

Case Report:

An unusual presentation of carcinoma lower oesophagus with thyroid metastasis

B. Sreenivasa Rao,¹ Pranabandhu Das,¹ C. M. Gopalakesari,¹ Amit Kumar Chowhan,²
Tekchand Kalawat,³ A.Y. Lakshmi⁴

Departments of ¹Radiation Oncology, ²Pathology, ³Nuclear Medicine, ⁴Radiodiagnosis,
Sri Venkateswara Institute of Medical Sciences, Tirupati

ABSTRACT

Carcinoma lower oesophagus metastasizing to thyroid occurs rarely. We report the case of a 56-year-old male who was referred for evaluation of dysphagia in whom such an occurrence has been documented. Clinically patient had palpable cervical lymphadenopathy. There was no thyroid swelling. Upper gastro-intestinal endoscopic biopsy revealed squamous cell carcinoma of lower third oesophagus. Fine needle aspiration cytology (FNAC) from the right cervical lymph node also revealed squamous cell carcinomatous deposits. Patient was then evaluated by integrated whole-body positron emission tomography-computed tomography using ¹⁸F fluorodeoxyglucose which revealed metabolic activity in thyroid gland. Ultrasound guided FNAC from thyroid shown metastatic squamous cell carcinomatous deposits which was further confirmed by immunocytochemistry. We present this case because of its exceedingly rare occurrence and poor prognosis.

Key words: FNAC, Immunocytochemistry, Lower Oesophagus, Metastasis, Squamous cell carcinoma, Thyroid

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INTRODUCTION

Metastases to the thyroid gland from extra thyroid malignancies are rarely encountered in clinical practice. They may originate from various primary sites such as kidney, colorectum, lung and breast.¹ Oesophageal carcinoma metastasizing to the thyroid gland is very uncommon and only scarcely reported in English literature.¹ In anticipation of poor prognosis, surgical resection is hardly performed in such cases; hence metastasis to thyroid gland is rarely observed on the routine histopathological examination. We present the case of a 56-year-old male presenting with cervical lymphadenopathy which on further evaluation was diagnosed as primary lower esophageal carcinoma with metastasis to thyroid gland.

CASE REPORT

A 56-year-old male presented with multiple nodular swellings on the right side of the neck since five months which were progressively increasing in size. He also complained of pain in the swellings, difficulty in swallowing and hoarseness of voice. He complained of loss of appetite and loss of weight of 8 kg in the past five months. There was no history of fever, night sweats and no family history of malignancy or any thyroid disorders. He was a known tobacco smoker and consumed alcohol regularly for the last 20 years. On examination, he had multiple firm, non-tender, matted right cervical level III and level IV lymph nodes of size 5×4 cm. He was clinically euthyroid. Indirect laryngoscopy revealed right side vocal cord palsy. Upper gastrointestinal endoscopy

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Corresponding author: Dr Pranabandhu Das, Assistant professor, Department of Radiation Oncology, Sri Venkateswara Institute of Medical Sciences, Tirupati, India.

e-mail: daspranabandhu@gmail.com



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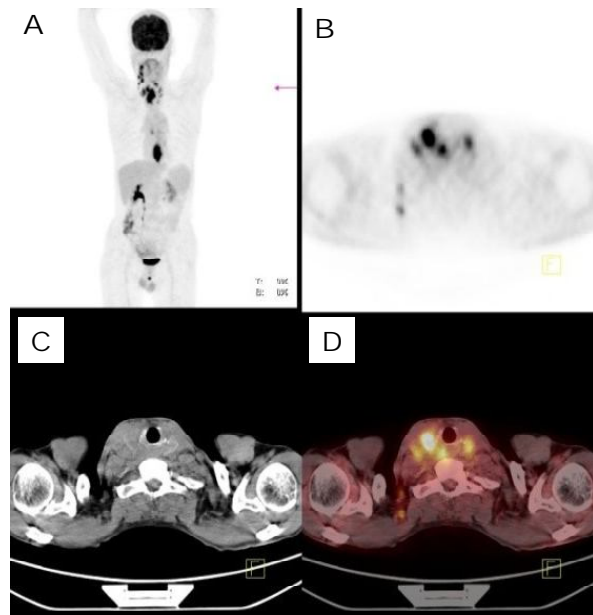


