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Parathyroid carcinoma in hemodialysis patients; it should not be diagnosed as a thyroid nodule

Mohammad-Reza Ardalan*

Case presentation

A 67 year-old female with 6 years history hemodialysis due to of autosomal dominant polycystic kidney disease, noted to have a hard nodule on the right thyroid gland. Firstly, the patient was planted to undergo a fine needle aspiration with the primary diagnosis of thyroid nodule by endocrinologist. Her serum calcium was 11.6 mg/dl, intact PTH (iPTH) level was 987 pg/ml. After 6 weeks of daily oral taking of 30 mg of Cinacalcet hydrochloride (Sensipar), the iPTH level decreased from 1123 to 987 pg/ml, however, there the response was not appropriate. Ultrasonography of the neck revealed a 14 mm mass on the right lower thyroid lobe. A sestamibi scan of the neck and mediastinum revealed marked increased radiotracer activity in the region of the right thyroid lobe with faint activity in the region of the left thyroid lobe. She underwent parathyroid surgery. There was a large and firm, gray color right lower parathyroid gland with adherence to the surrounding tissue compatible with malignant tumor (Figure 1).

A near total parathyroidectomy was performed, leaving a small remnant of well-vascular ized left upper parathyroid tissue. The pathologic findings of trabecular pattern, fibrous bands, mitotic figures, and capsular invasion were also indicative of malignant nature of the lesion. In the follow up study of the patient, the sestamibi scan did not revealed any metastasis in the regional area and lung. Besides, follow up study, two years after operation, showed no signs of tumor metastasis, through clinical or paraclinical examinations.

Two years and but up to now that is two years after operation the patient has a good condition without any clinical sign of metastasis or hyperparathyroidism. iPTH remains below 400 pg/ml.

Discussion

A palpable hard neck mass and moderate to severe hypercalcemia and high level of iPTH serum value, and relative resistance to calcimimetic therapy could be clues for malignant transformation of parathyroid gland.

Implication for health policy/practice/research/medical education

The incidence of parathyroid carcinoma is about 0.5% of cases of primary hyperparathyroidism, however, its incidence in dialysis patients with secondary or tertiary hyperparathyroidism is very rare and around 20 patients has been reported yet. About 10% of all parathyroid cancers are nonfunctioning and are associated with poor prognosis.

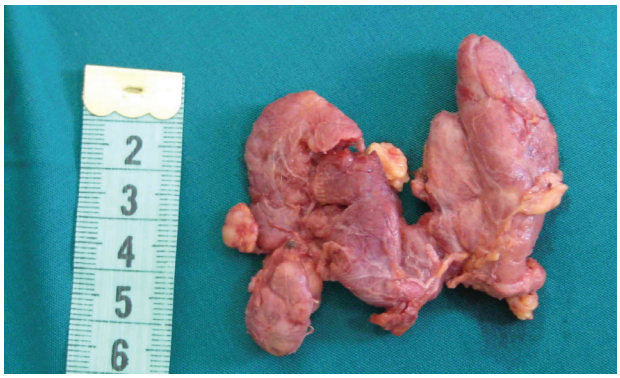

Figure 1. A large and firm, gray color right lower parathyroid gland with adherence to the surrounding tissue compatible with malignant tumor.

Is very important not to damage the capsule of the tumor. Fine-needle aspiration may cause local spread of tumor cells and should be avoided. Parathyroid carcinoma has a gender distribution of approximately 1:1 and most often occurs in 5^{th}-6^{th} decades of life. The incidence of parathyroid carcinoma is about 0.5% of cases of primary hyperparathyroidism, however, its incidence in dialysis patients with secondary or tertiary hyperparathyroidism is very rare and around 20 patients has been reported yet. About 10% of all parathyroid cancers are nonfunctioning and are associated with poor prognosis (1,2).

Author's contribution

MRA was the single author of the paper.

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Chronic Kidney Disease Research Center, Tabriz University of Medical Sciences, Tabriz, Iran.
***Corresponding author:** Prof. Mohammad-Reza Ardalan, E-mail: ardalan34@yahoo.com

Ethical considerations

Ethical issues (including plagiarism, data fabrication, double publication) have been completely observed by the author.

Conflict of interests

The author declared no competing interests.

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