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An Elusive Case Of Pleural Effusion Metastasis From Carcinoma Tongue: A Cytological Diagnosis.

Sumiti Gupta¹, Kshitija Attry^{2*}, Monika Kalyan³, Madhubala⁴, and Sunita Singh⁵.

¹Professor, Department of Pathology, Pt. B. D. Sharma PGIMS, Rohtak, Haryana, India.

²Junior Resident, Department of Pathology, Pt. B. D. Sharma PGIMS, Rohtak, Haryana, India.

³Senior Resident, Department of Pathology, Pt. B. D. Sharma PGIMS, Rohtak, Haryana, India.

⁴Junior Resident, Department of Pathology, Pt. B. D. Sharma PGIMS, Rohtak, Haryana, India.

⁵Senior Professor and Head, Department of Pathology, Pt. B. D. Sharma PGIMS, Rohtak, Haryana, India.

ABSTRACT

Oral cavity squamous cell carcinoma poses a significant morbidity and mortality worldwide with Asian countries like India comprising the major disease burden. Though the incidence of metastases to regional lymph nodes is high, distant metastases to organs is rare and indicates a poor prognosis. Fluid cytology can play a crucial role in overall prognosis and outcome of the patient by aiding in early diagnosis and management. We present a rare case of a 48-year-old male with complaints of respiratory distress highlighting the diagnostic role of fluid cytology and immunohistochemical staining in distant metastasis and management.

Keywords: Metastasis, carcinoma, cytology, lymph nodes.

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**Corresponding author*

INTRODUCTION

The most common malignancy of the head and neck region is squamous cell carcinoma with tongue being the most common site [1]. India had a total of 143,759 new cases in the year 2022 with an age standardised rate of 9.9 and is one of the leading countries in terms of incidence and prevalence of oral squamous cell carcinoma (OSCC) [2]. Pleural metastasis though rare in the patients of OSCC indicate poor prognosis [3].

CASE PRESENTATION

Clinical history

48-year-old male presented with complaint of respiratory distress for last 10 days which was sudden in onset and progressive in nature. On eliciting history, patient was a known case of squamous cell carcinoma tongue for which he underwent wedge resection with nasolabial flap reconstruction with lymph node dissection followed by wide local excision with level I clearance. After this patient underwent 6 cycles of chemotherapy and 30 cycles of radiotherapy. Patient had past history of chronic alcoholism and smoking for last 30 years.

Lab investigations

Hb- 13.4g%, TLC- 15,300/mm³, Platelet count- 1.58 lac/mm³, PT/INR- 12.3/1.08, Serum Sodium- 122mmol/L, Serum potassium- 3.7 mmol/L.

CECT thorax findings showed few well defined cavitary lesions in anterior segment of right upper lobe and posterior segment of left upper lobe. Mild left pleural effusion with underlying lung consolidative changes with mediastinal lymphadenopathy. (Findings suggestive of Pulmonary Kochs) (Fig 1)

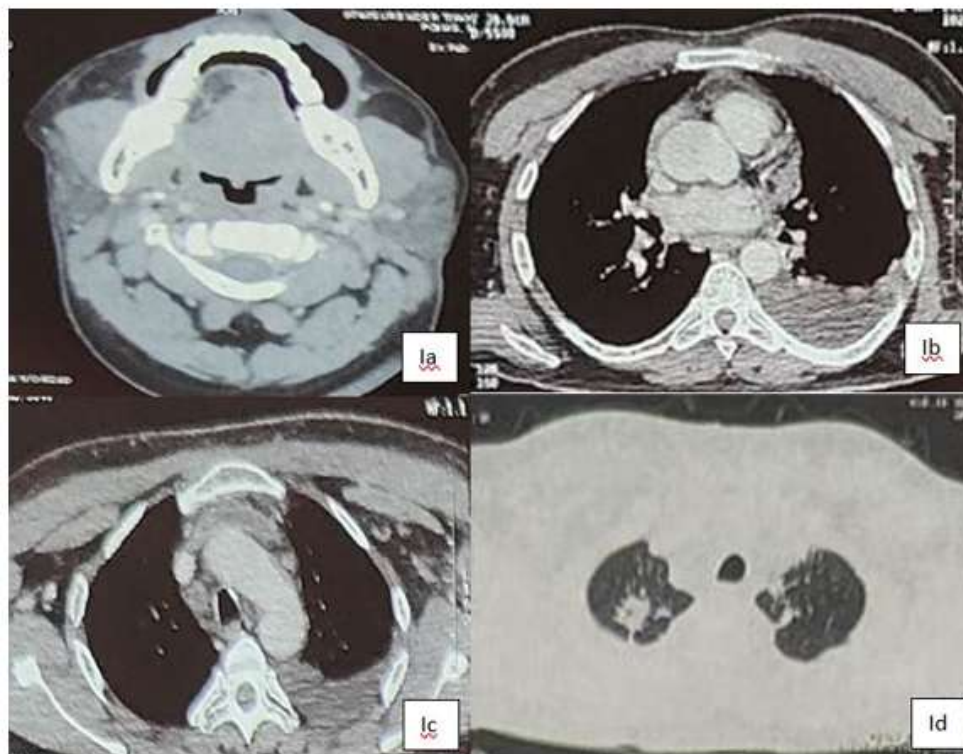


Fig 1a: Heterogeneously hypodense growth in right side of tongue consistent with known neoplastic growth. Fig 1b, 1c: Demonstrates mild to moderate left sided pleural effusion and mediastinal lymphadenopathy. Fig 1d: cavitary lesion in right lung apex

PET-CT scan FDG avid parenchymal and pleural based lung nodules involving bilateral lungs, paratracheal, subcarinal and bilateral hilar nodes. No abnormal FDG uptake or any definite mass lesion noted in the residual tongue.

