

Non-small Cell Lung Cancer Metastasis to the Oral Cavity

Aroma S Tirkey¹, R Heera², R Rajeev³, GV Thatchani⁴, Siva SP⁵

ABSTRACT

Introduction: Metastasis involves the spread of cancer cells from the primary tumour to the surrounding tissues and to distant organs. Metastatic involvement of the oral cavity is infrequent; nevertheless biopsy of oral lesions is mandatory in known cases of a distant primary malignancy. Oral metastasis usually occurs in the advanced stages of cancers and is associated with significant morbidity and mortality.

Case description: This case report describes the presentation of a metastatic lesion from a poorly differentiated non-small cell carcinoma of lung to the maxillary gingiva.

Management: The patient was referred to Regional Cancer Center, Thiruvananthapuram where he received palliative treatment.

Conclusion: The metastatic lesions can easily be mistaken for a reactive lesion. A high degree of clinical suspicion in known cases of primary malignancy is recommended for prompt diagnosis.

Keywords: Gingiva, Lung cancer, Metastasis, Oral cavity.

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INTRODUCTION

Oral metastatic tumors are uncommon and comprise approximately 1% of malignant oral neoplasms.¹ Metastatic lesions can be found anywhere in the oral cavity, and the molar region in the jawbones is the most frequently involved site; metastases to the soft tissues are extraordinarily rare constituting only 0.1% of oral malignancies.² Metastasis to oral cavity arises mainly from primary tumors located in the lung, breast, kidney, thyroid, and prostate. Though rare, oral metastases have diagnostic (one-third of them reveal an occult primary) and prognostic significance (their presence is correlated with limited survival of the patients).²

CASE DESCRIPTION

We report a case of a 50-year-old male who presented with a swelling in the upper front teeth region. Three months prior, the patient was diagnosed with poorly differentiated non-small cell carcinoma of the lung. The patient was under antiretroviral therapy since 9 years. The patient also had history of tuberculosis, rhinosporidiosis, and cardiovascular accident. Considering the comorbidities, patient received only palliative radiotherapy and supportive care. The self-reported history of the gingival lesion was rapid growth of the mass over a period of 2 days. The growth was not associated with pain or bleeding. On intraoral examination of the patient, a pedunculated, erythematous swelling of size 4 × 3 cm was noted; the swelling was present in the attached gingiva in relation to 11, 12, 21, and 22 region. It was nontender and no pus discharge was present. Level IB lymph node on the left side was palpable. Excisional biopsy of the lesion was done under local anesthesia and was sent for histopathological examination. The biopsy specimen was obtained in the form of multiple soft tissue bits which were soft to firm in consistency and were friable in nature. Microscopic examination revealed diffuse proliferation of malignant round cells in the form of sheets (Fig. 1). The round cells were having indistinct cytoplasm, cellular pleomorphism, large nuclei, and prominent nucleoli. Abnormal mitotic figures were also present (Fig. 2). Tumor giant cells and areas of hyalinization were seen around the proliferating malignant cells. Intense vascularity and focal areas of necrosis and calcifications were also noted. Immunohistochemical staining showed strong positivity

¹⁻⁵Department of Oral Pathology and Microbiology, Government Dental College, Thiruvananthapuram, Kerala, India

Corresponding Author: Aroma S Tirkey, Department of Oral Pathology and Microbiology, Government Dental College, Thiruvananthapuram, Kerala, India, Phone: +91 9431966164, e-mail: aromasadya@gmail.com

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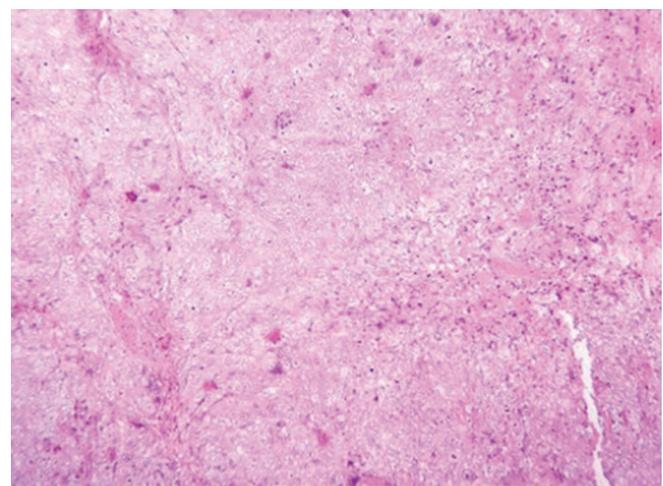


Fig. 1: Proliferation of atypical round cells in the form of sheets (H and E, 10×)

for CK7 and slight nuclear positivity for P40 (Figs 3 and 4). TTF-1 and napsin were negative which supported the diagnosis of large cell carcinoma of the lung. The patient was referred to the Regional Cancer Center for further management.

