

FDG PET/CT in a rare case of multiple cutaneous metastases in carcinoma larynx

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ABSTRACT

Distant metastases in squamous cell carcinoma of the larynx have an incidence of 6.5-7.2% and most commonly involves the lungs, liver, and bone. Metastases to the skin are very rare, but, when present, they are usually considered a poor prognostic sign. This most often affect the supradiaphragmatic area, i.e., the head, neck, thorax, or upper extremities. We have reported 18F-fluorodeoxyglucose positron emission tomography computed tomography (FDG PET/CT) scan of a patient with squamous cell carcinoma of the larynx showing multiple subcutaneous nodules all over the body, which was helpful in the assessment as well as staging of the disease.

Keywords: Carcinoma larynx, fluorodeoxyglucose positron emission tomography computed tomography, multiple cutaneous metastases

INTRODUCTION

Lung, large intestine, and oral cavity carcinomas in males and breast carcinoma in females are the most frequent cause of cutaneous metastases. Nodular, inflammatory, telangiectatic, and bullous are various forms of clinical presentations of skin metastasis.^[1] Nodular cutaneous metastasis is most commonly caused by lymphatic dissemination.^[2] In a review of 4,020 patients with metastatic squamous cell carcinoma (SCC), cutaneous lesions occurred in 10.4%.^[3] The morphology of these metastases includes nodules, ulcers, inflammatory areas, sclerotic areas, bullae, and vesicles.^[4]

CASE REPORT

A 65-year-old male smoker patient diagnosed to have SCC of larynx in year 2002 presented with complaints of change in voice, significant weight loss, difficulty in swallowing, reduced appetite, and gradual progressive random appearance of nodular cutaneous lesions. He also had past history of foreign body sensation associated with throat discomfort. Laryngoscopy in

2002 revealed a 1.5-cm mass arising from the undersurface of epiglottis on the left side. Biopsy of the mass confirmed moderately differentiated SCC. The patient did not take any standard treatment and remained on self medication with homemade remedies. He continued to have throat discomfort intermittently during this period. This patient reported to our hospital when he developed progressive and generalized skin lesion over the body. Clinically, the patient had a poor built and emaciated looks with tachycardia. He had multiple nodular lesions of varying sizes over trunk, chest, back, face, scalp, and extremities; some of these lesions were erythematous and crusted [Figure 1a and b]. The patient had a nasal twang in speech. Rest of the systemic examination and routine blood examination were apparently normal. Indirect laryngoscopy



Figure 1: (a) Random distribution of nodular lesion and some erythematous lesion with crusting in the head, trunk, back, and upper as well as lower extremities (b) Random distribution of nodular lesion of varying sizes in the head, trunk, back and upper as well as lower extremities. All these lesions were non tender and did not bleed on touch

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Figure 2: F-18 FDG PET/CT coronal section MIP image (a) showing random distribution of metabolically active cutaneous lesion all over the body (b) sagittal section showing FDG avid lesion in the laryngeal side of epiglottis

was done, which revealed a proliferative growth on the laryngeal surface of epiglottis. 18F-fluorodeoxyglucose positron emission tomography computed tomography (FDG PET/CT) was done that showed an irregular soft tissue thickening in the epiglottis, multiple FDG avid cutaneous deposits of varying sizes involving all extremities, trunk, neck, scalp, and face, multiple FDG avid pleural-based nodules FDG avid abdominal lymph nodes, and a solitary skeletal lesion in left scapula [Figures 2 and 3]. A representative lesion was excised and histopathology as well as immunohistochemistry confirmed the deposits of poorly differentiated carcinoma consistent with metastasis in a known case of carcinoma of larynx.

DISCUSSION

There is a wide variety of morphological spectrum for the clinical presentation of cutaneous metastases. SCC is responsible for 95% of carcinoma of the larynx in adults and is the most common tumor in upper respiratory tract.^[5] This tumor originates from glottis (59%), supraglottis (40%), or infraglottis (1%) and generally spreads to regional lymph nodes or through blood to the pulmonary system. The most common sites for SCC of head and neck are lung (70-75%), liver (17-38%), and bone (23-44%).^[6-8] Skin metastasis has been reported to occur in 1-2% and is solitary or multiple.^[4] Cancers arising in the oral cavity are the commonest head and neck cancers metastasizing to skin. Other malignancies associated with skin metastases include carcinoma of bronchus, breast, colon, and kidney. The site of skin metastases include neck, chest, scalp, face, lips, axilla, areola, back, arms, and digits, with the most common being the neck and chest.^[9,10] The skin metastases may evolve through three possible mechanisms, direct spread via tissue planes, local spread through dermal lymphatics, and distant spread as a result of hematogenous spread.^[11] Cutaneous metastases from laryngeal carcinoma may present as non-tender firm nodules, as sclerodermoid lesions, or may mimic an inflammatory process. The diagnosis should be confirmed by cytology or histopathological examination of

