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Epidemiology and Prevention

Synchronous primary hyperparathyroidism and papillary thyroid carcinoma in a 50-year-old female, who initially presented with uncontrolled hypertension

Seyed Seifollah Beladi Mousavi[1], Hamid Nasri[2*], Saeed Behradmanesh[3]

Though, the association between parathyroid and thyroid diseases is not uncommon, however concurrent presence of parathyroid adenoma and thyroid cancer is rare (1,2). The association between concurrent thyroid and parathyroid disease was firstly explained by Kissin *et al.* in 1947 (2). Awareness of this situation will enable clinicians to consider for possible thyroid pathology in patients with primary hyperparathyroidism. While thyroid follicular cells and parathyroid cells are embryologically different. It is evident that presence of parathyroid adenoma leading to primary hyperparathyroidism and coexistent of thyroid papillary cancer is rare. Both of these endocrine diseases could then be managed with a single surgery involving concomitant resection of the thyroid and involved parathyroid glands.

A 50-year-old female, referred to the nephrology clinic for control of hypertension. Hypertension was found several years before referring and patient was under various antihypertensive drugs. In examination, we noticed to a blood pressure of 190/110 mmHg. Patient had a body mass index of 32 kg/m^2. Thyroid was not detectable and neck examination was free of adenopathy. In the routine laboratory tests, which usually performed for the evaluation of hypertension, we noticed to a serum calcium of 13 mg/dl (reference range, 8.2 to 10.2). Further evaluation, confirmed a low serum phosphorus and a high serum parathyroid hormone, while renal functions tests, serum vitamin D and serum calcitonin levels was within normal range. Patients had not history of treatment with calcium or vitamin D supplements. A Technetium (99 mTc) sestamibi scintigraphy showed a distinct functioning nodule in the lower right pole of the thyroid. A conducted aspiration biopsy of both parathyroid and thyroid nodule was indicative of simultaneous parathyroid adenoma and papillary thyroid carcinoma. Total thyroidectomy accompanied by removal of parathyroid nodule in one procedure. Morphologic lesions of the resected tissues confirmed the diagnosis of parathyroid adenoma with coincidence of papillary thyroid carcinoma. After surgery, serum parathormone and calcium returned to their normal values and patient was referred to an endocrinologist for continuing the treatment of papillary carcinoma.

Implication for health policy/practice/research/medical education

An association between parathyroid adenoma and thyroid cancer is rare. Awareness of this situation will enable clinicians to consider for possible thyroid pathology in patients with primary hyperparathyroidism. Both of these endocrine diseases could then be managed with a single surgery involving concomitant resection of the thyroid and involved parathyroid glands.

Concomitant papillary thyroid carcinoma and primary hyperparathyroidism is rare. It still remains controversial whether these two pathologies happen coincidental or are caused by specific risk factors or genetic changes.

Papillary thyroid carcinoma is found to be the most common form of thyroid cancer, which usually persists clinically silent till its incidental histologic diagnosis in autopsy or surgical material.

In primary hyperparathyroidism, papillary thyroid carcinoma has been well described. Awareness of this situation will enable clinicians to consider for possible thyroid pathology in patients with primary hyperparathyroidism. Both of these endocrine diseases could then be managed with a single surgery involving concomitant resection of the thyroid and involved parathyroid glands (3-6).

Another educational point of this patient is the necessity to measure the serum calcium in various circumstances related to hypercalcemia such as hypertension (7).

Authors' contributions

All authors wrote the manuscript equally.

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[1]Chronic Renal Failure Research Center, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran. [2]Department of Internal Medicine, Isfahan University of Medical Sciences, Isfahan, Iran. [3]Nour Medical Center, Isfahan, Iran.

***Corresponding author:** Prof. Hamid Nasri. Email: hamidnasri@yahoo.com

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The authors declared no competing interests.

Ethical considerations

Ethical issues (including plagiarism, misconduct, data fabrication, falsification, double publication or submission, redundancy) have been completely observed by the authors.

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