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Short Communication

Mixed Medullary and Papillary Carcinoma: A Microscopic Examination and Malignancy

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DESCRIPTION

Based on our previous study a 53-year-old woman had a mastectomy for right breast cancer and had a history of hypertension presented with progressive neck swelling. She had no known family members who had Pheochromocytoma, hyperparathyroidism, or Medullary Thyroid Cancer (MTC). A 2 cm soft, elastic lump was felt on the left side of the neck during the physical examination. Free thyroxin and thyroid stimulating hormone levels in the blood were also normal. The thyroid's right lobe had an is echoic irregular nodule measuring 8.3 mm × 7.6 mm × 5.8 mm, while the left lobe had a hypo echoic heterogeneous nodule measuring 19.2 mm × 18.7 mm × 14.0 mm. The left lobe nodule's fine-needle aspiration cytology revealed irregular atypical cells.

A radical thyroidectomy and central neck lymph node dissection were performed out and in response to the patient's request and the atypical clinical features. The left thyroid nodule was found to have invaded the strap muscles during the operation. The patient went into surgery the left thyroid lobe measured 5.5 cm × 3.0 cm × 2.5 cm. while the right thyroid lobe measured 4.5 cm × 3 cm × 1.5 cm on a macroscopic examination. Serial slices revealed a gray-white soft tumor mass with such a diameter of about 2.4 cm in the thyroid parenchyma on the left side, and tan-brown nodules on the right side of the thyroid that have been slightly goiter-like.

The left-side thyroid tumor was microscopic examined, and a partially encapsulated nodular tumor made of solid sheets and follicles of neoplastic cells with round to polygonal shapes, big nucleoli, granular cytoplasm, and medium-sized nuclei was found (Figure 1A, hematoxylin and eosin 40; Figure 1B, hematoxylin and eosin). Atypical mitoses, angioinvasion, and foci of calcification were observed. Congo red staining with a polarizer showed amyloid deposition in the fibrous stoma. The neoplastic cells failed to express HBME-1 and cytokeratin 19, but cells could express TTF-1, synaptophysin, chromo-grain A, and CD56, as according immunochemical experiments (Figure 1C). The way to identify was predictive of medullary carcinoma. There was no indication of metastatic cancer in the two removed lymph nodes.

The right side of the thyroid's histological findings revealed three small foci of papillary micro carcinoma, each up to 3 mm in diameter, made up of cancer cells arranged in papillary patterns with ground-glass nuclei and nuclear grooves (Figure 1D, hematoxylin and eosin 200).

The majority of thyroid malignancies, around 85% and 90%, are Papillary Thyroid Carcinomas (PTC), the most prevalent histologic form of thyroid carcinoma [1]. MTCs, which make it up 5% to 10% of all cancer cases [2], differ from PTCs in terms of the origin of their cells, histopathological features, and clinical therapy. There were reports of mixed thyroid medullary and papillary cancer in the literature.

The prevalence of simultaneous medullary and papillary thyroid carcinomas in PTC patients was reported to be about 2.6% by Machens and Dralle [3], though the true prevalence is unknown. Even though the exact cause of the two separate forms of thyroid cancer in the thyroid gland is still unclear, it has been hypothesized that they may have different genetic origins or arises from a similar tumorigenic pathway [4]. According to previous studies, separate thyroid lobes are included the MTC and PTC components [5-7]. Despite a lack of a genetic analysis, this raises the possibility of independent tumors and backs up the theory of a coincidental event. The bulk of literature reports are case reports, and there are few long-term overall survival results, so the prognosis for a patient with these mixed thyroid carcinomas is unclear.

The prognosis for patients with MTC is poorer than for people with PTC [8]. Therefore, it is imperative to the patients with mixed medullary papillary thyroid carcinomas with long-term follow-up of patients.

CONCLUSION

Understanding this uncommon, lesser-known MTC variation is crucial to avoid diagnostic challenges and because of the implications for prognosis. The study emphasises the significance of immuno-histochemical markers for accurate identification and excluding other comparable cancers.

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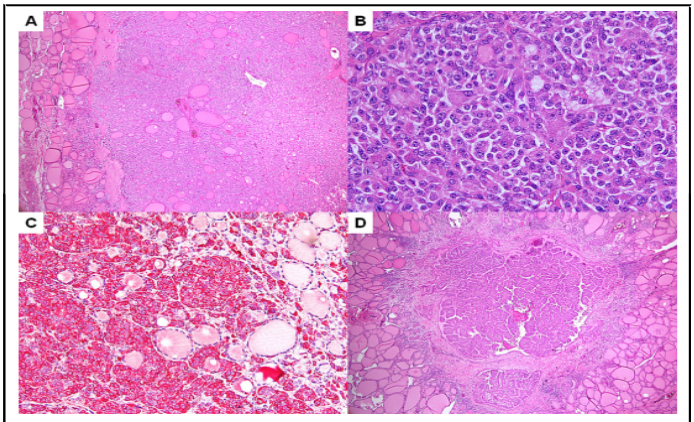

Figure 1: Mixed medullary and papillary carcinoma of the thyroid, (A) On The Left side of the thyroid, there is a solitary partly encapsulated nodular tumour made up of solid sheets and follicles of malignant cells (hematoxylin and eosin 40). (B) The Neoplastic cells have medium-sized nuclei, granular cytoplasm, and round to polygonal, round, or polygonal nucleoli (hematoxylin and eosin 400). (C) The immunochemical testing shows that cancer cells express calcitonin (200). (D) The Right side of the thyroid's histological findings reveal three small foci of papillary micro carcinoma, all measured up to 3 mm in diameter and composed of tumour cells arranged in papillary patterns with ground-glass nuclei and nuclear grooves (hematoxylin and eosin 200).

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