



COLLISION TUMOR OF PAPILLARY THYROID CARCINOMA AND FOLLICULAR THYROID CARCINOMA – A CASE REPORT

Pathology

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ABSTRACT

Background: Papillary Carcinoma Thyroid and Follicular Carcinoma Thyroid are the most commonly differentiated thyroid malignancies, but the occurrence of a collision tumor in the thyroid lobe is a very rare event. **Case Presentation:** A 49-year-old female patient presented with swelling in the anterior aspect of neck for 5 years. A fine needle aspiration cytology of the neck swelling done preoperatively revealed a cytological diagnosis of Follicular Nodular disease. A total thyroidectomy was performed. Histopathological examination of the thyroidectomy specimen revealed a collision tumor of Papillary Carcinoma Thyroid and Follicular Carcinoma Thyroid in the left lobe of thyroid and Papillary Thyroid Microcarcinoma in the right lobe of thyroid with a background of Nodular hyperplasia. **Conclusion:** A case of a collision tumor of Papillary Carcinoma Thyroid and Follicular Carcinoma Thyroid in left lobe and Papillary Thyroid Microcarcinoma in the right lobe is a very rare event and only few cases have been reported in the literature. However, co-existence of both the lesions can occur and can be successfully diagnosed with histopathological examination.

KEYWORDS

Papillary Carcinoma Thyroid, Follicular Carcinoma Thyroid, Collision tumor, Microcarcinoma

INTRODUCTION

Papillary carcinoma thyroid and Follicular carcinoma thyroid are the two mainly differentiated types of thyroid malignancies arising from thyroid follicular epithelial cells. Papillary carcinoma thyroid is the most common thyroid malignancy accounting for 70 to 80% of thyroid cancers and Follicular carcinoma thyroid is the second most common thyroid malignancy accounting for about 10 to 15% of all the thyroid malignancies [1]. However, a simultaneous occurrence of Papillary carcinoma thyroid and Follicular carcinoma thyroid as a collision tumor is extremely rare. Only few cases have been reported and published in the English literature [2–7]. The current case is a report of a collision tumor of Papillary Carcinoma and Follicular Carcinoma thyroid in left lobe and Papillary Microcarcinoma thyroid in the right lobe.

A Collision tumor is the presence of simultaneous occurrence of two different neoplasms which are histologically and morphologically different from each other [8-9]. Collision tumor of thyroid refers to existence of two or more histologically different malignant neoplasms. It is an extremely rare event for thyroid to harbor more than one malignant neoplasm simultaneously [10]. The usual pattern of this collision tumor combination includes Papillary and Medullary carcinoma, Papillary carcinoma and Squamous cell carcinoma, Papillary carcinoma and Follicular carcinoma [11-15].

Case Report

A 49-year-old female patient presented with swelling in the anterior aspect of neck for a duration of 5 years. No co-morbidities noted in the patient. Radiological findings showed Multinodular goitre involving both lobes of thyroid. A fine needle aspiration cytology of the neck swelling done preoperatively revealed a cytological diagnosis of Follicular Nodular disease. A total thyroidectomy was performed. Histopathological examination of the thyroidectomy specimen revealed a collision tumor of Papillary Carcinoma Thyroid and Follicular Carcinoma Thyroid in the left lobe of thyroid and Papillary Thyroid Microcarcinoma in the right lobe of thyroid with a background of Nodular hyperplasia. The isthmus showed Nodular hyperplasia.

Macroscopy:

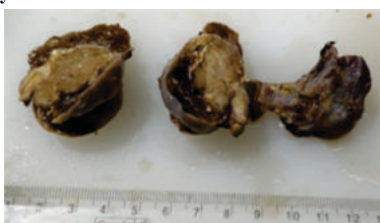


Figure 1: Gross Appearance Of Cut Surface Of Left Lobe Of Thyroid With Right Lobe And Isthmus

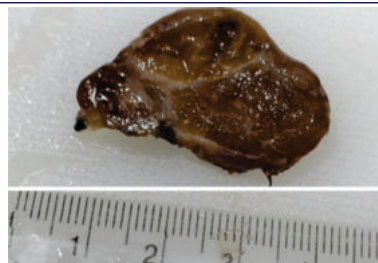


Figure 2: Gross Appearance Of Cut Surface Of Right Lobe Of Thyroid

Microscopy

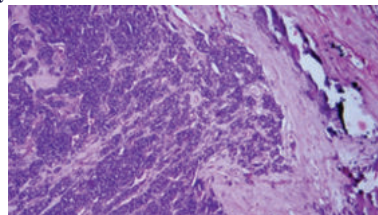


Figure 3: Follicular Carcinoma In Left Lobe Of Thyroid With A Focus Of Capsular Invasion (Low Power View)

