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## ASSOCIATION OF PRIMARY HYPERPARATHYROIDISM AND PAPILLARY THYROID CARCINOMA IN A PATIENT WITH BROWN TUMOR AND PARKINSONISM: CASE REPORT

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### ABSTRACT

Primary hyperparathyroidism is an endocrine disorder characterized by primary abnormality of parathyroid tissue leads to inappropriate secretion of parathyroid hormone. The inappropriately high serum concentration of parathyroid hormone in primary hyperparathyroidism, in turn, sustains excessive renal calcium reabsorption, phosphaturia, and calcitriol synthesis, as well as increased bone resorption. These actions of parathyroid hormone produce the characteristic biochemical phenotype of hypercalcemia and hypophosphatemia, loss of cortical bone, hypercalciuria, and the various clinical sequelae of chronic hypercalcemia, including renal, gastrointestinal, neuromuscular, psychological and skeletal.

We would like to present a 64-year-old female case, who had almost all manifestations of primary hyperparathyroidism, also those, which is not common like brown tumor and parkinsonism.

Brown tumor is considered a rare skeletal manifestation of hyperparathyroidism. It is a non-neoplastic, reactive bone lesion resulting from parathyroid hormone excessive secretion. The incidence of brown tumor is reported to be approximately 3-4.5% in primary hyperparathyroidism in the literature.

Hyperparathyroidism associated with hypercalcemia can worsen underlying parkinsonism. The association between hypoparathyroidism and parkinsonism have been frequently reported in the literature, while evidence of hyperparathyroidism associated with parkinsonism is rare, and further studies in this regard could be revolutionary.

In this case, there are also coexistence of primary hyperparathyroidism and papillary thyroid carcinoma. Primary hyperparathyroidism is associated with a modestly increased risk of developing various cancers, including thyroid cancer, breast cancer, and potentially other malignancies. So, maybe other studies need to discover this link and suggest more carefully examine this patient in terms of cancer risk, especially thyroid cancer.

Surgical intervention was chosen as the definitive treatment. Following surgery, the patient's overall condition, including her neurological symptoms, improved significantly.

**KEYWORDS:** primary hyperparathyroidism, calcium, brown tumor, thyroid cancer, parkinsonism

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