

Radically treated carcinoma lung with early metastasis to the tongue: A case report and review of literature

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ABSTRACT

Metastatic lesions to the oral cavity are rare and constitute 1% of all oral lesions. Soft tissues in the oral cavity are less commonly affected when compared with bone. In males, lung is the most common primary site, and the overall survival is low. We present a case of sarcomatoid carcinoma (spindle cell carcinoma) of lung that developed metastasis to the tongue alone soon after completing radical treatment. Immunohistochemistry plays a major role in differentiating a primary tongue lesion from a metastatic lesion.

Key words: Non-small cell lung carcinoma, sarcomatoid carcinoma lung, spindle cell carcinoma lung, tongue metastasis

INTRODUCTION

Oral cancers constitute 3-5% of all malignancies and include the less common metastatic lesions as well. The oral cavity is an uncommon site for metastatic tumor cell colonization and is usually evidence of wide spread disease. Such lesions constitute 1% of all oral malignancies.^[1,2] The most common primary sites described are lung, breast, skin, gastrointestinal tract, liver, and male genitourinary tract. Most metastases in the oral cavity occur in the bones of which mandible is the commonest. Tongue, gingivae, and tonsils are the most frequent sites for soft tissue metastases, and the predominant histological type is adenocarcinoma.^[1,3-5] Though, the incidence of lung carcinoma is on the rise metastasis to the tongue is still a rare occurrence. Studies dealing exclusively with isolated tongue metastasis from lung cancer are very few and only nine such case reports could be located. We present a case of sarcomatoid carcinoma (spindle cell carcinoma) of lung which after radical treatment presented with metastasis to the lateral border of the tongue.

CASE REPORT

A 60-year-old man with a history of chronic cough and breathlessness and a mass lesion in the right lung on chest X-ray was referred to our cancer center for further evaluation. A computed tomography (CT) guided aspiration was done for histological confirmation of the lesion, and it was reported to be non-small cell carcinoma. CT scan of abdomen and pelvis, magnetic resonance imaging brain and bone scan done as part of metastatic work up did not reveal any other lesions. The stage of the tumor at presentation was thus III a (T3N2M0) and so he was planned for concurrent chemo radiation -64 Gy in 32 fractions along with three cycles of carboplatin (AUC 4, on day 1) and etoposide (100 mg/m², day 1-3), which he completed uneventfully. At first follow-up after 2 months, he complained of severe left ear pain which was a new symptom. A thorough evaluation revealed a mucosa covered firm swelling along the left lateral border of the tongue that was biopsied subsequently. A scan of the chest done to evaluate the response to therapy showed residual disease in the lung.

The biopsy from the tongue lesion on histopathology showed tissue lined by stratified squamous epithelium with the sub epithelium showing a poorly differentiated malignant neoplasm composed of atypical oval to spindly cells with hyperchromatic nucleus arranged diffusely [Figure 1]. On immunohistochemistry (IHC) the atypical cells were

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strongly positive for cytokeratin (CK-AE1/AE3) [Figure 2], which confirmed the carcinomatous nature of the neoplasm. The smears from the lung mass were reviewed. The smears showed atypical cells morphologically similar to that of the tongue lesion [Figure 3]. Further IHC markers were done on the biopsy specimen of tongue. Thyroid transcription factor-1 (TTF-1) positivity [Figure 4] confirmed that lung was the primary site. The negative staining with p63 helped to rule out a spindle cell variant of squamous cell carcinoma (SCC). Considering morphology and IHC a diagnosis of spindle cell carcinoma (sarcomatoid carcinoma) metastasizing to the tongue was made. Considering the metastatic nature of the tongue lesion and presence of unresectable residual disease in the lung, the patient was considered for palliative radiation to the tongue, but patient refused further treatment.

