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Metastasis of pulmonary adenocarcinoma to the buccal mucosa and submandibular area

KEYWORDS

Oral metastasis;
Pulmonary
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Submandible

Although primary tumors from the lung is the most common source for metastasis to intraoral soft-tissue among males,¹ the frequency of intraoral soft-tissue metastatic pulmonary lesion was relatively low as evidenced by the two case series studies [11.8% (2/17) from a Canadian population; 0% (0/12) from a Taiwanese population].^{2,3}

Hereby, we reported, to the best of our knowledge, the first case of pulmonary malignancy metastasized to both buccal mucosa and submandibular area. An 83-year-old male patient complained a gradual swelling over the right submandibular area for about one month. He had the medical history of prostate cancer received hormone treatment. Extra-oral examination revealed a painful, tender, non-ulcerated rubbery swelling over the right submandibular area. An eroded, non-tender swelling was noted over the right buccal mucosa (Fig. 1A). No intrabony lesion was found by panoramic radiography (Fig. 1B). Incisional biopsy over the buccal lesion revealed sheets of tumor cells demonstrating micropapillary growth pattern showing prominent nuclear pleomorphism, hyperchromatism, and atypical mitotic figures (Fig. 1C). Lymphovascular invasion by the tumor cells was also discerned (Fig. 1D). Immunohistochemically, the tumor cells were positive for CK7 (Fig. 1E) and TTF-1 (Fig. 1F), but were negative for CK20 and NKX3.1. Due to the negative staining of NKX3.1, the possibility for metastatic prostate cancer was excluded; and a metastatic high-grade

adenocarcinoma from the lung was favored. The patient was then referred to oncology department for further examination for the occult pulmonary malignancy. Chest X-ray showed a mass-like lesion in the right upper lung (Fig. 1G). Furthermore, computed tomography demonstrated a mass over the right buccal masticator space (Fig. 1H) and right upper lung (Fig. 1I, J and K) respectively. The primary pulmonary lesion was confirmed as high-grade adenocarcinoma with TTF-1 (+) (Fig. 1L and M). The patient was subsequently planned to implement the target therapy.

The most common affected site of primary pulmonary malignancy has been the attached gingiva, followed by the tongue.^{1,4,5} A case of primary adenocarcinoma of lung metastasized to the buccal mucosa and submandibular site has been reported. Oral cavity is an uncommon site for occurrence of metastasis; however, metastatic neoplasms should be included in the differential diagnoses of an intraoral malignant neoplasm, especially as demonstrated in the current case. The intraoral malignancy may be the first manifestation for the occurrence of an occult malignancy at other organ.

Declaration of Competing Interest

The authors have no conflicts of interest relevant to this article.

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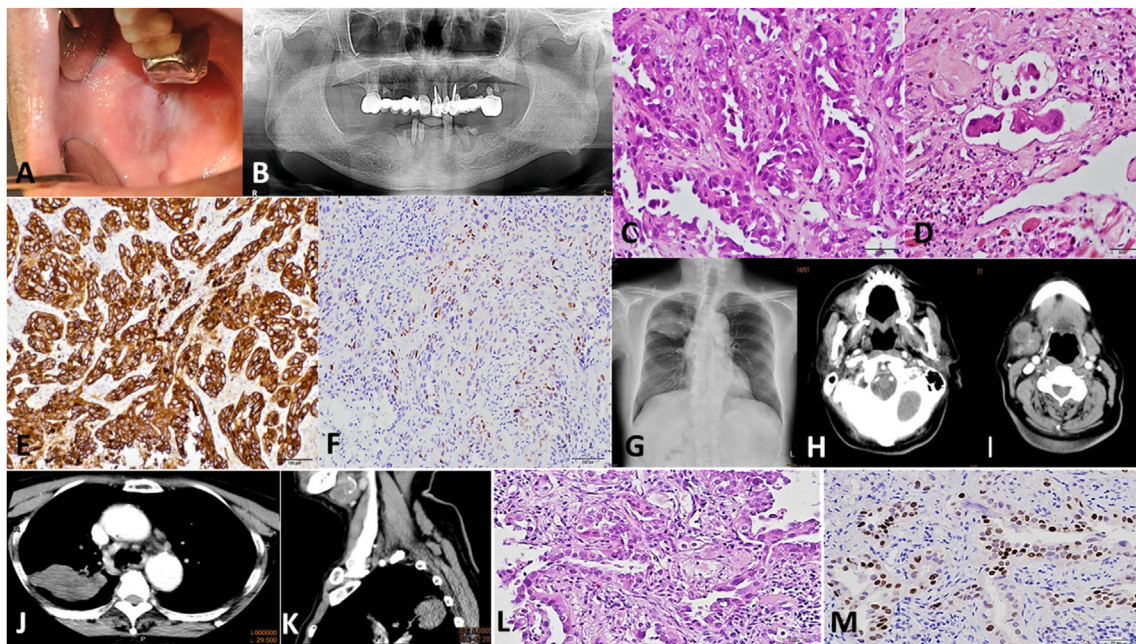


Figure 1 Clinical, radiographic, and microscopic photographs of the primary pulmonary adenocarcinoma with metastasis to the buccal mucosa and submandible. (A) An eroded swelling at the right buccal mucosa. (B) Panoramic radiography revealed no bony destructive lesion. (C) The metastatic lesion composed of sheets of tumor cells with micropapillary growth pattern showing prominent nuclear pleomorphism, hyperchromatism and atypical mitotic figures (hematoxylin and eosin stain; magnification, 200×). (D) Lymphovascular invasion by the tumor cells was noted (hematoxylin and eosin stain; magnification, 400×). (E and F) The tumor cells were positive for CK7 (E, magnification, 100×) and TTF-1 (F, magnification, 100×). (G) Chest X-ray showed a mass-like lesion in the right upper lung. (H) Computed tomography demonstrated a mass over the right buccal masticator space. (I, J and K) Computed tomography also showed a mass over the right upper lung. (L and M) The primary pulmonary lesion was confirmed as high-grade adenocarcinoma (L, hematoxylin and eosin stain; magnification, 200×) with the tumor cells being positive for TTF-1 (M, magnification, 200×).

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