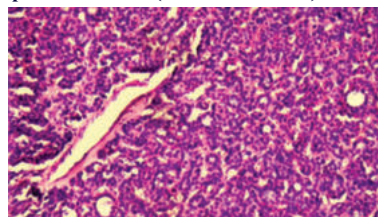


Figure 4: Follicular Carcinoma In Left Lobe Of Thyroid Composed Of Small Follicles Arranged In Follicular Pattern And Sheets With Increased Vascularity

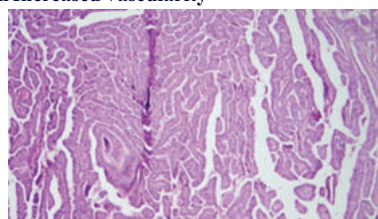


Figure 5: Papillary Carcinoma Showing Papillary Pattern With Fibrovascular Cores

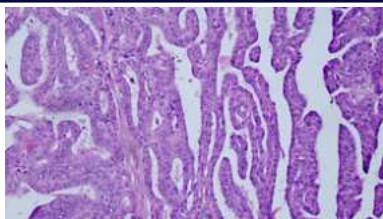


Figure 6: Papillary Carcinoma – Higher Magnification

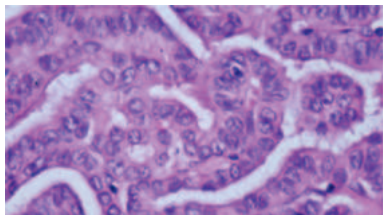


Figure 7: Papillary Carcinoma – Nuclear Crowding, Nuclear Clearing And Nuclear Overlapping.

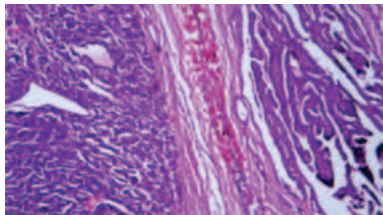


Figure 8: Collision Tumor Showing Follicular Carcinoma And Papillary Carcinoma Separated By Fibrous Septa.

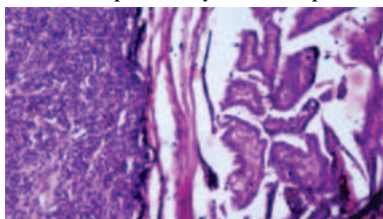


Figure 9: Collision Tumor (Higher Magnification) Showing Follicular Carcinoma And Papillary Carcinoma Separated By Fibrous Septa.

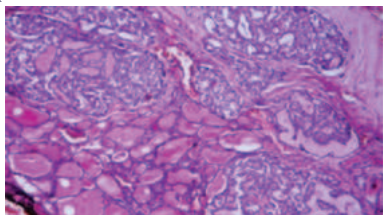


Figure 10: Papillary Microcarcinoma Thyroid In Right Lobe

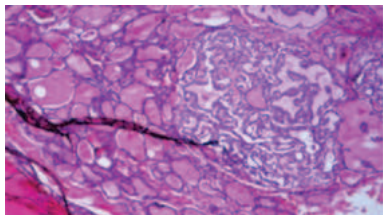


Figure 11: Papillary Microcarcinoma Thyroid In Right Lobe (Higher Magnification)

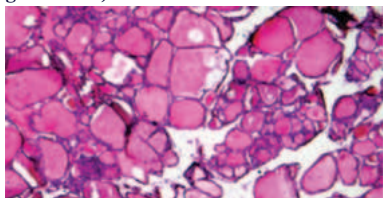


Figure 12: Nodular Hyperplasia In The Background And Isthmus

DISCUSSION

Papillary thyroid carcinoma is the most common malignancy of thyroid gland accounting for almost 70-80 % of thyroid malignancies and Follicular thyroid carcinoma is the second most common thyroid malignancy accounting for 10 to 15% of thyroid malignancies. Papillary carcinoma thyroid tends to spread via lymphatic route and Follicular carcinoma thyroid spreads via hematogenous route. This case showed two distinct pathologies occurring simultaneously as a collision phenomenon in the left lobe of thyroid gland and presence of Papillary thyroid microcarcinoma in the right lobe of thyroid gland. Both Papillary carcinoma thyroid and Follicular carcinoma thyroid are well differentiated and have good prognosis when occurring independently but Collision tumor can be more aggressive [16]. In this case, Total thyroidectomy was performed for the patient and the patient is having good outcome and currently being followed up.

CONCLUSION

Collision tumor of Papillary Thyroid Carcinoma and Follicular Thyroid Carcinoma is an extremely rare phenomenon and, in this case, we have reported a rare collision tumor of PTC and FTC in left lobe and Papillary Microcarcinoma thyroid in the right lobe. Only few cases have been reported and published in the literature which revealed that collision tumors most commonly affect females and Complete Thyroidectomy is the ideal management of choice for such cases and is associated with good survival and outcomes.

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