



## Papillary Carcinoma Thyroid Co-existing with Upper Aerodigestive Tract Squamous Cell Carcinoma: Case Series

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Article History	Abstract
Received: 06 June 2023 Revised: 05 Sept 2023 Accepted: 25 Nov 2023	<p>The incidental discovery of papillary carcinoma of thyroid in a patient being investigated for squamous cell carcinoma of oral cavity is a rare clinical situation and appropriate management may vary from what was actually planned. We report a case series of 10 patients admitted with variable complaints of pain on swallowing, change in voice and breathing difficulty. Total Laryngectomy was done along with lymph node neck dissection. On histopathological examination, it showed poorly differentiated Squamous cell carcinoma. Tissue sent as paratracheal lymph node showed thyroid tissue with foci of Papillary carcinoma of thyroid which was a coincidental finding. A total of 10 cases with dual malignancy of Upper aerodigestive tract Squamous cell carcinoma coexisting with Papillary carcinoma thyroid as an incidental finding. Of which nine were male and one was female, had undergone Total Laryngectomy, Hemiglossectomy and Hemimandibulectomy was done along with lymph node neck dissection.</p>
CC License CC-BY-NC-SA 4.0	<p><b>Keywords:</b> Squamous Cell Carcinoma, Papillary carcinoma, Larynx, Thyroid.</p>

### 1. Introduction

The incidental discovery of papillary carcinoma of thyroid in a patient being investigated for squamous cell carcinoma of oral cavity is a rare clinical situation and appropriate management may vary from what was actually planned. Multiple primary malignancies in one patient was first described by Billroth in 1879 (1). Since then, this phenomenon has been identified in increasing numbers, may be due to increase in life expectancy of cancer survivors and more comprehensive screening protocols used in cancer patients. Two cancers in a single patient may be detected at the same time (synchronous) or one may follow the other after a period of time (metachronous) (2).

#### Case 1

A 70-year-old male was admitted in the hospital with pain on swallowing, change in voice since 2 months, breathing difficulty, cough and blood tinged sputum since 1 month. Tracheostomy was done outside one month back. He was a chronic bidi smoker and alcoholic.

On clinical examination, patient was conscious, oriented, afebrile and vitals were stable. On endoscopic examination, an ulceroproliferative lesion was seen in the endolarynx. On hematological investigations, moderate anemia with mild leukocytosis was present. Ultrasound guided FNAC from right cervical swelling was done which showed highly dysplastic epithelial cells suggestive of squamous cell carcinoma. Biopsy from laryngeal growth (supraglottis) revealed Moderately differentiated squamous cell carcinoma, following which total laryngectomy with right thyroidectomy and lymph node neck dissection was done. Per-operative findings showed an ulceroproliferative lesion involving entire endolarynx with spread to paraglottic space and involvement of thyroid cartilage with subglottic extension. Right cervical lymph nodes were multiple, matted to each other and involving sternocleidomastoid muscle, Inferior jugular vein, Accessory nerve and strap muscles along with thyroid gland. Large tumor thrombus is seen in right Inferior jugular vein. Left cervical level II, III lymph nodes and pretracheal nodes were enlarged and significant. Involvement of soft tissue around previous tracheostomy site was seen.

Grossly, an ulceroproliferative growth was seen measuring 4.5X3X2 cm involving whole glottic region, crossing the midline. Right thyroid gland was not involved by the tumor. On microscopic examination, total laryngectomy specimen showed a poorly differentiated squamous cell carcinoma involving bilateral transglottic tissues infiltrating deeper cartilage and bone. Tumor vascular emboli were seen. Attached thyroid tissue was unremarkable. Pharyngeal margin and Pre-epiglottic pad of fat were free of tumor. 7/28 lymph nodes showed tumor metastasis with perinodal extension. The tissue sent as paratracheal lymph nodes showed thyroid tissue comprising of follicles of varying sizes which were lined by cuboidal or flattened epithelium. Few large cystic spaces were seen filled with colloid and had foamy macrophages. Focal area revealed papillary structures which were covered with cells having high N:C ratio, some of the nuclei showed grooving and intranuclear inclusions and reported as foci of papillary carcinoma.

## Case 2

A 68-year-old female was admitted in the hospital with complaint of ulcer in the tongue, multiple swelling in the right side of neck, difficulty in swallowing and change of voice since 6 months. H/O loss of weight and appetite present