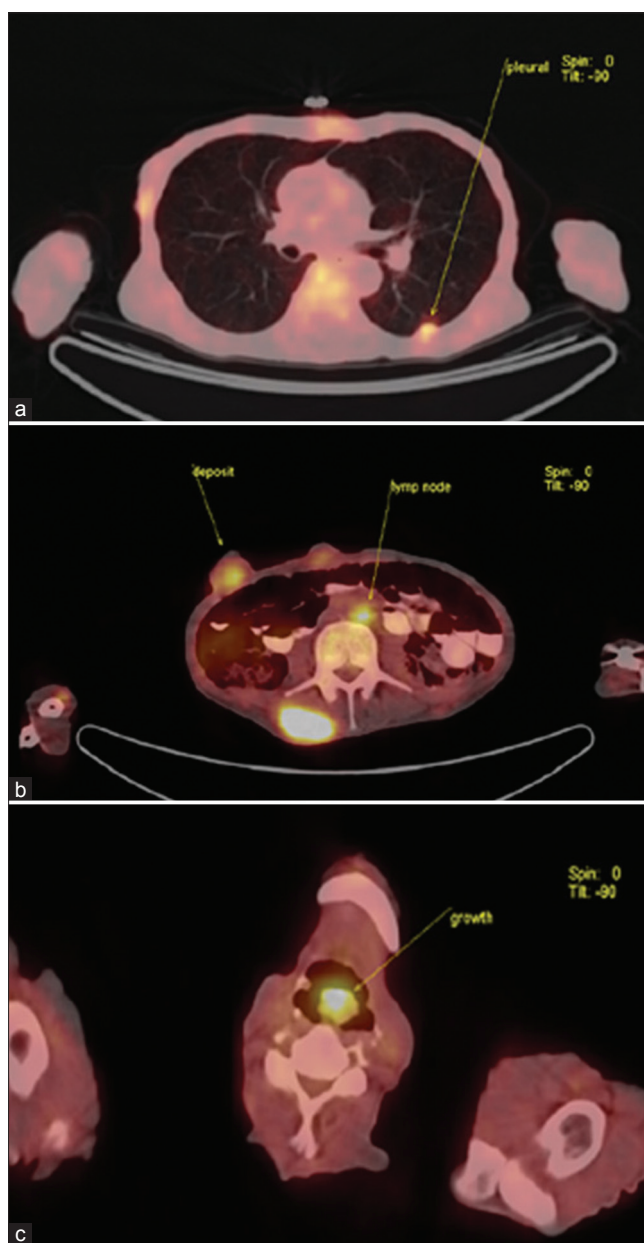


Figure 3: F-18 FDG PET/CT images (a) axial section in lung window showing a subpleural nodular deposit on the left side (b) axial section showing FDG avid subcutaneous deposits and FDG avid abdominal lymph node, and (c) axial section showing FDG avid lesion involving the epiglottis

the lesions, and, in this case, it was confirmed with a positive cytology report. Krunic *et al.*, reported a case of laryngeal SCC with infradiaphragmatic metastasis that is a very rare presentation.^[12] Multiple skin metastatic tumors was reported by Bhandarkar^[13] such skin metastatic tumor has a poor prognosis and he observed that such skin metastatic tumors have a poor prognosis. Veraldi reported a case with metastatic laryngeal tumor in the form of localized nodules in frontal area and arm in a patient with laryngeal tumor.^[9] Bottoni reported a patient with metastatic laryngeal carcinoma in the form of infiltrate erythema in supra and infra clavicular regions after 4 years of primary surgical treatment. As cutaneous metastases in cases of carcinoma larynx can be solitary or multiple, therefore FDG

PET CT has an added benefit in knowing the extent of disease as well as sites of metastases.^[14]

CONCLUSION

Skin metastasis from laryngeal cancer is rare and may alter disease staging, management, and hence prognosis. FDG PET/CT imaging has been widely used in the staging and management of the patients of head and neck cancers. FDG PET/CT has an added benefit of being a potential modality for diagnosing advanced disease by providing whole-body cancer involvement information (i.e., N and M staging) that might not be clinically apparent as was in the above mentioned case.

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