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CASE REPORT

Metastatic Lung Adenocarcinoma to the Oral Cavity

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ABSTRACT

Primary oral neoplasms are relatively common. They tend to have positive neck adenopathy at presentation. Metastatic deposits are rare, and mainly reported to the soft tissue of the oral cavity and to the jawbones. The possible primaries include gastrointestinal and genitourinary tracts. We report a case of an oral cavity mass with initial complaint of toothache and neck swelling with multiple neck nodes. Biopsies taken from the left retromolar trigone and supraclavicular lymph node revealed poorly differentiated metastatic adenocarcinoma. Computed tomography scan suggested primary lung cancer. Early detection of lung cancer should be the clinician's concern. The presence of an oral mass already indicates a late stage of lung cancer with poor prognosis.

KEYWORDS: Oral cavity, metastasis, retromolar trigone, lung cancer, adenocarcinoma

INTRODUCTION

Oral cavity tumours are usually primary in nature. They tend to metastasize early to cervical lymph nodes. Only 1–3% of all malignant oral neoplasms are metastatic lesion [1-4], which commonly involve the jawbones and soft tissues. The primaries are usually from breast, lung, kidney, thyroid gland, intestine, prostate gland, stomach, testis and bladder [2]. Lesions deposited from primary lung adenocarcinomas are very rare.

Diagnosis of this type of presentation is a dilemma for doctors and dentists because the clinical findings are variable and may mimic reactive, benign lesions or infections from odontogenic causes. These metastatic lesions may also be the first evidence of an undiscovered malignancy in a distant primary site or the first evidence of dissemination of a known tumour from its primary site [2]. The patient may present at the hospital or clinic with different symptoms such as oral ache, trismus or gum bleeding.

CASE PRESENTATION

A 42-year-old man, an active smoker and a worker in a chemical fertiliser factory, presented with a history of progressive, painless left neck swelling of 3 months' duration. He had lost significant weight and claimed that the mild toothache which he was unsure when it has been there, was the cause of his poor appetite. He arrived in a wheelchair, as he claimed that both his lower limbs were painful on walking. He had hoarseness but denied any history of prolonged coughing, blood-tinged sputum or shortness of breath.

A physical examination revealed multiple painless enlarged lymph nodes which was hard in consistency on the left side of the cervical region at level II and III and also in the supraclavicular region.

An oral cavity examination revealed a fungating mass of less than 1cm x 1cm dimensions, over the left retromolar region and surrounding the last lower molar [Figure 1].

Figure 1 Fungating mass at left retromolar trigone was identified

There was dental caries noted as well. Flexible nasopharyngolaryngoscopy revealed a normal nasal cavity and nasopharynx, and the left vocal cord noted to be fixed in a paramedian position.

A chest radiograph showed a cannonball-like lesion at the apex of the left lung, with a widened mediastinal shadow [Figure 2(a)]. A left femur radiograph showed a destructive cortical lesion at the distal one-third of the femur [Figure 2(b)].

