

Follicular Carcinoma Thyroid with Focus of Squamous Cell Carcinoma - A Case Report

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Abstract

Collision tumors of the thyroid gland are a rare entity. Primary squamous cell carcinoma of the thyroid (PSCCT) is a malignant epithelial tumor, composed entirely of cells with squamous differentiation and accounting for less than 1% of all malignancies of the thyroid gland. PSCCT arises from other thyroid diseases such as Hashimoto's thyroiditis, tall cell variant papillary carcinoma, follicular carcinoma, and anaplastic carcinoma¹. We describe a patient with the combination of a well-differentiated squamous cell carcinoma and follicular carcinoma of the thyroid.

Keywords: Follicular carcinoma, Squamous cell carcinoma.

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INTRODUCTION

The term "collision tumor" refers to coexistent but independent tumors that are histologically distinct. Collision tumors can occur within the same organ or adjacent organs or in conjunction with a systemic malignancy or as a metastatic phenomenon². The origin of squamous cells within the thyroid gland has many theories. These can be found as a result of persistence of thyroglossal duct or from a branchial pouch. They may also arise from a squamous metaplasia in a papillary carcinoma, anaplastic carcinoma, Hashimoto's thyroiditis or other conditions. There was no evidence of squamous metaplasia or transformation from one tumor to the other. In this case the histological features of both tumors were distinct and remained consistent in our examination. The de novo occurrence of primary squamous cancer from follicular cells has also been advocated³. However, such primary squamous cancers of the thyroid are extremely rare and account for less than 1% of all thyroid neoplasms. Moreover, the tumor cells stain positively with thyroglobulin. Lack of thyroglobulin positivity in squamous carcinoma cells

ruled out the possibility of follicular epithelial origin in our case.

CASE REPORT

A 68-year-old female, presented with swelling in front of neck since 5 years, swelling progressively increased in size within last 1 year. She also developed dyspnoea and difficulty in swallowing since 6 months. Imaging studies showed enlarged right lobe lesion measuring 9.7x3.5x7.6cm with partial extension to internal jugular vein. FNAC report given as suspicious of follicular neoplasm. The patient underwent Total thyroidectomy with segmental resection of IJV and lymph node resection. Histopathological examination showed a neoplasm composed of cells in follicular pattern with capsular and vascular invasion. Skeletal muscle and internal jugular vein invasion were present. One focus showed squamous cell carcinoma component. Lymphnodes obtained were reactive. Patient underwent adjuvant radioiodine therapy. Immunohistochemistry showed TTF1 positive in follicular neoplastic cells. P63 positive in squamous areas with CK 19 weak positivity.