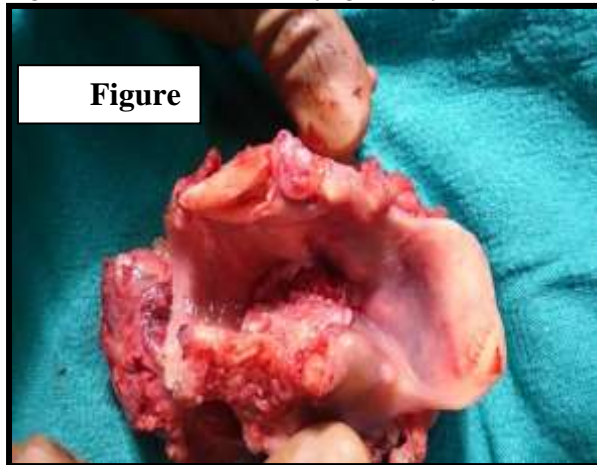
On clinical examination, patient was conscious, oriented, afebrile and vitals were stable. On examination, an ulceroproliferative lesion of 2.5 x 1.5 cm was seen in the lateral aspect of tongue with irregular margins and base of the ulcer showed necrotic debris. Right cervical lymph nodes were multiple, level II, III, IV and V lymph nodes matted to each other largest measuring 4x4 cm, hard in consistency and surface nodular. FNAC from right cervical swelling was done which showed highly dysplastic epithelial cells suggestive of squamous cell carcinoma. Biopsy from the growth on the tongue revealed Poorly differentiated squamous cell carcinoma, following which hemiglossectomy with radical neck node dissection was done.

Grossly, an ulceroproliferative growth was seen measuring 2 x 1 x 0.5 cm in the right lateral aspect of tongue. On microscopic examination, hemiglossectomy specimen showed a poorly differentiated squamous cell carcinoma invading in to the underlying skeletal muscle bundles. Tumor vascular emboli and perineural invasion were seen. Dissected 18 lymphnodes 11/18 lymph nodes showed tumor metastasis. Level IV lymph node showed thyroid tissue comprising of nodules of follicles of varying sizes which were lined by cuboidal or flattened epithelium. Few follicles are lined by cuboidal epithelium with centrally placed nuclei with high N:C ratio, some of the nuclei showed crowding, grooving and intranuclear inclusions and reported as foci of papillary carcinoma of follicular variant.

### Summary of Clinicopathological features of 10 Patients

S.No	Age/Sex	H/O Smoking	H/O Tobacco consumption	Site of Malignancy in Upper aerodigestive tract	Histologic differentiation	Type of Thyroid malignancy	pTNM Staging
1	70/M	Present	Present	Larynx	Moderate	PCT -Classic	IVa T3N2bMx
2	68/F	Absent	Present	Tongue	Poor	PCT - Follicular	IV T2N2bMx
3	62/M	Present	Present	Buccal mucosa	Moderate	PCT -Classic	IV T1N2bMx
4	68/M	Present	Present	Buccal mucosa	Poor	PCT -Classic	IV T3N2bMx
5	72/M	Present	Absent	Pharynx	Moderate	PCT -Classic	III T1N1Mx
6	80/M	Present	Present	Buccal mucosa	Moderate	PCT -Classic	IV T4N2cMx
7	81/M	Present	Present	Larynx	Poor	PCT -Classic	IVb T2N3Mx
8	76/M	Present	Absent	Buccal mucosa	Moderate	PCT -Classic	I T1N1Mx
9	79/M	Present	Present	Tongue	Moderate	PCT -Classic	IV T2N3Mx
10	80/M	Absent	Present	Pharynx	Poor	PCT -Classic	IVa T2N2bMx

Figure No.1. Total Laryngectomy.