Figure 1: ^{18}F -FDG PET-CT Maximum intensity projection image (A), PET axial image (B), CT axial image (C), fused PET-CT image (D) showing increased metabolic activity at primary tumour site, bilateral cervical lymph nodes and thyroid lesions

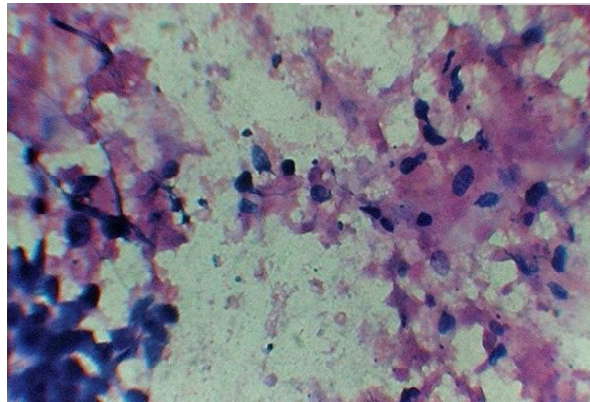


Figure 2: Photomicrograph of the thyroid FNAC smear showing thyroid follicular cells (left lower) and well differentiated squamous tumour cells (right side) (Haematoxylin and eosin, $\times 40$)

showed an ulcero-proliferative growth at 35 cm extending upto 38 cm from upper incisors, suggestive of a neoplasm. Endoscopy biopsy from growth was squamous cell carcinoma. Fine needle aspiration cytology (FNAC) from the right cervical lymph node revealed metastatic squamous cell carcinoma.

This patient was then evaluated by whole body ^{18}F fluorodeoxyglucose positron emission tomography-computed tomography (FDG PET-CT) as a part of metastatic workup and to

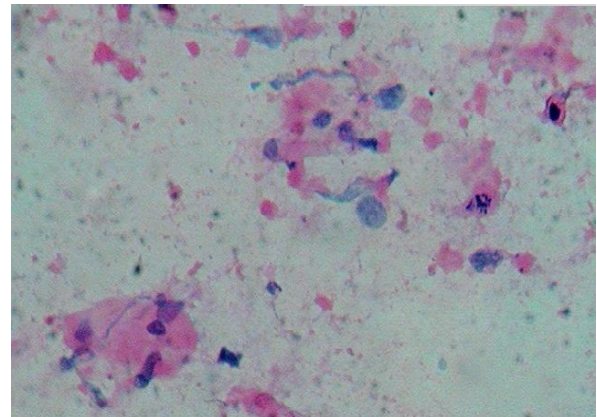


Figure 3: Photomicrograph of the thyroid FNAC smear showing scattered well differentiated squamous epithelial cells on a background of necrosis (Haematoxylin and eosin, $\times 40$)

FNAC = fine needle aspiration cytology

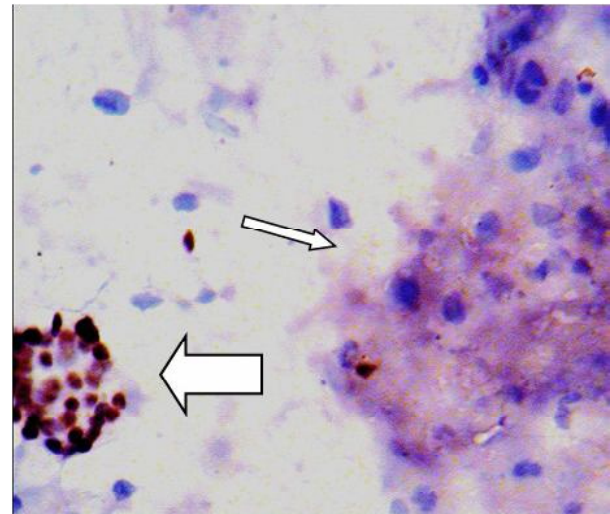


Figure 4: Photomicrograph of immunocytochemistry for TTF-1 marker showing intense nuclear positivity for thyroid follicular cells (thick arrow) and negative for squamous epithelial cells (thin arrow) (TTF-1, $\times 40$)