Pleural fluid tap was done and sample was sent for cytological examination.

400ml yellowish appearing pleural fluid was received in the department of pathology, PGIMS Rohtak.

Cytological findings

Smears examined show mesothelial cells, macrophages along with singly scattered and groups of atypical squamous cells having high N:C ratio, large pleomorphic nuclei, conspicuous nucleoli in some and moderate amount of dense basophilic cytoplasm against a background of lymphocytes, neutrophils and RBCs.

Cytological findings revealed metastatic deposits from squamous cell carcinoma. (Fig 2a)
On Immunocytochemistry, p40 was positive. (Fig 2b)

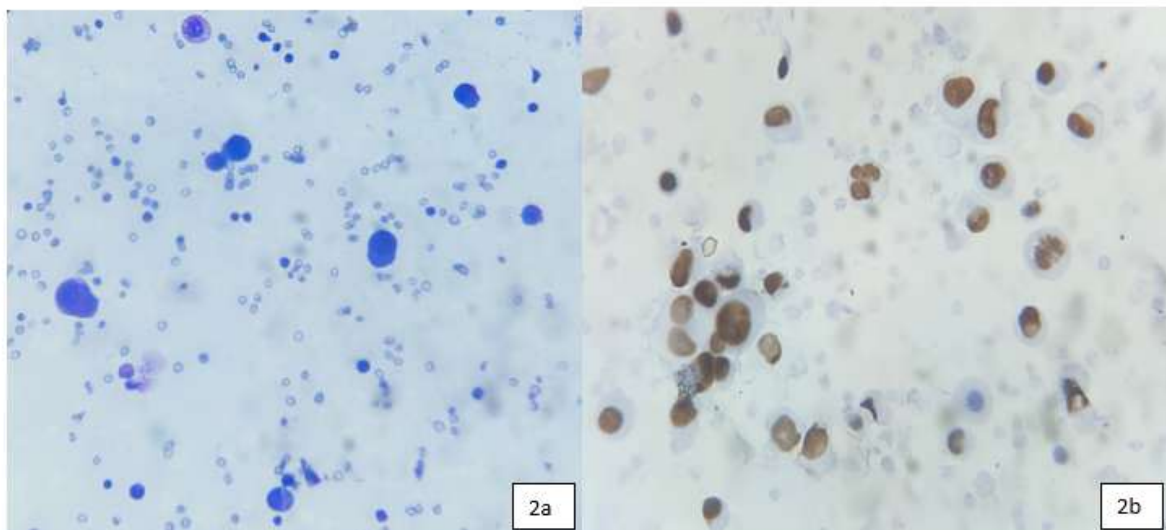


Fig 2a: Metastatic squamous cells (400X, Leishman Stain)

Fig 2b: p40 positivity (400X, Immunocytochemistry)

DISCUSSION

Oral squamous cell carcinoma is a significant public health concern and despite the availability of modern diagnostic techniques and therapeutic options the mortality rate of carcinoma tongue tends to be high.¹ According to GLOBOCAN 2022 data, lip and oral cavity cancers rank 15th globally in terms of incidence and mortality. There were an estimated 389,846 new cases of oral cavity cancer in 2022 and Asia accounts for the highest percentage of cases (66.3%) and deaths (75.1%) related to lip and oral cavity cancers globally [4].

While traditionally affecting older men with established risk factors, there has been a recent shift in trends showing a rising incidence in younger and female populations [5, 6]. This warrants a deeper study into the complex interplay of environmental exposures, genetic predispositions, and socioeconomic determinants.

Though Squamous cell carcinoma of the tongue has a propensity to metastasize regionally to cervical lymph nodes, it rarely metastasises to distant organs with most common sites being lung, bones and liver. There is usually a long latency period and factors like location of the primary tumour, initial T

and N stage and Lymphovascular invasion determine the incidence of distant metastases in patients of head and neck squamous cell carcinoma. Metastatic spread is an important determinant of staging, management and mortality in tongue SCC. Prognosis of these cases generally remains poor [7-9].

Most common primary for pleural metastasis is lung cancer followed by breast and hematological malignancies [10, 11]. In a study done by Johnston WW, Adeocarcinomas comprised the largest group of malignant pleural effusions followed by hematological malignancies and large cell undifferentiated carcinomas [12].

Pleural fluid cytology is a simple and effective method to diagnose malignant pleural effusions. Though the sensitivity and the diagnostic yield maybe limited because of factors like extent of disease, number of specimens taken, transportation time etc., yet it is one of the definitive methods for diagnosis. It serves as an essential minimally invasive diagnostic tool, especially within resource-limited settings or when patients are unfit for pleural biopsy [13].

Our case illustrates that pleural fluid cytology coupled with immunohistochemistry can be an effective diagnostic tool for early diagnosis of pulmonary metastases of Squamous cell carcinoma of tongue especially in patients with a known history of the disease.

CONCLUSION

Distant metastasis of squamous cell carcinoma of tongue though rare indicate grave prognosis. Cytological examination provides definitive diagnosis in pleural fluid analysis when malignant cells are found. Liquid-based cytology especially when combined with ancillary testing can prove to be a powerful, minimally invasive tool for evaluating pleural effusions thus helping in early and prompt management of the patients.

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