FigureNo.2. Squamous Cell Carcinoma40X

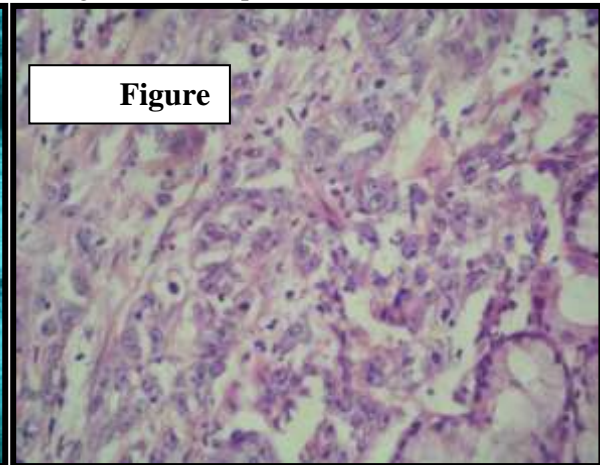


Figure No. 3&4. 10X and High Power(40X) view of Papillary Carcinoma Thyroid

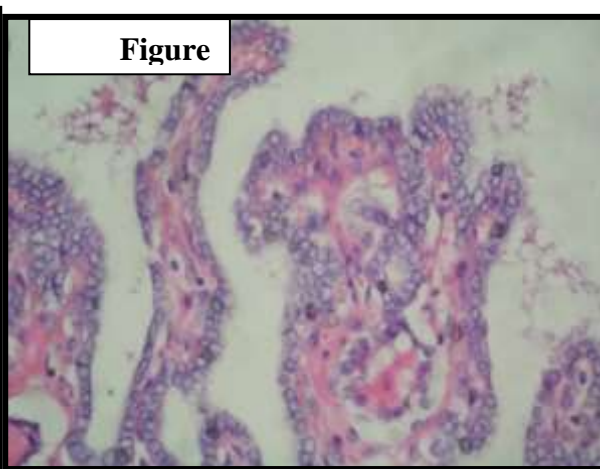
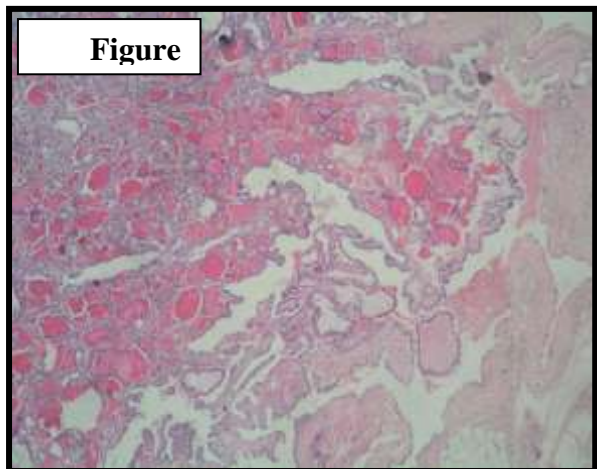


Figure No.5. Thyroid showing normal colloid follicles



## Discussion

The accidental discovery of papillary carcinoma of thyroid in a patient being investigated for primary carcinoma of oral cavity or oropharynx is a rare clinical situation. However, incidence of dual malignancy has increased recently and extensive research activities on this field is ongoing. Studies have proven that the coincidence of microsatellite instability and genetic defect of mismatch repair may be responsible for a small subset of multiple cancers. Kimura et al. concluded in his study that the germ-line p53 mutation was the cause for multiple primary cancers in his patient (3). Second primary tumors in patients with head and neck squamous cell carcinoma may be due to mutations caused by extrinsic carcinogens and also intrinsic susceptibility of an individual to develop cancer (4).

In literature, around 42 cases of metastatic deposits of papillary carcinoma thyroid have been reported in lymph nodes dissected as part of treatment of squamous cell carcinoma of oral cavity (5). Few studies have been done in search of metastatic thyroid carcinoma on neck dissections of Head & Neck squamous cell carcinoma and incidence varies from 0.3% to 0.6% (6,7,8). Ansari-Lari and Westra found metastatic thyroid tissue in 1.5% of head and neck squamous cell carcinomas treated with neck dissection (9). Butler et al. have reported that around 5% of patients diagnosed with head and neck cancer can harbor clinically unsuspected thyroid carcinoma (10).



Prognosis of the synchronous second malignancy is on controversy. In a study by Mark et al, they observed that out of 2538 neck dissections performed at their institution over a period of 15 years, 29 patients had an incidental finding of well-differentiated thyroid carcinoma. 15 patients died during period of that study and 14 patients were alive till their follow-up. 7 patients, who were still alive, received further treatment for their thyroid cancer: 2 with completion thyroidectomy, 2 with I-131 ablation, and 3 with both. There was no clinical evidence of recurrence of thyroid cancer in any of patients who had died and none of them died due to thyroid cancer. Recurrence of thyroid carcinoma was not seen even in any of the above patients. So, they concluded that intensive management of occult well differentiated carcinoma of thyroid in patients with Head & Neck Squamous Cell Carcinoma is not necessary (11).

In a study by Grosjean et al in patients who had been treated for head and neck cancer, they concluded that prompt diagnosis and treatment of second primary tumors lead to a good survival rate similar to that of patients diagnosed with single head and neck cancer. This study suggests that in patients with head and neck cancer, intensive screening for second primary tumors may result in favorable outcome (12).

Di Martino et al. also studied patients treated for head and neck cancer and concluded that the treatment of second primary is often less successful than that for same malignancy occurring primarily. The prognosis of synchronous tumors is significantly lower as compared to that of malignancies of metachronous nature. Only early implementation of aggressive treatment methods for second primary malignancies is successful in terms of survival. In one study, an aggressive treatment strategy was employed wherever clinically suspected and yielded most favorable results, with five-year survival rate of 66.8% and 35.9% for primary tumors and second primary malignancies respectively (13).

These studies signify the importance of the necessity for thorough search for additional neoplasms in patients with cancer which may drastically affect survival of the patient (14). In this study, the identification of papillary carcinoma thyroid was an incidental finding seen in an extrathyroidal tissue and does not affect the planned treatment.

#### **4. Conclusion**

Papillary carcinoma thyroid in the presence of squamous cell carcinoma of larynx is a rare clinical phenomenon. In these cases, outcome of the patient depends on the behavior of the primary tumor and not by thyroid lesion (5). By this case report, we intend to highlight importance of removal of any suspicious-looking mass depending on surgeon's decision and it is the duty of pathologists to make sure that extensive sampling should be done in these cases.

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