

## Co-existence of Carcinoma Tongue with Pulmonary Tuberculosis

S.K. Verma<sup>1</sup>, Anubhuti<sup>1</sup>, Madhu Kumar<sup>2</sup> and Ashwini Kumar Mishra<sup>1</sup>

Departments of Pulmonary Medicine<sup>1</sup> and Pathology<sup>2</sup>, King George's Medical University, Lucknow (Uttar Pradesh), India

### Abstract

We present the case of a 45-year-old male diagnosed to have carcinoma base of tongue, whose chest radiograph showed bilateral lung infiltrates and was referred for evaluation of suspected pulmonary metastases. Diagnostic evaluation confirmed the diagnosis of smear-positive pulmonary tuberculosis. [Indian J Chest Dis Allied Sci 2015;57:185-186]

**Key words:** Carcinoma tongue, Pulmonary tuberculosis.

### Introduction

Neoplasms of the oral cavity are one of the most common malignancies in India; with an incidence of 12.6 per 100,000.<sup>1</sup> Carcinoma tongue comprises 24.2% of this load;<sup>1</sup> 53% of patients with carcinoma tongue have distant metastases. Lung is the most common site (80%)<sup>2</sup> of metastases and patients present with canon ball metastases or lung infiltrates. Conditions causing immunosuppression can lead to reactivation of pulmonary tuberculosis (TB). Malignancy *per se* and treatment modalities used for malignancy, both lead to immune suppression, and can thus, unmask pulmonary TB. Co-existence of carcinoma tongue with pulmonary TB is rare. In this report we document such a rare co-existence.

This case highlights the importance of suspecting TB in any patient with pulmonary radiological abnormalities who have evidence of malignancy elsewhere keeping in view the high prevalence of TB in India.<sup>3</sup>

### Case Report

A 45-year-old male, former smoker was diagnosed to have progressively increasing tongue swelling, which

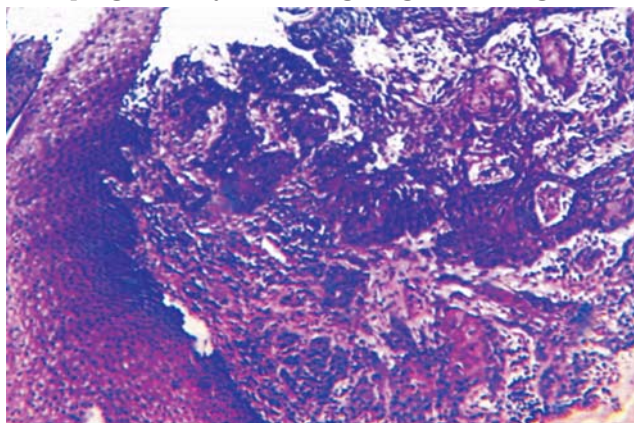


Figure 1. Biopsy from base of tongue swelling. Photomicrograph showing features suggestive of poorly differentiated squamous cell carcinoma (Haematoxylin and Eosin  $\times 100$ ).

on further work-up was confirmed to be squamous cell carcinoma of base of tongue at left vallecula (Figure 1). The routine chest radiograph revealed bilateral infiltrates (Figure 2), so the treating otorhinolaryngologists referred

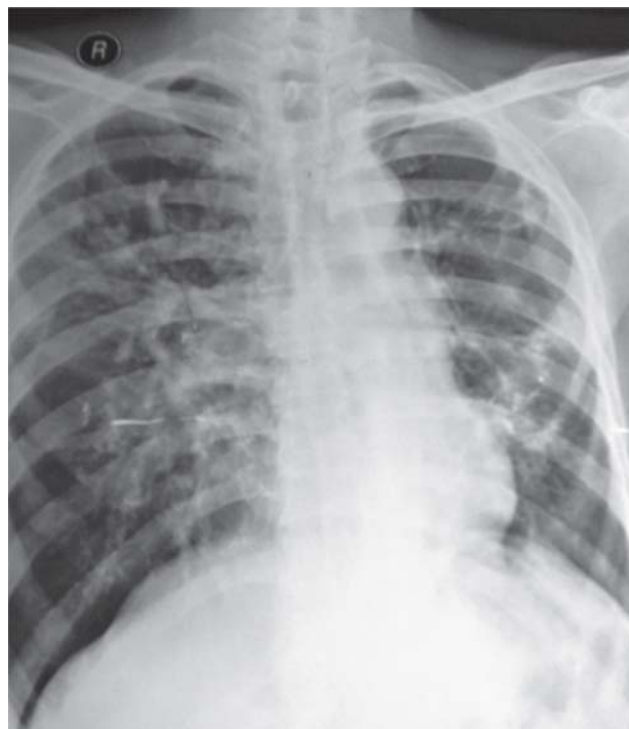


Figure 2. Chest radiograph (postero-anterior view) showing bilateral infiltrates.