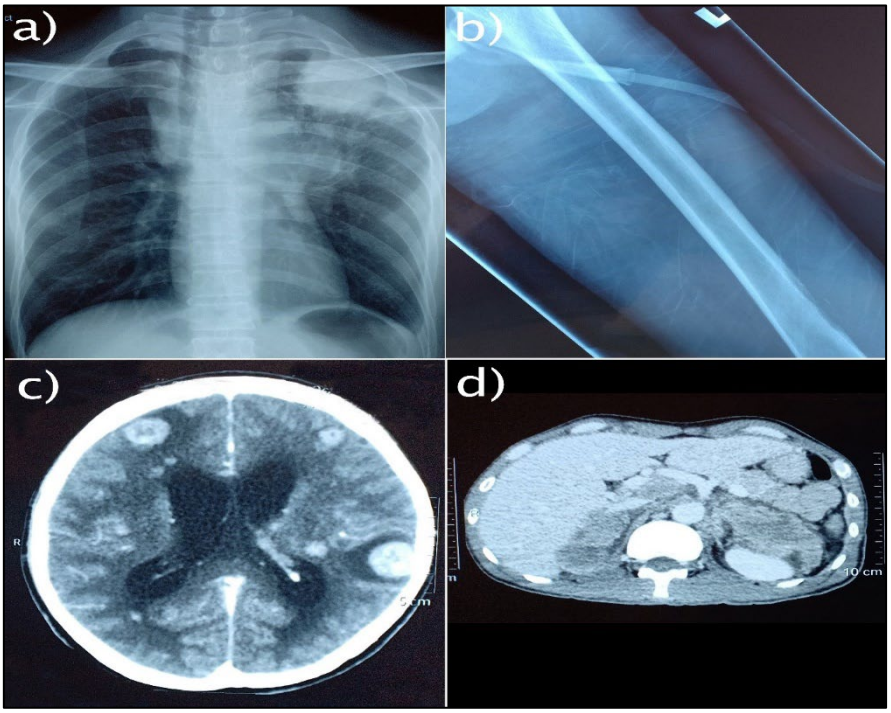

Figure 2 (a) Plain chest radiograph showed cannon ball like lesion at left lung apex
(b) Plain radiograph of left femur showed destructive mass (c) Axial cut CT brain showed multiple brain metastatic lesions
(d) Axial cut CT Abdomen showed bilateral adrenal mass

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In the ward, biopsies were taken from the oral cavity (punch biopsy) and the supraclavicular mass (fine needle aspiration for cytology). Histopathological examination (HPE) of both samples showed tissue infiltration by malignant cells arranged in cords, trabeculae and an occasional lumen formation; the cells had marked pleomorphic nuclei and mitotic figures. Immunohistochemically, the malignant cells were positive for CK7, negative for CK20 and showed focal positivity towards CK5/6. All these findings suggested toward the metastatic adenocarcinoma (poorly differentiated) with a possible primary disease in the lung, head and neck or upper gastrointestinal tract.

A computed tomography (CT) scan from the vertex to abdomen showed features likely representing a left lung malignancy with distant metastases to the lymph nodes, oral cavity, liver, brain and bilateral adrenal glands [Figure 2(c) & 2(d)]. The fungating soft tissue mass in oral cavity measured 4 x 2 cm with multiple left cervical lymph adenopathies involving level I, II and IV measuring 4 x 3 cm, 3 x 2 cm and 7 x 4 cm respectively [Figure 3]. The correlation between the HPE and CT findings led to the conclusion that the most likely primary site was the lung.

Within one week of admission, his condition deteriorated with a drop in consciousness level and several episodes of fits. He opted for palliative care and finally succumbed to his illness after 3 months of diagnosis was made.

Figure 3a CT scan demonstrating the intra-oral mass with nodal metastasis

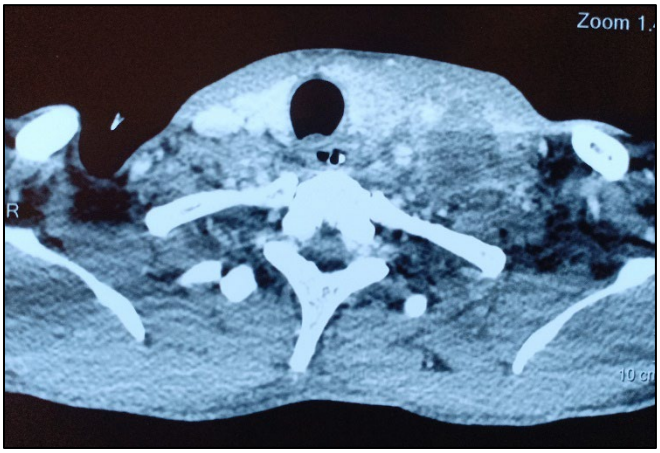

Figure 3b CT scan demonstrating the presence of left supraclavicular lymph node

DISCUSSION

Metastatic lesion in the oral cavity is uncommon and represent about 1–3% of all oral malignancies [3]. Shin et al. reported that only 29 of 1445 oral malignancies were metastases from a primary tumour [2]. The lesion may be misdiagnosed as a benign lesion or was delayed in diagnosis because the patient often does not complain of any symptoms at the early stages.