DISCUSSION

Due to its rarity and lack of specific gross characteristics, oral metastasis may be mistakenly diagnosed as a benign hyperplastic

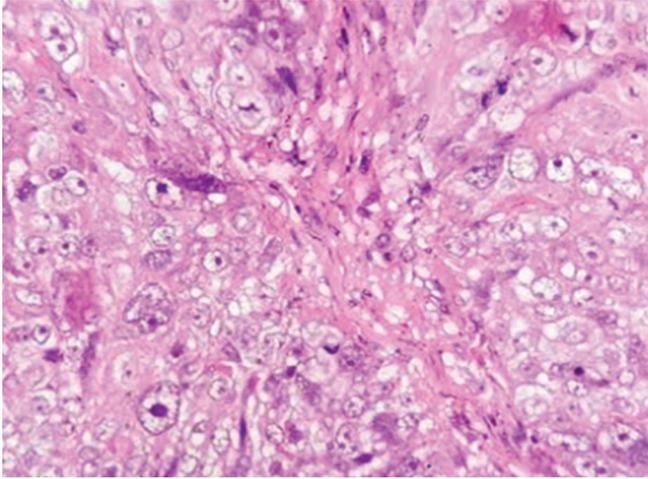


Fig. 2: The round cells with indistinct cytoplasm, cellular pleomorphism, large nuclei, prominent nucleoli, and abnormal mitotic figures (H and E, 40×)

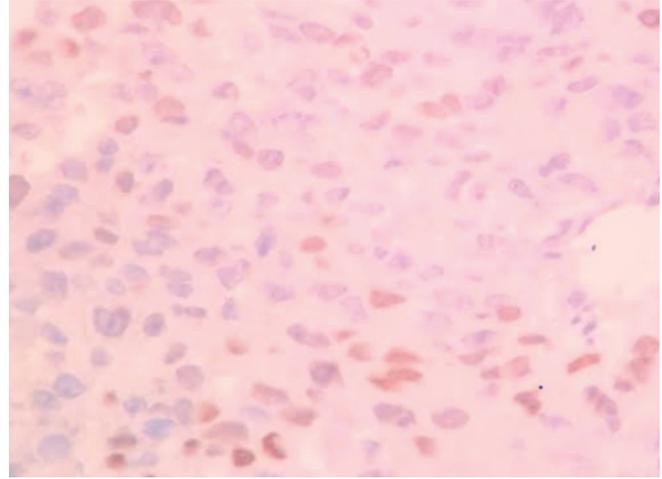


Fig. 3: Patchy nuclear positivity with P40 (IHC, 40×)

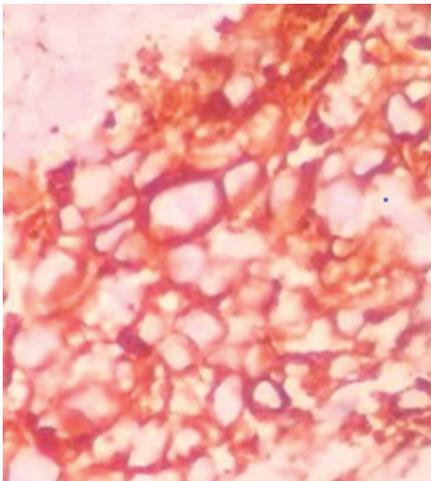


Fig. 4: Strong positivity for CK7 (IHC, 40×)

or reactive lesion at the time of detection. Lung cancer is the most common malignancy metastasizing to the oral cavity, followed by breast, kidney, and liver cancers.³ Metastasis to oral cavity can occur at any age but is most common during fifth and sixth decade of life.¹ Hirshberg et al. reported that 70% of oral metastases manifested after the primary tumor became evident, while the remaining 30% were the first clinical manifestation of the primary tumor spread.⁴ The patient in our case is an elderly male who presented with oral metastasis 3 months after the diagnosis of the primary lung cancer. The most common presenting symptom is a rapidly growing lesion associated with paresthesia and pain; swelling is reported in few cases.⁵ Our patient complained of a rapidly growing mass in the maxillary anterior gingiva. A majority of oral metastases are located in the mandible, with a maxillary location being less common. Metastatic foci in the bones are mainly situated in the red marrow; mandible in adults contains red marrow mainly in the area of the ascending ramus and in the angle region, whereas the maxilla only contains fatty marrow. This may explain the predilection of the mandible to distant metastases.⁶ However, direct buccal or gingival metastases from the lung cancer, to sites other than the maxilla and mandible, have been reported.¹ Inflammatory reaction such as gingivitis or periodontitis could be critical factors to facilitate metastasis. In our case, oral metastasis was to anterior gingiva which

is consistent with the literature. The clinical diagnosis of the lesion was pyogenic granuloma; however, histopathological examination and immunohistochemical study were consistent with features of a poorly differentiated non-small-cell carcinoma of the lung.

The occurrence of metastasis to the oral cavity is generally a sign of extensive metastases, indicating a fatal outcome shortly after the diagnosis.⁷ The prognosis and treatment depend on the site of the primary tumor and the degree of metastatic spread. The metastatic lesion should be treated by surgical resection, radiation, chemotherapy, or a combination of these methods. Palliative treatment alleviates patient's pain, reduces size of tumor, and preserves oral function.

CONCLUSION

In most cases of oral metastasis, the distant primary tumor has already been diagnosed and often treated. The clinical presentation of the lesion is often deceiving. Hence, thorough medical history, a careful clinical examination and biopsy for exact histopathological correlation is imperative. Immunohistochemical markers in such cases play a critical role in identifying the probable site of origin of the tumor. A prompt diagnosis of metastatic lesions helps in the formulation of treatment plan which is focused on improving the quality of life and prolonging the survival of patients.

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