DISCUSSION

Metastatic oral lesions though infrequent are more common in males than in females and can develop at

any age.^[6,7] Literature search shows lung, bronchus, breast and kidney as the four common locations for primary cancer in overall oral metastasis. In males lung is found to be the most common primary site as is the case with our patient.^[1,3,8] In the vast majority, such lesions crop up a long time after the detection of primary. Nevertheless, oral metastasis was the initial manifestation in approximately one-third of the patients, and in some cases, the primary tumor remained unknown despite extensive search.^[6,9]

The gross appearance of metastases many a times mimics a primary carcinoma. This causes additional confusion, especially when the metastasis appears long after the completion of treatment for the primary. In our case, IHC played an important role in reaching the diagnosis of oral metastasis. The atypical cells were positive for TTF-1, a marker for lung carcinoma and were negative for p63, a marker for SCC. Thus by correlating clinical history, morphology, and IHC a diagnosis of sarcomatoid

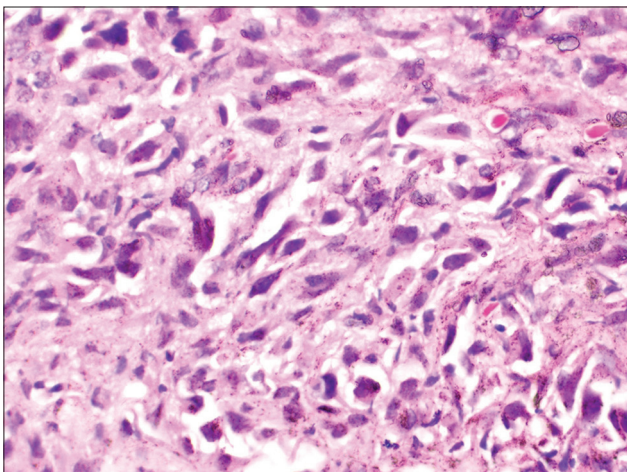


Figure 1: Poorly differentiated malignant neoplasm of tongue showing atypical oval to spindle cells (H and E, ×400)

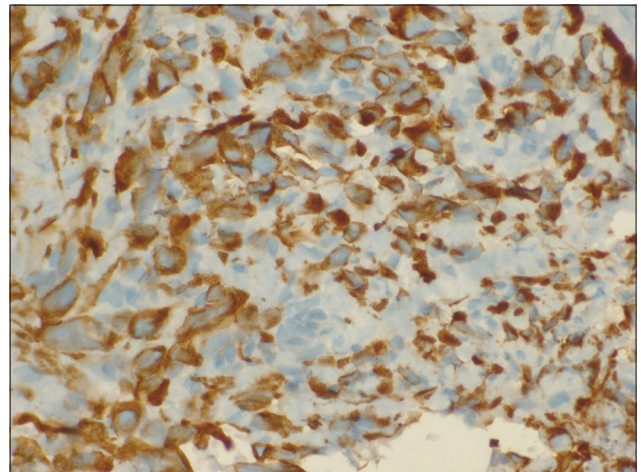


Figure 2: Atypical cells from tongue lesion showing strong positivity for cytokeratin (Immunohistochemistry, ×400)

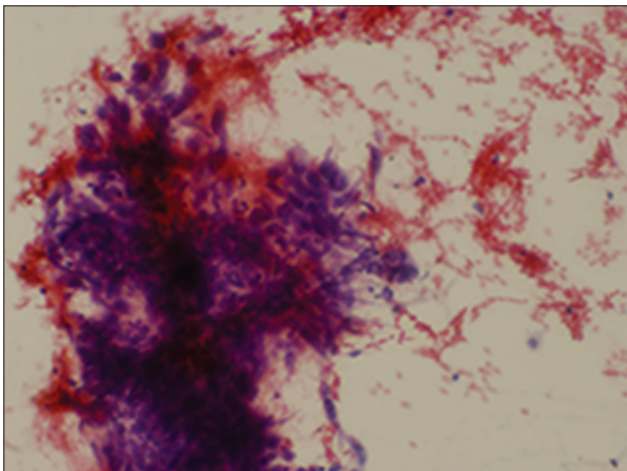


Figure 3: Smear from lung mass showing cluster of atypical cells (Papanicolaou, ×200)