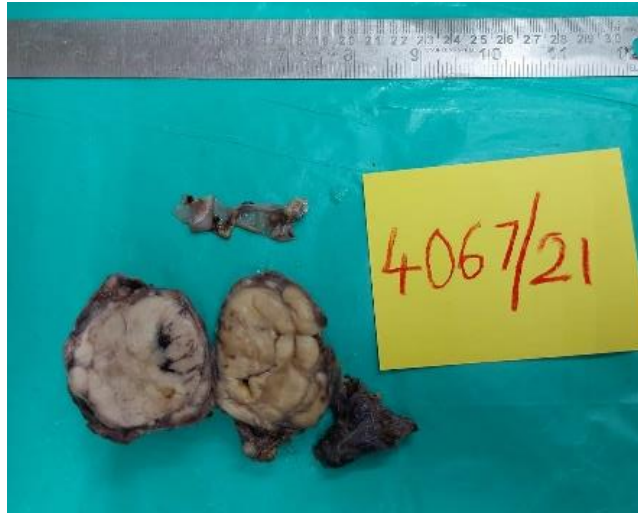
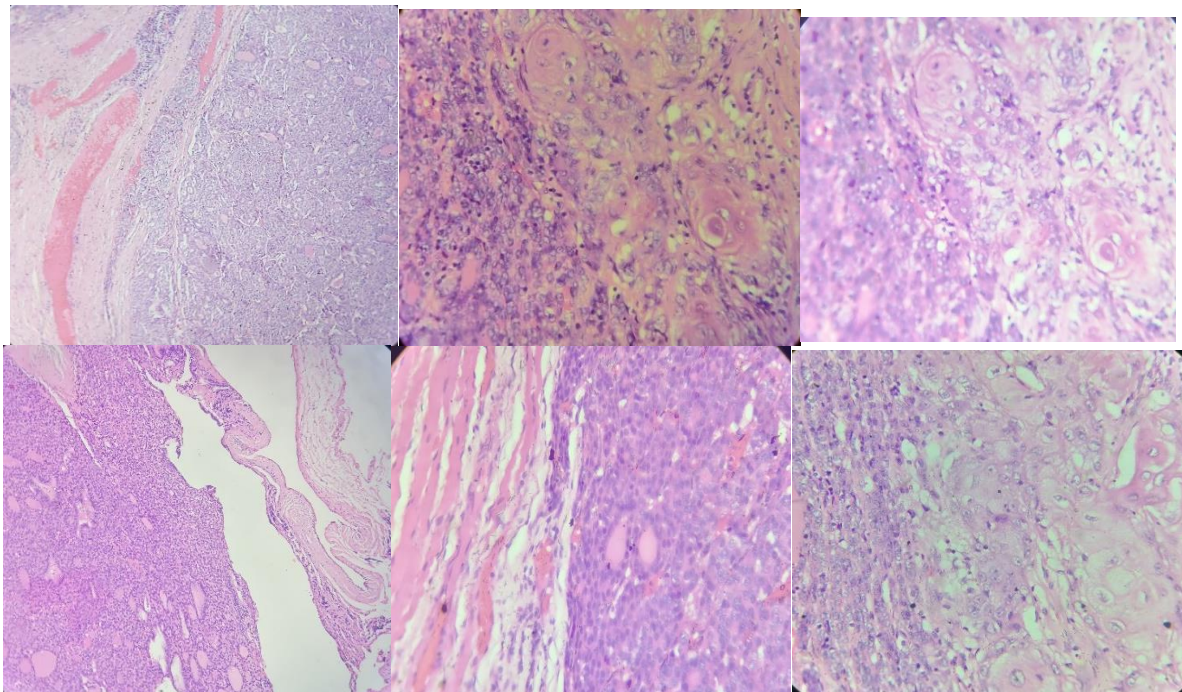


