



## Case Report: Camouflaged Parathyroid Adenocarcinoma

Hongtao Cao and Weibin Wang\*

Department of General Surgery, Peking Union Medical College Hospital, China

### Abstract

Parathyroid carcinoma is a rare malignancy with an increasing incidence from 3.58 to 5.73 per 10 million people according to SEER (Surveillance, Epidemiology, and End Results) from the year of 1988-2003. Most patients are characterized by the presence of severe primary hyperparathyroidism, especially hypercalcemia, while patients with normal level of serum calcium are extremely rare. Unfortunately, patients free of hypercalcemia are usually diagnosed at a later stage and suffer from a rather poor prognosis. Hence, preoperative suspicion of malignancy is of great importance. We describe a patient with non-hypercalcemia parathyroid carcinoma, whose preoperative ultrasound suggests that the tumor is located inside the thyroid gland, which is very confusing. We would like to share this case to raise more attention and vigilant for better diagnosis.

**Keywords:** Parathyroid adenocarcinoma; Non-hypercalcemia; Ultrasonography; Pathology; Surgical treatment

### Case Presentation

A 56-year-old previously healthy woman was admitted to our medical center because of a single solid nodule in the right lobe of the thyroid detected by ultrasonography and scheduled for surgery, before which a preoperative assay of serum level of Calcium (Ca) and Phosphorus (P) were normal (Ca: 2.50 mmol per liter, P: 0.94 mmol per liter) (Figure 1). During the operation, it was found that

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#### \*Correspondence:

Weibin Wang, Department of General Surgery, Peking Union Medical College Hospital, No.1 Shuaifuyuan, Dongcheng District, Beijing, 100730, China,

E-mail: [wwb\\_xh@163.com](mailto:wwb_xh@163.com)

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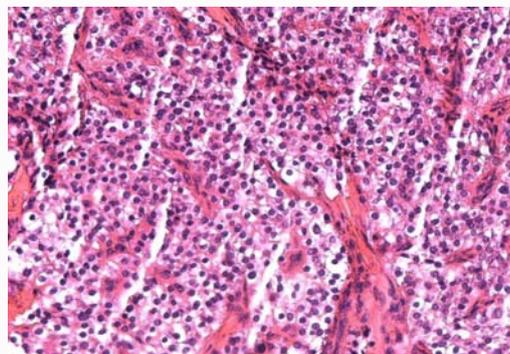
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**Figure 1:** Ultrasonography showed a hypoechoic nodule inside the right lobe of the thyroid with irregular shape and fairly clear margins were close to the posterior capsule. Short banded strong echoes were detected internally. CDFI: Short banded blood flow signals were seen internally.



**Figure 2:** Paraffin pathology showed: parathyroid adenocarcinoma, SDHB (+), CEA (-), CgA (+), CK19 (-), Ki-67 (index 3%), P53 (-), Syn (-), Thy (-), TTF-1 (-), Calretinin (-).

thyroid membrane was intact, and the tumor was completely inside the gland, the texture was soft, and the tumor size was approximately 1.5 cm × 1.2 cm × 0.2 cm. The right lobe and Isthmus of thyroid were removed as well as the right VI lymph nodes were dissected. The postoperative paraffin pathological diagnosis revealed parathyroid adenocarcinoma and the level of serum Parathormone (PTH), calcium and phosphorus showed no abnormality (PTH: 66.1 pg per

milliliter, Ca: 2.31 mmol per liter, P: 1.17 mmol per liter) (Figure 2). In addition, Technetium-99 methoxyisobutylisonitrile (<sup>99m</sup>Tc-MIBI) imaging showed that other parathyroids appeared no abnormality. At a one month follow-up visit after operation, no discomfort or side effect were complained by the patient.