Medical University in southern Taiwan were analyzed. Despite their rarity, metastatic tumors should be included in the differential diagnosis of an intraoral malignant neoplasm, above all if there is a known primary tumor and the histologic features are similar, but also because in some patients this could be the first indication of the presence of a primary tumor.

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# 口腔軟組織惡性腫瘤轉移

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惡性腫瘤轉移至口腔只佔所有口腔惡性腫瘤的百分之一，而轉移至口腔軟組織更是罕見。本文的目的是回溯性探討一系列（共五例），發生於高雄醫學大學口腔病理科之口腔軟組織惡性轉移的病例，就病患之年齡、性別，原發腫瘤與口腔軟組織轉移的位置及組織學，發生轉移及追蹤至死亡的時間加以分析。家庭牙醫師可能就病人仍未發現其他器官的惡性腫瘤而首先遇到其口腔轉移病灶，所以，雖然罕見，口腔惡性腫瘤的鑑別診斷，應包括惡性轉移，尤其是如果病人於其他位置已發現有癌症。惡性腫瘤轉移至口腔只佔所有口腔惡性腫瘤的百分之一，而轉移至口腔軟組織更是罕見。本文的目的是回溯性探討一系列（共五例），發生於高雄醫學大學口腔病理科之口腔軟組織惡性轉移的病例，就病患之年齡、性別，原發腫瘤與口腔軟組織轉移的位置及組織學，發生轉移及追蹤至死亡的時間加以分析。家庭牙醫師可能就病人仍未發現其他器官的惡性腫瘤而首先遇到其口腔轉移病灶，所以，雖然罕見，口腔惡性腫瘤的鑑別診斷，應包括惡性轉移，尤其是如果病人於其他位置已發現有癌症。( *J. Family Dent.* 3(4): 25-30, 2009 )

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