Figure 1: Enlarged thyroid with grey white lesion, metastasis to IJV



IJV Extension

Muscle Invasion

Figure 2-7: H&E stained smears

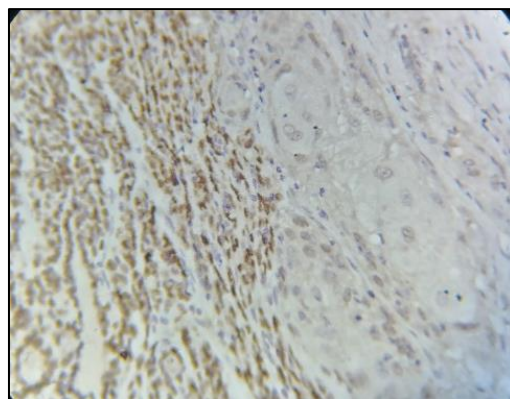


Figure 8: TTF1 – Positive

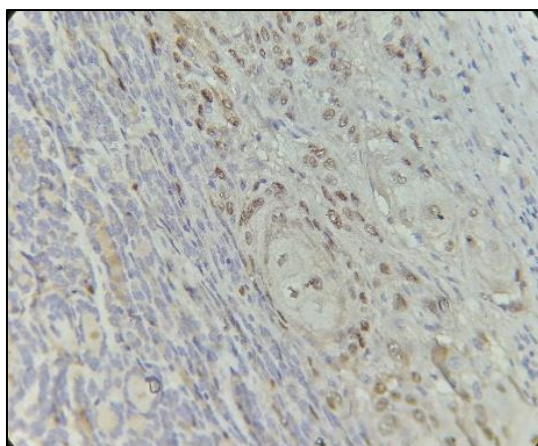


Figure 9: P63 – Positive

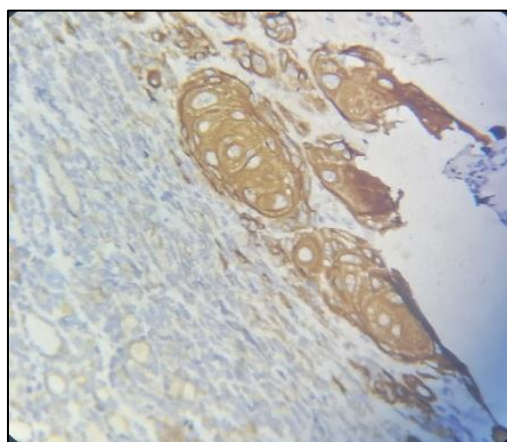


Figure 10: CK19 - Positive

Follow-up: Patient is on follow up to start radioiodine therapy.

DISCUSSION

Primary squamous cancers of the thyroid gland are innately aggressive tumors and typically present with a high incidence of pressure symptoms (dysphagia and dyspnea), infiltration of the surrounding soft tissue and history of recent onset of the symptoms, usually within weeks or months. Moreover, squamous cell carcinomas are the commonest metastatic disease in the head and neck. Hence, it is important to rule out infiltration of the thyroid gland from an adjacent organ and metastasis from a distant organ before labeling a squamous cell carcinoma as a primary thyroid cancer. In our case, the squamous cancer was restricted to the thyroid gland. Absence of symptoms, a negative physical examination and a negative review of systems helped to exclude a metastatic squamous carcinoma.

Metastasis to the thyroid gland is not as unusual as previously believed. The incidence of thyroid gland involvement in autopsy studies ranges from 1.25% – 24.2%. The primary tumor can usually be identified in 95% of the cases. The presence of metastasis to thyroid indicates a disseminated disease and reflects a very poor prognosis, with average

survival from diagnosis to death of 2 months. However, a previous history of a malignancy is essential to make this diagnosis. Another source of a squamous cell carcinoma in the thyroid could be an invasion from a carcinoma of the larynx, tongue base or esophagus; which commonly invade the thyroid gland. A normal head and neck examination, pan endoscopy and barium swallow ruled out the possibility of infiltration of the thyroid gland by a primary in an adjacent organ.

CONCLUSION

Collision tumors of the thyroid are extremely rare and pose a diagnostic as well as therapeutic challenge. Metastasis from distant organs and contiguous primary tumors should be excluded. The origins of squamous cancer in the thyroid gland must be evaluated to establish the true evolution of a collision tumor and to plan treatment accordingly. Treatment guidelines are poorly defined due to the dearth of literature on this subject. Treatment for collision tumors should depend upon the combination of primary tumors involved and each component of the combination should be treated like an independent primary. In our case a slow growing tumor with predominance of

differentiated thyroid cancer had a focus of squamous cell carcinoma and hence surgical resection followed by adjuvant radioiodine.

REFERENCES

- WHO Classification of tumours of Endocrine organs, Revised 4th Edition, 2017.
- Walvekar, R. R., Kane, S. V., & D'Cruz, A. K. (2006). Collision tumor of the thyroid: follicular variant of papillary carcinoma and squamous carcinoma. *World journal of surgical oncology*, 4, 1-6.
- Roh, J. L., & Cho, K. J. (2014). Combined squamous cell carcinoma and follicular carcinoma of the thyroid. *Korean journal of pathology*, 48(6), 418-422.