the patient to us suspecting lung metastases. The patient presented to us with a 2-month history of on and off cough with expectoration and haemoptysis, associated with loss of weight and appetite. General examination was within normal limits. Respiratory system examination revealed bilateral crepitations all over chest. Routine blood investigations were within normal limits. Sputum smear examination for acid-fast bacilli by Ziel-

[Received: June 13, 2014; accepted after revision: October 1, 2014]

**Correspondence and reprint requests:** Dr S.K. Verma, Professor, Department of Pulmonary Medicine, King George's Medical University, University Chowk, Lucknow-226 003 (Uttar Pradesh), India; E-mail: drskverma@rediffmail.com

Neelsen method was positive (grade 2+). Patient was diagnosed to have smear-positive pulmonary TB and was started on Category II DOTS (Directly observed treatment, short-course) under Revised National Tuberculosis Control Programme as the patient was previously treated for pulmonary TB one year back with Category I DOTS and was declared cured at the end of treatment. For the advanced stage carcinoma tongue, the patient was referred to the department of radiation oncology for further chemo-radiotherapy.

## Discussion

Squamous cell carcinoma comprises 90%-95% of all malignant neoplasms of oral cavity, out of which tongue cancer constitutes 20%.<sup>4</sup> The major risk factors include tobacco smoking, betel quid chewing, and alcohol ingestion. Human papilloma virus being implicated as an aetiological agent in 50 % of cases.<sup>4</sup> Advanced stage disease [tumour, node, metastasis (TNM) stage III and IV] usually have distant metastases, with lungs being the most common site. Treatment of early stage disease (TNM I and II) is single modality approach, either surgery (transpharyngeal resection of tumour) or radiotherapy along with neck dissection. For advanced stage disease (TNM III and IV), concomitant chemo-radiotherapy is preferred over surgical resection because of debilitating nature of surgery and associated complications. Platinum based chemotherapy is the drug of choice.<sup>5</sup>

In India, where most of the adult population is already infected with *Mycobacterium tuberculosis*, a diagnosis of reactivation/reinfection pulmonary TBs should be kept in mind while evaluating any patient with malignancy. Most people (~90%) infected by *Mycobacterium tuberculosis* do not develop the disease throughout their life-time. However, alterations in the immune system, for example, co-infection with human immunodeficiency virus, diabetes mellitus, malignancy, end-stage renal disease requiring dialysis

and patients on immune-suppressants, increase the risk of developing active disease considerably.<sup>6</sup> The major immune-protective mechanism against TB is the cell-mediated immunity (CMI), so disease states causing impairment of CMI cause increased risk.<sup>7,8</sup> Our patient had history of pulmonary TB one year back, for which he took adequate treatment and was declared cured. A possible mechanism for reactivation of pulmonary TB this patient could be the oral malignancy induced immunosuppression. Another fact to be kept in mind while evaluating any malignancy patient for pulmonary metastases is that sputum smear examination for acid-fast bacilli should be done prior to other invasive tests, bearing in mind the high prevalence of TB in India.

## References

1. Ramachandra NB. The hierarchy of oral cancer in India. *Int J Head Neck Surg* 2012;3:143-6.
2. American Head and Neck Society. Oral cavity cancer. Available at URL: [http://www.ahns.info/resources/education/patient\\_education/oralcavity/](http://www.ahns.info/resources/education/patient_education/oralcavity/). Accessed on August 8, 2014.
3. TB India 2012. Revised National TB Control Programme Annual Status Report. Available at URL: <http://www.tbcindia.nic.in/documents.html#>. Accessed on August 8, 2014.
4. Choi S, Myers JN. Molecular pathogenesis of oral squamous cell carcinoma: implications for therapy. *J Dent Res* 2008; 87:14-32.
5. Scott Brown. Treatment of carcinoma base of tongue. In: Michael Gleeson, et al, editors *Scott Brown's Otolaryngology and Neck Surgery*, 7th edition. London: Hodder Arnold;2008;p. 2589.
6. Pando RH, Orozco H, Aguilar D. Factors that de-regulate the protective immune response in tuberculosis. *Arch Immunol Ther Exp (Warsz)* 2009;57:355-67.
7. North RJ, Jung YJ. Immunity to tuberculosis. *Annu Rev Immunol* 2004;22:599-623.
8. Ibrahim EM, Uwaydah A, al-Mulhim FA, Ibrahim AM, el-Hasan AY. Tuberculosis in patients with malignant disease. *Indian J Cancer* 1989;26:53-7.