TTFI = thyroid transcription factor-1

exclude field cancerization which revealed increased metabolic activity at lower one third of oesophagus, bilateral cervical lymph nodes and thyroid gland with fat plane being maintained between thyroid gland and cervical lymph nodes (Figure 1). His thyroid function tests were within normal limits. Ultrasound guided FNAC from thyroid revealed metastatic squamous cell carcinoma (Figures 2, 3). Immunocytochemistry for thyroid transcription factor-1 (TTF-1) marker showed intense nuclear positivity for normal thyroid follicular cells and negative for squamous epithelial cells

(Figure 4). With the above findings the patient was diagnosed to have squamous cell carcinoma of lower thoracic oesophagus metastasized to bilateral cervical lymph nodes and thyroid gland. Patient received palliative external beam radiotherapy (EBRT) with photons to both primary tumour and metastatic non-regional bilateral neck nodes along with thyroid gland separately to a total dose of 30 Gy in 10 fractions over a period of two weeks following which he improved symptomatically and was discharged with the advice of best supportive and symptomatic care at home. Later he was referred for salvage chemotherapy and six months following three cycles of chemotherapy the patient is now in symptomatic remission.

DISCUSSION

Oesophageal carcinoma has become one of the major causes of cancer related mortality. Approximately half of newly diagnosed patients will present with locally advanced disease,² with a 20% to 30% 5-year survival rate after surgical resection or multimodality therapy. Thyroid gland is an unusual site of metastasis from non thyroid malignancies.¹ There are few reports of oesophageal squamous cell carcinoma with synchronous metastasis to thyroid.¹ Based on a recent review of literature, the most common non-thyroid malignancies that metastasize to the thyroid gland are renal cell (48.1%), colorectal (10.4%), lung (8.3%), and breast carcinoma (7.8%), and sarcoma (4.0%). Metastases of non-thyroid malignancies to the thyroid are more common in women than men (male to female ratio = 1 to 1.4) and in nodular thyroid glands (44.2%).¹

Despite its abundant vascular supply the thyroid gland receives few metastatic deposits. Willis³ proposed that fast blood flow through the thyroid discourages adhesion of malignant cells and the high oxygen saturation and iodine content may inhibit the growth of malignant cells.

Conversely when thyroid gland is altered by disease such as goitre, inflammation and neoplasm that leads to reduced blood flow and low iodine content thereby predisposing to metastasis.³

Metastasis to thyroid from non thyroid malignancy may be synchronous or metachronous. Most of the times thyroid involvement is multifocal may be along with metastasis in other organs. The metastatic squamous cell carcinoma of thyroid may be because of direct extension usually from adjacent primaries such as larynx, base of tongue or cervical part of oesophageal carcinoma, haematogenous metastases from lung or other primary sites and retrograde lymphatic spread.⁴

The management of thyroid metastasis with non-thyroid malignancies remain controversial due to obvious reasons like low incidence, difficulty at diagnosis, poor prognosis and lack of multi-institutional randomized studies. It depends on site of primary tumour, presence of other metastases and local symptoms by the thyroid mass.^{5,6} However in selected cases mainly metastases from renal cell carcinoma, surgical removal of solitary lesions may prolong survival.⁷ Although treatment must be individualized, aggressive surgical removal of metastases and EBRT are main therapeutic choices.

FNAC is a simple, cheap and safe tool in the diagnosis of metastatic disease. Unnecessary thyroidectomy can be avoided in patients with poor prognosis. Thyroid metastases from squamous cell carcinoma of the oesophagus were especially difficult to diagnose by FNAC and differential diagnosis includes primary squamous cell carcinoma.⁸ Immunocytochemistry is usually considered to differentiate between primary squamous cell carcinoma of thyroid from metastatic squamous cell carcinoma.⁸

In conclusion, we incidentally detected lesion suspicious of metastasis in thyroid from lower oesophageal primary during work up by PET-CT. In such cases thyroid malignancy can be diagnosed by FNAC but primary or secondary in thyroid can only be confirmed by immunocytochemistry which in turn can guide the oncologists for further care with palliative radiation therapy and salvage chemotherapy in view of poor prognosis and survival of these subgroup of patients.

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