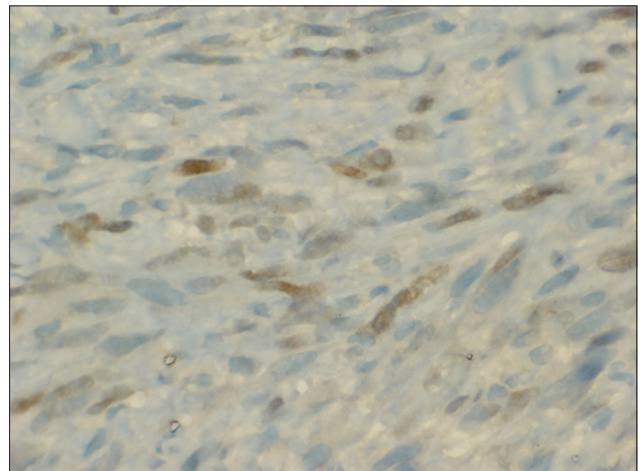


Figure 4: Atypical cells from tongue lesion showing focal positivity for thyroid transcription factor-1 (Immunohistochemistry, ×400)

Table 1: Literature review of lung metastasis to tongue

Author	Year	Histology	Timing of mets [‡]	Isolated mets	Treatment	Response of primary	Final outcome
Suniti <i>et al.</i>	2014	Large cell carcinoma of lung	IP*	Yes	Chemo radiation	Not assessed	Died during treatment
Tatlidil <i>et al.</i>	2011	Mucinous adeno carcinoma of lung	IP	Yes	Surgery followed by chemo	Not applicable	Died after 1 year due to mets
Mavili <i>et al.</i>	2010	Adeno carcinoma of lung	IP	No	NA	NA	Death at 2 months
Hatoum <i>et al.</i>	2008	Adeno carcinoma of lung	IP	NA	NA	NA	NA
Kurt <i>et al.</i>	2006	SCC [§] of lung	IP	NA	NA	NA	NA
Terashima <i>et al.</i>	2004	SCC of lung	IP	No	Chemo radiation	Not assessed	Death at 5 months
Mui <i>et al.</i>	1999	Large cell carcinoma of lung	IP	Yes	Chemo radiation	No response	Death at 5 months
Sridhar <i>et al.</i>	1985	Oat cell carcinoma of lung	NA	NA	NA	NA	Death at 3 months
Kim <i>et al.</i>	1979	Oat cell carcinoma of lung	Late presentation	No	Chemo radiation	Partial response	Death at 3 months
Kim <i>et al.</i>	1979	Adeno carcinoma of lung	IP	No	Palliative radiation	Not assessed	Died during treatment

*IP: Initial presentation, *NA: Not available, [‡]Mets: Metastasis, [§]SCC: Squamous cell carcinoma

carcinoma (spindle cell carcinoma) of lung metastasizing to tongue was made.

Most patients with a metastatic tumor in the oral cavity usually have metastases at other sites also, leaving no option other than palliative treatment. Role of surgery in metastatic lesions is very limited and is considered only after an extensive search to rule out other metastatic lesions elsewhere or recurrence or residual disease at the primary site. Even then the long-term results are poor.^[10] Literature on this subject mainly consists of case series studying oral metastasis from all primary sites.^[1,3,4,7] Studies dealing exclusively with lung lesions metastasizing to tongue are limited and are mainly case reports [Table 1]. Our patient had an unresectable residual disease at the primary site, and was eligible for palliation alone.

Many reasons are put forth explaining the prevalence of oral metastasis from lung including the ability of cancer cells to reach any point of the body once the pulmonary filter is passed, but none can clearly explain the metastatic distribution. Once oral lesions appear survival is generally poor, and available literature does not show any advantage in aggressively treating the lesion once metastasis is proven.

CONCLUSION

The clinical presentation of metastasis is often a diagnostic challenge for the clinician as well as the pathologist. IHC can be used in such situations to reach a diagnosis and to plan the treatment. The appearance of oral metastatic lesions is to be taken as a sign of advanced stage as the survival is generally poor.

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