Lung cancer has increased in incidence throughout the 20th century and is now the second most common cancer in the world [4]. It has a poor prognosis, as only 10–15% of patients survive for 5 years or longer [2]. Some studies have reported that lung is the most common primary source for cancers that spread to oral soft tissues and that the breast is a common source for tumours that metastasise to the jawbone [3]. The mandible, maxilla and temporomandibular joint are the commonest sites for bone metastases, while the gingiva (57%), tongue (27%), tonsils (8%), palate (4%), lip (3%), buccal mucosa (1%) and floor of mouth (<1%) are the most frequent sites for soft tissue metastases [4,5]. Most metastases to the orofacial region occur in patients between 40 and 70 years old, with a male-to-female gender ratio of 2:1 [2].

In our case, the patient was a 40-year-old male and was actively smoking about 10 cigarettes per day. The most common risk factors for lung cancer are tobacco chewing and smoking, followed by air pollution, alcohol consumption, chronic inflammation of the lung and previous family history of lung cancer [2,6].

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Hirschberg et al reported that 70% of oral metastases manifested after the primary tumour became evident, while the remaining 30% were the first clinical manifestation of a primary lesion spread [1]. The tumour cells could spread via the blood stream and lymphatic system [1,2]; therefore, the mandible and maxillary bone are usually affected because the tumour cells deposited in the red marrow. However, the buccal area or gingiva might also be affected. The outcome for a patient after diagnosis with an oral metastasis is short, as in our case, who died 3 months after the oral lesion was identified.

Various clinical presentations of metastatic tumours can be confusing, as these may mimic other oral problems. Patient may complain of gum pain, difficulty in chewing and swallowing, bleeding, trismus, paraesthesia and loosening of a tooth [2,3]. The ipsilateral vocal cord palsy in our case can be explained by the left lung apical lesion, which is known to affect the course of the left recurrent laryngeal nerve. For a definite diagnosis, a tissue biopsy with special staining is very helpful in differentiating between metastases from the lung versus a primary carcinoma of the oral cavity [5]. CT-guided biopsy of the lung lesion also, if can be done, is confirmatory of the primary versus secondary lesions.

Treatment and prognosis for this type of tumour depends on the site of origin and the degree of metastasis. Adebayo and Ajike reported that 19 of 24 patients (79%) with metastatic oral tumours died within 12 months of diagnosis [1]. Once an oral lesion is identified, it is already of poor prognosis and family should be counselled about conservative and palliative treatment. If the patient is suitable for aggressive treatment; surgical resection, radiation, chemotherapy or a combination therapy can be offered [2]. Unfortunately, many patients with oral metastases present in a terminally ill condition or in the late stages associated with distant metastases. In our case, the patient had a history of 3 times fitting in the ward and a gradual worsening level of consciousness and inability to walk because of thigh pain due to brain and femur bone metastases respectively.

CONCLUSION

The majority of primary lung cancer cases with metastases to oral cavity have four characteristics: lung adenocarcinoma, development of oral metastases during the clinical course of the disease, multiple distant metastatic lesions and rapid fatal progression after oral manifestation. A complete examination is of paramount importance. The oral cavity must be examined meticulously, even though it is an unusual site of metastases, because it houses numerous hidden sites. Once a lesion is discovered, it is already of poor diagnosis. An early and adequate palliative care should be offered to the suffering patient to improve the quality of life and prolong the survival of the patient.

Conflict of Interest

Authors declare none.

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Authors' contribution

MNMN and MNAB were involved in data collection and drafting of the case report. HZH and IM provide academic inputs and final approval of the manuscript.

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